Ladies and Gentlemen,

we present you another publication of the INNOVATIONS series. This time it is devoted to innovative actions in the field of ICT. We have succeeded to engage scientists from the University of Lodz who focus on a wide range of matters related to the main subject of the publication. As a result, we obtained a multidimensional image of problems and development opportunities faced by local government units in relation to the development of information and communication technologies, in particular of innovative solutions. Although our publication is of scientific nature (also thanks to the review of professor Edward Stawasz from the Faculty of Management at the University of Lodz), the authors made efforts to discuss topics related to issues that are important from the perspective of the everyday life of residents as well as operation of enterprises and self-government administration of the Lodzkie Region. For the convenience of the Readers, the publication has been prepared in the form of a free e-book.

We invite you to download “INNOVATIONS 2014. Innovative ICT actions.” from www.si.lodzkie.pl. Innovative ICT actions

I wish you an interesting reading

Witold Stępień
Marshal of the Lodzkie Region

I would like to thank the management and academic staff members of the Department of City and Regional Management (Faculty of Management, University of Lodz), the Department of Local Government Economics (Faculty of Economics and Sociology, University of Lodz) and the Department of European Economic Law (Faculty of Law and Administration, University of Lodz) for their involvement in the elaboration of the publication. We will count on your cooperation also next year.
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Introduction

In the era of increasing competitive pressure and permanent growth in effectiveness of public services, the local government is searching for new, cheaper and more effective manners of executing public tasks it is charged with. The aim of such actions is to provide an adjusted public service of higher quality and to ensure a cheaper process of its production and delivery or benefits for the environment. The requirement to increase productivity and effectiveness of public service provision occurred in Poland in the 1990s due to the new public management, and it is still popularised within the framework of the local governance concept. Despite different assumptions and instruments, the two approaches towards local management focus on the provision of appropriate quality of public services: the first one does it through management techniques, market mechanism and contracts, and the second – through participation and negotiation procedures as well as a strive for consensus. Both approaches have created an atmosphere of a demand for innovative solutions, a new way of thinking, a redesign of local government operations. It is all accompanied with a redefinition of values to which local authorities refer within their activities.

In the context of radical changes called for by the new public management and local governance, it is justified to collate them to the concept of innovation. According to V. Bekkers, J. Edelenbos and B. Steijn, an innovation is every transformation in the public sector aimed to improve both its efficiency, performance and effectiveness, and social legitimacy. Implementation of instruments of the aforementioned concepts and adoption of a new operation philosophy at the local government level may be treated as a manifestation of innovative actions of local government units. Since both concepts are gaining popularity, an increase in the innovative activity of Polish local government units is to be expected. Moreover, according to B. Kożuch, orienting changes in the public administration towards innovativeness is justified by general regularities of the situational approach to management

and to the introduction of organisational changes, as well as by the necessity to observe the principle of economical activities\(^2\).

In many countries, the contemporary debate on innovations in the local government is focused on social innovations. It is an attitude reflected also in the recommendations of the European Commission. Social innovations are treated as an alternative to the traditional management. They require radical changes in stands and ways of thinking of the rulers and the ruled: the former are required to be open to citizens’ participation in local management processes, while the latter must engage in local issues. Thus, social innovations may be treated as a manifestation of fulfilment of local governance objectives.

Social innovations do not constitute the only category of potential innovations in the local government. Their range is wide, and each of the innovations may be founded on a different mechanism of local management: regulation, contract or negotiations. As a consequence, the aim of the chapter is to identify types of innovations implemented in the Polish local government and to attribute them to the mentioned concepts of local management.

**Innovations in the public sector – review of definitions**

Publications of Eurostat and OECD broadly define innovations as an implementation of a new or significantly improved product, process, new marketing method or new organisation method in business practice, in workplace or in internal relations.\(^3\) In order to define innovations implemented by the public sector, it is necessary to take the sector’s specific features into consideration. Innovativeness in the public sector consists in integrating implemented novelties or new knowledge into the system which depends on public decisions in order to improve current or introduce new forms of actions, services and practices, the final and the most visible result of which will be an increased efficiency of the public service and a better standard of population’s life, at least in the main areas.\(^4\) The specificity of innovations in the public sector becomes more visible in the case of effects of their implementation, which should contribute to the improvement of the quality of life of citizens. What is more, their unique features include:\(^5\):

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\(^4\) *Innowacje w sektorze publicznym. Raport przedstawiający aktualny stan wiedzy*, ARC Fund, Sofia 2013, p. 32.

