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THE POLISH FURNITURE INDUSTRY – A VISION OF THE FUTURE

The article contains information and results of research concerning the Polish furniture industry. The author's vision of operation of furniture companies in the future is presented in comparison to general characteristic of this industry, changes in production, export, and innovation activities¹.

Keywords: furniture industry, innovation, structure of organisation, Poland

General characteristic of the furniture industry in Poland

Since the beginning of 1990s the furniture industry has been considered one of major drivers of the Polish economy and export. This industry represents a considerable percentage of GDP (0.8%), overall production value (1.2%), and total employment in industry (5.9%). For a dozen or so of years the furniture industry has been demonstrating high production dynamics. In the period 2005–2008 furniture production increased from PLN 20.0 billion to PLN 25.5 billion, i.e. by 27%. As a rule a relatively good situation of the furniture industry is an effect of big export volumes and the exchange rate of zloty to euro and dollar that is periodically favourable for exporters. For many years furniture exports in relation to production has been amounting to 79–88% (73% in 2008).

In the period 2005–2008 the value of Polish furniture exports rose from USD 5.3 billion to USD 7.9 billion. Germany is the biggest consumer of furniture from Poland. In 2008 Germany purchased 33% of Polish furniture, France 9%,

¹ The article contains part of results of an analysis entitled “Technological and product innovation in the Polish furniture industry” prepared within the framework of a project entitled “Foresight in the wood science and industry – research development scenarios in Poland till 2020” (POIG 01.01.01-30-022/08). The project is co-financed by the European Regional Development Fund (ERDF) within the framework of Operational Programme Innovative Economy 2007–2013 and carried out in the Wood Technology Institute in Poznan.

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Great Britain 6%, the Czech Republic 6%, Sweden 5%, the Netherlands 5%, Belgium 4%, and the United States 3%.

Poland is an eminent furniture producer with its established sixth place amongst European countries (after Italy, Germany, Great Britain, Spain, and France). The furniture industry employs a considerable and ever growing number of people. In 2005 employment in this industry amounted to over 155 thou. people, and in 2008 to over 168 thou. people, i.e. it was by 8% more.

The Polish furniture industry is much dispersed. There is a large number of small and very small enterprises. In 2006 the number of registered business entities in the furniture industry was around 24.5 thou., of which companies of employment of up to 9 people amounted to 22.3 thou., i.e. 91%. At the same time, there is a high level of production concentration in big companies in Poland.

Approximately 65% of furniture production comes from over 500 big companies (employing more than 50 people). There are 99 enterprises employing over 250 people, and ten biggest producers manufacture around 30% of total production. The industry is characterised by considerable presence of foreign investors, amongst whom German investors dominate.

Investments and innovation in the Polish furniture industry

It stems from statistical data that expenditure on investments in the furniture industry² has been increasing in recent years. In the period 2005–2007 the recorded growth of investments in this industry was over 20% to the level of PLN 1.8 billion.

The competitiveness of the Polish furniture industry to a great extent depends on the level of technical equipment of plants, applied technologies, and production innovativeness. The innovativeness of the furniture industry, despite the improvement observed in recent years, is unsatisfactory. The expenditure on innovation of furniture companies amounts to 2.0% of the value of sold production of furniture. In 2007 in the furniture industry the outlay per one company that carried on the innovation activity was PLN 3.0 M.

The innovation activity of the wood industry companies in the field of new knowledge generation is very low. The outlay on R&D (3.5%) and on personnel training connected with the innovation activity (0.1%) is only a small percentage in the structure of expenditures on innovation (table 1). In general, the furniture industry makes use of offered achievements of foreign and, to a less extent, domestic technical thought.

² Together with other production activity – section 36. of The Polish Classification of Activities (PKD).

Table 1. Structure of expenditures on the innovation activity in the furniture industry¹ in 2007**Tabela 1. Struktura nakładów na działalność innowacyjną w przemyśle meblarskim¹ w 2007 roku**

Detailed list <i>Wyszczególnienie</i>	Share of the investment outlay [%] <i>Udział nakładów na inwestycje [%]</i>
Technical machines and devices <i>Maszyny i urządzenia techniczne</i>	49.2
Investments in buildings and structures <i>Inwestycje w budynki i budowle</i>	44.0
Research and development activity <i>Działalność badawczo-rozwojowa</i>	3.5
Purchase of a ready technology in the form of documentation and rights <i>Zakup gotowej technologii w postaci dokumentacji i praw</i>	0.04
Personnel training connected with the innovation activity <i>Szkolenie personelu związane z działalnością innowacyjną</i>	0.1
Marketing of new and modernised products <i>Marketing dotyczący nowych i zmodernizowanych wyrobów</i>	1.4
Other <i>Pozostałe</i>	1.8
Total <i>Razem</i>	100.0

¹ Together with other production activity – section 36. of The Polish Classification of Activities (PKD).

