

Editorial



In the Editorial in this Volume of the Journal of Achievements in Materials and Manufacturing Engineering, my consideration on the perspective scientific researches and the implementation works starting from the possibilities presented in Volume 22 Issue 2, and which result from the Framework Programme for Research and Technological Development called the Seventh Framework Programme and abbreviated FP7, which was set up at the end of 2006 by the European Union in order to fund and promote European research and technological development is presented. The basis of those activities is the Lisbon Strategy, also known as the Lisbon Agenda or the Lisbon Process. In March 2000, the European Union Heads of States and Governments agreed to make the European Union "the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion". In particular, it was agreed that to achieve this goal, an overall strategy should be applied, aimed at preparing the transition to a knowledge-based economy and society by better policies for the information society and research and development, as well as by stepping up the process of structural reform for competitiveness and innovation and by completing the internal market, modernising the European social model, investing in people and combating social exclusion and sustaining the healthy economic outlook and favourable growth prospects by applying an appropriate macro-economic policy mix. In November 2004 the then Ministry of Science and Informatisation in Poland presented the document included "Proposed ways of the development of science and technology in Poland till 2020". Those tasks were a subject of the consideration in the previous issue of the Journal of Achievements in Materials and Manufacturing Engineering. The condition of the achievement in Poland fast and broad development is knowledge-based economy in which a real richness including effectiveness of management, economy competitiveness and new workplaces connected with the production of material resources and also with manufacturing, transfer and use of knowledge. Knowledge-based economy is able to cause sustainable development, the creation of a bigger number of constant and innovative workplaces and is characterised with the greater social unity, characterised with the fast development of those fields of economy and which are connected with the information processing and the development of science, branches of the industry included in high technology and also technologies and services of the information society. It is a stand taking into consideration mainly the scientific society's point of view.

It is obvious that it requires also the look of businessmen and industry. The next important governmental document in Poland is then "The conception of horizontal industrial policy in Poland" announced by the Ministry of Economy at the end of February 2007. Surely, this document is an important proposal concerning the development of industry in Poland. That document deals with integrated approach to horizontal politics which have an essential influence on functioning and development of industry and keeping economic growth. The description of undertaken horizontal activities connected with the raise of competitiveness of industrial companies in all economic sectors, and with the constant raise of quality of framework conditions connected with carrying out industrial activities in the country as opposed to so far industrial politics realised in Poland since 1989 till today and concentrated on a sector approach, associated with the transformation of industry into the competitive branch of industry. The social and economic development of Poland is then in a significant degree connected with the State and developmental perspectives of industry and a synergic effect of its competitive position and market force in the rest economic sectors. The globalisation processes, trade liberalisation and the disappearance of trade barriers and investment limits connected with it decide on strong competitiveness pressure of foreign companies into Polish companies, and relatively low job expenses in Poland and high absorbercy of home market, as factors still often determining the competitiveness position of those companies will loose their meaning as pattern factors soon. That is why it is necessary to build competitive predominance of domestic companies pursuant to new sources connected with quality, creativity, scientific researches, innovativeness of offered products and acquire abilities and the use of knowledge by industry in order to work out modern functionality and high quality and fulfilling requirements of competitiveness in the global market. Horizontal politics which ensures sustainable economic, social and environmental development enabling Polish companies the achievement of maximum advantages from tools of industrial politics of the European Union and their functionality at the uniform European Market meet those aims. That approach concerns mainly biotechnological, chemical, wood, electronic, pharmaceutical, information and communication technologies, light, furniture, machine and automotive industry in which contribution of private properties is dominating or even entire. Thanks to undertaken activities there are conditions for the development of new interdisciplinary sectors having a big growth potential, connected with intensive use of scientific research and developmental works results such as for example biotechnology, nanotechnology, information and satellite technologies. It was pointed out that horizontal activities are focused on raising innovativeness and technological progress in companies, improving qualification of human potential and adjusting its structure to market needs and are connected with the removal of legal and administrative barriers curbing the economic growth. However, such an approach does not exclude sector politics e.g. against energy and defensive industry which have a strategic meaning for the whole society. The document presents conditions, current state and challenges standing in front of Polish industry, the aim of horizontal industrial politics with integrated approach towards innovative and trade politics, environmental protection and the development of human resources, points out to the possibilities of raising the pace of the economic growth in industry through the growth of its competitiveness and presents introductory assumptions of competitiveness analysis and the development of technological trends, substituting sector strategies existing so far. Fields having a key meaning for the development of competitiveness of Polish industry in which the State intervention have been identified and include: researches, development and innovativeness, information and communication technologies, human potential, environmental protection and sustainable development, outlet, protection of industrial properties, simplification and improvement of the system of legal regulations and access to funds. In the framework of suitable fields of activities mentioned in the document a synthetic set of financial and non-financial support tools coming from strategy and governmental programme which application can have direct and indirect influence on competitiveness of industrial companies have been given. The fundamental source of financial support of companies in the nearest future will be financial tools from resources of structural funds available in the framework of central and regional operational programme and proposals of organisational and legal changes essential for the disappearance of existing developmental obstacles belong to non-financial tools. In particular parts of the document available solutions are described in details.