\(^5\) Ibidem, p. 23.
- possibility to decrease expenses – the innovation leads to a reduction of public expenditure,
- noticeability – effects generated by innovations should be perceived by residents,
- relative advantage, compared to the idea, product or service preceding the innovation – the innovation provides solutions better than those used before,
- possibility to try – the innovation is tested on a small scale to make it possible to assess its effects, although it has to be noted that they may appear with a considerable delay,
- compatibility with (local/regional) values and views.

One of the main opportunities provided by innovations in the public sector is the improvement of both the quality and the scope of services offered to the society, including individuals, social groups and companies. Innovativeness allows local government units to better satisfy the needs and expectations of citizens, and sometimes also to manage in conditions of limited financial resources. The latter effect of innovation implementation results from its aforementioned ability to reduce expenditure.

The basis of innovativeness is a change in the current way of thinking and a redesign of current processes taking place in the local government. It should not be limited only to an improvement of single elements in particular areas of the local government’s activity. Entering the path towards innovativeness is related to a transition from the stage of single enhancements and improvements to a fundamental change in operation. By these means, the assumption of a systemic approach to innovativeness is put into practice.

It is worth to highlight that the implementation of innovations in the public sector, and thus in the local government, is considerably less common than in the private sector, in which they have been considered as a factor allowing to develop a competitive advantage for a long time. The main reason for the low innovativeness of the public sector is an insufficient competitive pressure inducing its organisations to seek more effective solutions. However, it is possible to indicate areas in which competitive conditions appear and may favour creativity and innovation, in particular in the local government. Competition is present in the field of provision of public services that have undergone the privatisation process, in public service quality benchmarking, and in the strive of local government units for external resources aimed at the strengthening of competitive advantage. Phenomena such as turbulent environment, globalisation, personalisation of services or digitalisation may create an effective innovation pressure in the public sector. In the opinion of E. Sorensen and

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J. Torfing, innovation-oriented attitudes are also imposed by the difficulty in solving problems that appear as a result of such phenomena as: climate changes, stratification of societies, urbanisation, development of agriculture. Another significant factor is, in their view, also globalisation, which places public sector organisations in competitive conditions.

The foregoing factors external in relation to public organisations and constitute elements of the broadly understood environment. Incentives for innovative actions may also originate from the public sector itself. Problems related to a low social legitimisation of public sector organisations are not insignificant. Innovations in the public sector are often considered to constitute a response to an increasing stagnation of the mechanisms that govern democracy and the resultant decrease in the public value. Another important factor favouring the search for innovative solutions noticed by V. Bekkers, L. Tummers and W. Voorberg is the multi-rationality of public administration. The necessity to reconcile different interests and competitive values may lead to the emergence of new combinations of problem definitions and strategies for their solution. An important role in the introduction of innovations is played also by other internal factors, such as: organisational culture and appropriate environment which favours learning and implementation of new solutions, and in particular the leadership in the local government. Studies conducted to date indicate that intra-organizational and inter-organizational cooperation networks (collaborative innovation networks) that accompany the introduction of innovations in the public sector are also significant. By establishing cooperation with scientific and research centres, experts, non-governmental organisations and enterprises, public organisations acquire the ability to generate new solutions.

Types of innovations in the public sector

Oslo Manual introduces a typology covering four types of innovations, i.e.:

- product innovation,

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– process innovation,
– organisational innovation,
– marketing innovation.

Not all innovation types distinguished in the private sector correspond to actions observed in the public sector. Taking objectives of the public sector, provided public goods and services as well as the activities conducted for citizens into account, types of innovation in this sector must be modified to a certain extent. Product innovation is replaced by service innovation due to service activities of the public sector executed for the benefit of citizens. In turn, marketing innovation is replaced by communication innovation which refers to the ways in which public sector organisations communicate with citizens\textsuperscript{14}.