¹ Łącznie z pozostałą działalnością produkcyjną – dział 36. PKD.

Source: Calculations based on: [Statistical Yearbook 2008]. Central Statistical Office (GUS), Warsaw 2008, p. 423.

Źródło: Obliczenia na podstawie: [Rocznik Statystyczny 2008]. GUS, Warszawa 2008, s. 423.

As it stems from the research of Kapuściński and Listwoń [2007], in the last 3 years a little over 84% of companies surveyed by them have taken up activities that have influence on the company's competitiveness (fig. 1). In this group 74% of companies launched new or significantly improved product/service, 44% invested in new or significantly improved production processes or solutions (taking into account processes concerning supply and sales), 1/3 of the respondents made significant changes in operation organisation or introduced a new way of it, and 22% introduced new or significantly improved marketing concept. Approximately 47% of total number of enterprises introduced changes concerning more than one of the aforementioned innovativeness aspects.



Fig. 1. Innovation types in furniture companies that carry on the innovation activity
Rys. 1. Rodzaje innowacji w przedsiębiorstwach meblarskich prowadzących działalność innowacyjną

Source: [Kapuściński, Listwoń 2007]

Źródło: [Kapuściński, Listwoń 2007]

Customer directions constitute the most common and most important source of suggestions of innovative solutions. In addition, introduction of new products into companies' offer usually is preceded with search after information during industry fair (47%) and specialist conferences (43.5%). A source of innovativeness in furniture companies consists of ideas of their own employees as well. The research of Kapuściński and Listwoń [2007], indicates that information from specialist press, own R&D activities, peering at products of other companies in the industry, and information from suppliers, often are the factors as well. However, those factors are graded differently as regards their importance. In that group of factors directions from suppliers are rated the highest, then follow own R&D activities, information from specialist press, and peering at products of other companies from the industry. The attention is drawn to the fact that in none of the surveyed companies application of innovative solutions was the result of co-operation (contacts) with scientific and R&D organisations.

As it stems from research, in 2005 a bit over 34% of companies did not engage in any type of the innovation activity. The other producers, who bet on innovativeness in their business, were concentrated mainly on purchase of machines and devices (56%), design development (28%), and personnel training (25%). Few companies also took up R&D activities carried out in their own works and marketing actions connected with technical innovation (around 6.25%).

The Polish furniture industry must be competitive. In the nearest future its ability to participate in the global trade will decide the industry's competitiveness in the first place. The companies have to base their competitive positions on sustainable competitive edges that enable them to gain and keep new markets at

a local, regional and international scale. Such position may be gained thanks to innovation. Therefore, the entrepreneurs have to keep on looking for and implementing results of R&D activities, inventions, new business concepts, and organisational ideas. Thus, for the entrepreneur innovation means refinement and development of the existing technologies of production, exploitation, and those connected with services, as well as introduction of new solutions to organisation and management, improvement and development of infrastructure, especially the infrastructure responsible for collection and processing of information and making it available.

In the nearest 5–10 years' perspective previous sources of economic growth, such as low labour costs and cheap raw materials, will be running low. It will be more difficult to benefit from favourable geographic location or accession to the European Union. Therefore, the furniture companies should search after new sources of competitive advantage. The growth trends of high-developed countries indicate that only competitive advantage built on knowledge and innovation may assure sustainable development at present and in the nearest future. Poland must join in building of the global knowledge-based economy. The innovation activity in the Polish furniture industry should be more active and further gone in relation to its present, embryonic stage of development. The fast growth of production potential of Asian countries, especially China, India and Malaysia, is a factor forcing more dynamic development.