According to that document a special role in the realisation of horizontal industrial politics is played by academic and scientific societies. Polish industry is then characterised by a very low level of innovativeness and developmental tendencies in that field are disadvantageous. In developed economies the main driving force of productivity growth and effectiveness and constant economic growth guarantying the foundation of new and better workplaces are then, innovations based on researches and development, knowledge and education, and

innovativeness is a measuring tool of global competitiveness, generating significant value added in industry. Under pressure of innovativeness at the same time in the field of new products, technologies, organisation and a relation with company partners they implement innovations becoming more profitable and achieving a high level of modernity and competitiveness. In turn it requires investment in researches and development and

innovativeness. In the document it is emphasised that it is necessary to intensify and tighten cooperation of science and especially academic centres and industry at domestic and regional levels, with special taking into consideration of innovations, organisation of new companies and transfer of knowledge, because of the possibility of making unusually valuable contribution to the economic development in the State and regions by universities. Intensification of cooperation of science and business should take place as a result of the use of tools motivating both businessmen to make activities in aid of their development on the basis of implementation of results of research and developmental works and also encouraging scientists to take research and developmental works according to businessmen needs. As a result of that the balance between supply and demand of modern technological solutions should take place, what in a consequence should ensure the increase of economy demand for high technologies basing on results of research and developmental works, and constant cooperation between authors and receivers of innovative solutions will have an influence on their application in industry and achieving results often not available for single subjects, generating thanks to that significant value added for the whole economy. In the document the attention is paid to significance of information and communication technologies stimulating changes in organisation and business models in companies, stimulating their innovativeness and having an influence on rationalisation of production and better adaptation to a client's needs what has also a strong connection with scientific and academic societies.

With scientific societies and especially academic ones also issues of human potential being a basis of the economic growth and a social coherence factor are also connected. Technological transformation and restructuring processes taking place in economy and in companies force to improve human potential as a result of constant raising of staff qualifications and adjusting qualifications offered by education for needs of job market in industry, raising quality of education in schools at all levels, quality of education and advisory services provided in order to support initiative and dissemination of new forms of education, including e-learning, ensuring better programmes of undergoing stages and professional education, constant adult training (so called life-long learning) and preventing emigration of young and educated people while ensuring the achievement of professional specialisation accepted in all countries of the European Union. The level of the society education and the system of education must correspond with requirements of knowledge-based economy because it becomes a more dominating factor in manufacturing of goods and services and raise of their innovativeness. To fundamental tasks in that field a better use of potential of the education system in aid of the economic growth and the promotion of cooperation and the transfer of knowledge between sectors of science and higher education and industry belong. Surely, it is concerned with the education at 1st and 2nd level of studies, postgraduate and 3rd level of PhD studies, and also constant education after all mentioned levels of education. Proposed fields of activities ensure the raise of competitive position of companies and enable the creation of active posture among businessmen ensuring their pro-innovativeness and the fast adoption to market changes taking place in the European Union and the global market. Numerous tasks pointed out in that document deal with science and higher education and require close cooperation between the Ministry Economy and the Ministry of Science and Higher Education and also a cooperation with given scientific and academic centres. Surely, the assumption that supporting scientific researches made in close connection with needs of industry by the State will ensure growth of its innovativeness and in the consequence growth of its competitiveness in European and global markets and the economic growth of the State is right.

Among P.T. Readers of the Journal of Achievements in Materials and Manufacturing Engineering expect the representatives of the scientific society there are also the representatives of science and scientific research managers and also the ones of industry and given industrial companies. That is why numerous possibilities of the analysis of principles, possibilities and perspectives of the development of horizontal industrial policy in Poland. The willing for taking the floor in that subject master are invited to do that in our Journal. I am convinced that both those papers which can have direct and indirect influence on the discussed problem and will be published in our Journal in the future and also the one which are presented in the given Issue will be interesting for P.T. Readers. I wish a nice reading.

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Gliwice, in 2007