A very active policy (especially of China) in the field of implementation of Computer Integrated Manufacturing (CIM) systems for furniture production should be specially emphasised. Such systems combine management systems (e.g. ERP or MRP) with Computer Aided Manufacture (CAM) systems, as well as integrate Computer Aided Design (CAD) systems, thus creating an extensive integrated system of open control of various processes [Li 2000; Zhou, Chuah 2002]. The Chinese market analysts [Robb, Xie 2003] draw attention to the fact that Chinese companies consistently execute the innovation development policy laying great stress on low business costs, low prices of their own products, and at the same time doing their best to improve the quality of materials, processing, and furniture. The search in this field is concentrated not only on enhancement of the innovativeness of products (pattern-design and quality) and processes (technologies and materials), but also of business systems, including systems of employment, management, culture, clients, competition, sale, and the art of arranging exhibitions [Navarro et al. 2008]. The increase in industrial production in Asian and South American countries is a result of spurring the industrial initiative based on economic laws.

In the case of the European (including Polish) furniture industry a crucial question arises: will home furniture companies survive in the conditions of fierce international competition or are they doomed to vanish? In this regard there are three important scenarios for the furniture industry [Navarro 2008].

The first scenario entitled “Elegant solutions – the dream house and innovation” assumed such events as:

- revitalisation of economies of individual member states of the European Union and economic acceleration (including the USA) until 2010, full employment and extension of retirement age, and control of job immigration as mass phenomenon,
- an increase in the share of sustainable development policy in the field of urban and rural areas, urban polycentrism, fast development of information and communication technologies, and waiting for intelligent residential construction systems,
- an increase in investments in “intelligent” residential construction, an increase in apartment (house) values as a manifestation of such values as safety, stabilisation, respect for the environment etc., and a better condition of the furniture market, including an increase in its absorptive power.

While the second scenario named “A true brand – global suppliers and supply chain values” assumed trends like:

- economic slowdown in the period 2008-2010 and expansive cycle after this period,
- a global increase in economic discipline,
- huge consolidation of sale networks, enhancement of traditional sale of furniture by end users, strengthening the awareness that the brand of purchased furniture corresponds to the brand of the seller.

On the other hand, the third scenario under the name “Consumption reduction – budget and basics” assumed the following events:

- a serious recession in the EU as well as in the USA and slow development after this period,
- higher economic instability, employment stagnation and immigration pressure, a decrease in anticipated incomes,
- concentration on keeping of possessed residential space and prolongation of furniture use cycle, maintenance of the dominant role of function and price of furniture that have influence on decisions concerning furniture purchase and in consequence – reduction of absorptive power of the market,
- search after best combinations in furniture price optimisation, a serious crisis in mature furniture companies, all this will result in anti-dumping conflicts.

Structural and organisational changes in the Polish furniture industry

Until the end of 1970s trends towards establishing big production plants were dominant in the furniture industry. Big factories were set up and production processes were long, many a time starting from roundwood processing and ending with distribution of products to salesrooms. In this way companies tried to

eliminate difficulties resulting from co-operation. However, benefits proved to have been apparent for the degree of use of some pieces of production equipment and machine tools was at a critically low level. The furniture was produced mainly to have been stored in warehouses and large series of identical products were preferred. On the other hand, central management during the long period of centrally planned economy contributed to serious inhibition of organisational development of furniture factories. Big and often badly run enterprises became organism unable to survive in the face of dynamic economic changes that occurred in 1990s. Previous magnates lost their position of monopolists due to emerging competition that could successfully tried to fulfil individual needs of customers. Thanks to their production flexibility and skill at selling new products the newly established plants, small in the beginning and employing dozen or so people, in a short time evolved into medium-sized and big companies with efficient organisation and “lean” production. The high production effectiveness and ability to easily adjust production to continuously changing needs dictated by variety of manufactured furniture products, were achieved thanks to application of innovative production techniques. Apart from modern machinery, machine tools and numerically controlled processing centres, companies started to use management supporting computer systems. In the beginning those systems covered warehouse management, raw material supply planning, furniture design support, as well as organisation of sales and purchase. When computer integrated management systems of module structure appeared, it was possible to create systems taking into consideration individual requirements and needs of those companies. In many factories quality management systems compliant with the standards of ISO-9000 group were introduced as well.

Thus, groups of better developed companies formed. Those companies were characterised by reorganised organisational structures, modern equipment of production rooms, efficient computer support of some processes (e.g. design and construction, control of stock, fulfilment of purchase orders, sales orders, and production orders) or implemented computer system managing the whole company. Until this day continuous dynamic development, improvement of product quality, production manners and services may be observed in those companies.

In the last fifteen years many new furniture plants were established and production organisation in these units was built based on advanced production technique and supported by computer management systems. The possibilities offered by technical development in the form of flexible production lines (that can be refurbished thanks to computer programmes), automated warehouses of tools, materials and finished products, as well as state-of-the-art control and test devices, will soon make it possible to fully integrate production processes in furniture companies.

Furniture companies in the future – a vision

A furniture company of the future will be an unmanned enterprise in which perfectly integrated computer management system will make it possible to manufacture products with a minimum direct labour consumption. People will be responsible for proper management of the production process supporting system, which task will be performed only using computers installed in individual machines and devices. Today, taking into account computerisation development dynamics and common use of the Internet, it is difficult to depict future form of the 21st century furniture plant. The plant may be totally remote-managed by an administrator who will use information and telecommunications techniques that will ensure transfer of impulses from the person's brain to devices controlling all processes in the company. Those and similar plans should be aided by the strong trend of developed countries towards globalisation and development of actions promoting knowledge implementation.

The global economy based on knowledge, and information or telecommunications technologies, forces new skills in all vocations: traditional ones like furniture making or wood processing, and also new and those that will be only created. In the contemporary world producers of every kind of products, who meet the knowledge society needs, are aware of the great significance of the capital of mind. Drucker [1999] thinks that, "the basic economic resource – the means of production – is no longer capital, or natural resources, or labour, but is and will be knowledge". Knowledge has become thing of paramount importance as a source of innovation and social cognition. It has become a safe-conduct, pass and key to the world of success and power. Contemporary producers and service providers, who continuously look for novel methods for attracting new customers and keeping those already gained, first of all focus on innovative techniques and methods of knowledge organisation. At present, the drive for new resources of knowledge, recognition and possession of it is a specific expression of the enterprising person's desire for power over material world [Borowska 2006].

The inclination to hegemony over material world leads to the situation when information and knowledge constitute the fundamental production factor [Sokołowska 2005]. In time, there will be gradual move away from typical and time-consuming vocations towards professions that use information and telecommunications techniques more intuitively and to a greater extent. Therefore, there will be created intellectual entrepreneurship in global organisations directed at creation of material wealth using non-materialistic knowledge. Drucker [1999] calls coming new days and new civilisation "knowledge society".

A changeable composition of global organisation will enable it to quick and easy react to permanent changes by dynamically setting resources aside or releasing them and selecting only those that will be the cheapest and available in the shortest time. Although business entities will be dispersed and away from

each other, they will still remain mutually dependent, not because of hierarchy, but reciprocity of services provided to one another. Maybe a new modular business organisation will be established that will resemble orderly legions heading together in the same direction [Warnecke 1999].

With reference to knowledge-based or information-based organisations of the future, their structures will become unquestionably more level. Most of managerial positions, predestined to give orders, will be eliminated. The scope of duties will be changing dynamically depending on the task, and the term “position”, too static in relation to coming vigorous changes, will be substituted by the term “assignment” [Drucker 1999]. The organisation centre will look after this kind of organisational unit structure and gather crucial and priority entitlement. Undoubtedly, another processes common amongst global organisations, such as organisation virtualisation, will overlap the established organisational network.

The phenomenon of virtualisation is connected with operation of a company through outside resources and knowledge, and also through its own resources. A virtual company will consist of a few real enterprises which will be its partners. Services provided amongst partners will not be provided based on market rules and will not be one-time actions. The main trump of the virtual company will be its ability to dynamically change quantity and type of consumed resources, as well as finished production volume. This way a temperamental company will be created that quickly reacts to changing environment and continuously improves quality of its products and services in the conditions of constant benchmarking. [Warnecke 1999].

Virtual networks of companies may have their own minimum infrastructure and be characterised by changeable leadership [Mrówka 2001]. The value of a network of virtual enterprises consists in such things as their ability to built alliances to effectively compete for contracts, which they could not win on their own. Those enterprises create a special type of relations and may enter into many different economic sectors. However, it is a crucial issue that visions and strategies of individual junctions of the network are consistent, and the whole network should have a common vision.

A cobweb structure of global organisation will entail the necessity of decentralising every action, including decentralisation of leadership. In accordance with the subsidiarity principle, all decisions should be made at the lowest hierarchy level possible, as close to the client as possible [Handy 1996]. It means, that even in those global organisations, in which it is possible to easily distinguish hierarchical relations between units, more and more strategic competence, once reserved for the top management of the organisation, is delegated to lower levels. Therefore, an important function in such organisation will be the role of a leader-coordinator who can reconcile apparently conflicting interests of individual units of the organisation – fractals [Warnecke 1999]. The role of the

aforementioned leader of a local division, i.e. a fractal, will be equally important as well. In the conditions of internal market economy no fractal can be sure of its existence and it will require very efficient management and development and implementation of the right vision and strategy. A fractal will be an independent company unit whose goals and productivity can be unambiguously described. Its features are self-similarity and self-organisation [Morgan 1999; Warnecke 1999]. The system of fractals' goals should be consistent and it must serve achievement of the company's goals. An efficient communication and information system will link fractals into a network. As a matter of fact, a fractal organisation will be on the brink of order and chaos [Mrówka 2001].

Already today the relations of the Polish furniture industry with the global economy are impressive and deserve to be distinguished. Many big companies, with solely Polish capital, may take the liberty not to enter into co-operation with any of the global firms or networks. However, globalisation imposes on Polish managers new and previously unknown tasks stemming from the necessity of building multiethnic vocational relations within the framework of one organisation. Those tasks result from the fact that furniture plants in Poland are purchased by German, Scandinavian or British investors, and also from the fact that Polish plants are moved east due to increasing labour costs. An additional difficulty that is faced by Polish businessmen is the still low and unsatisfactory percent of well educated graduates of higher technical education institutions. In a society in which 2/10 of higher education institution graduates hold the engineer title it is extremely difficult to implement a vision of better use of specialists' knowledge. And soon this knowledge will evidently decide the future of an organisation and country. In the days when globalisation phenomena are getting popularised, it should be expected that organisational changes will affect small and medium-sized companies in the furniture industry as well. Those firms, thanks to their relations with strategic partners, will be able to build new, limitless, global or local virtual networks.

Conclusions

The Polish furniture industry is an industry that for many years has been one of the major drivers of the Polish economy. It is an industry that practically since the beginning of 1990s has been characterised by very high production dynamics and high active balance of foreign trade, and created numerous jobs. The fierce competition over a place in national market and foreign markets caused changes in structure, organisation, and marketing strategies of the Polish furniture industry. The operation of established new furniture plants to a great extent is based on advanced production technique based on computer management systems. The market offer of furniture producers has changed distinctly – the assortment of manufactured furniture has been broadened and the quality bettered. In the days

of dynamic development of computerisation and more common use of the Internet, further advantageous changes in the Polish furniture industry may be expected. It may be that a furniture company in the future will be an enterprise in which a perfectly integrated computer management system will make it possible to manufacture products with a minimum interference of human.

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POLSKI PRZEMYSŁ MEBLARSKI – WIZJA PRZYSZŁOŚCI

Streszczenie

W artykule przedstawiono informacje dotyczące znaczenia przemysłu meblarskiego w polskiej gospodarce, wielkości jego produkcji, eksportu, zatrudnienia, liczby działających podmiotów gospodarczych w latach 2005–2008. Wskazano na fakt małej aktywności innowacyjnej w przemyśle meblarskim w zakresie generowania nowej wiedzy. W strukturze nakładów na innowacje udział nakładów na działalność badawczo-rozwojową stanowi 3,5%. Zwrócono uwagę na konieczność podnoszenia innowacyjności i konkurencyjności w polskim meblarstwie, zwłaszcza wobec dynamicznego rozwoju potencjału produkcyjnego krajów azjatyckich, a w szczególności Chin, Indii oraz Malezji. Przedsiębiorstwa polskie powinny opierać swoją pozycję konkurencyjną na trwałych przewagach, pozwalających zdobywać i utrzymać nowe rynki w skali lokalnej, regionalnej i międzynarodowej. Jak pokazują trendy krajów wysoko rozwiniętych, trwały rozwój może zagwarantować aktualnie i w najbliższej przyszłości przede wszystkim budowanie przewagi konkurencyjnej opartej na wiedzy i innowacjach. Przedstawiono także wizję funkcjonowania przedsiębiorstw meblarskich. Fabryka mebli w przyszłości może być przedsiębiorstwem bezzałogowym, w którym doskonale zintegrowany informatyczny system zarządzania umożliwi wytwarzanie wyrobów z minimalnym bezpośrednim udziałem pracy człowieka. Będzie on odpowiedzialny za prawidłowe zarządzanie systemem wspomagającym procesy produkcyjne przy wykorzystaniu komputerów zainstalowanych na poszczególnych maszynach i urządzeniach.

Słowa kluczowe: przemysł meblarski, innowacyjność, struktura organizacyjna, Polska