\textit{Table 1. Types of innovations in the public and in the private sector}

<table>
<thead>
<tr>
<th>Innovations in the private sector</th>
<th>Innovations in the public sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product innovation</td>
<td>Service innovation</td>
</tr>
<tr>
<td>Process innovation</td>
<td>Process innovation</td>
</tr>
<tr>
<td>Organisational innovation</td>
<td>Organisational innovation</td>
</tr>
<tr>
<td>Marketing innovation</td>
<td>Communication innovation</td>
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</tbody>
</table>


P. Windrum complemented the foregoing list and created his own classification comprising 6 innovation types\textsuperscript{15}:

– service innovations, consisting in the introduction of new services or improvement in the quality of the already existing services;

– innovations in service provision, concerning new or changed manners of public service provision;

– organisational and administrative innovations, which introduce changes in organisational structures and new procedures;

– conceptual innovations, which consist in elaborating new and changing existing views and assumptions;

– strategic innovations, resulting from a change in the way of thinking;

– systemic innovations, introducing new or improved ways of interacting with other organisations as well as sources of knowledge.


Due to its administrative character, innovations in the public administration management apply to the local government. A. Alberti and G. Bertucci define them as creative ideas introduced to management practices, aimed at the solution of persistent public management problems. It means that they relate to new services, new practices and programmes, new approaches and new processes, compared to current solutions and rules prevailing in the public management system. Therefore, the notion of innovation in public administration management corresponds to the conceptual innovation.

In the case of local government, in particular at the level of local communities, social innovations can also be introduced. They are aimed to solve social problems, both individual and collective, and to respond to social needs. They are often defined in terms of social entrepreneurship, which should be interpreted as innovative, creative solution of social problems with the involvement of citizens. Social innovations consist in changes in concepts, processes, products, and ways of financing, organisational changes as well as new relations with stakeholders or territorial units, changes in the manner of formulating policy or collaboration.

In addition to solving social problems, these innovations generate also other benefits. F. Moulaert draws attention to their positive impact on social relations, while Theoretical, Empirical and Policy Foundations for Social Innovation in Europe (TEPSIE) stress the ability of the society to act and to co-manage. In the case of social innovations, an important role is played by the environment, the context in which they are embedded. The dissimilarity of assessments and effects of the same tool used in different conditions is highlighted by A. Evers.

Innovativeness of public sector in Poland – review of research results

Innovativeness of the public sector, as well as of the local government, as a factor determining the competitiveness and development of the European economy, constitutes a subject of interest of the European Commission. In order to evaluate the level of public

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sector innovativeness and to promote public innovations, the European Commission conducts a range of initiatives. Drawing on the example of the business sector innovativeness ranking, it published in 2013 a pilot public sector innovativeness ranking called “European Public Sector Innovation Scoreboard” (EPSIS). Its results confirm the divergent level of public sector innovativeness in particular European states. The measurement was carried out based on indicators illustrating the potential, actions and products. The public service innovation potential is determined by human resources (evaluated in terms of the employment share of creative occupations and the percentage of public administration employees with a higher education degree) and the quality of public services (evaluated with the use of such indicators as government effectiveness, regulatory quality, ITC use in public administration, online availability of public services). Innovative actions are measured with the use of indicators showing opportunities, growth factors and barriers to innovation faced by public organisations. As for the measurement of products, it consists in presenting the quantity of public sector innovations, innovativeness of public procurement and influence of business results in a given country.

In the light of the ranking, the Polish public sector is not innovative. It was classified among public sectors of Bulgaria, the Czech Republic, Germany, Greece, Hungary, Italy, Lithuania and Slovakia, for which the value of at least 10 indicators is below the European average.

Table 2. Indicators of innovativeness of the Polish public sector compared to the European average

<table>
<thead>
<tr>
<th>Innovativeness indicators</th>
<th>Poland</th>
<th>EU average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of persons pursuing “creative occupations” (Eurostat)</td>
<td>32%</td>
<td>23%</td>
</tr>
<tr>
<td>Share of employees with a higher education degree (Eurostat, Labour Force Survey)</td>
<td>28%</td>
<td>29%</td>
</tr>
<tr>
<td>Government effectiveness (World Bank)</td>
<td>0.6</td>
<td>1.17</td>
</tr>
<tr>
<td>Regulatory quality (World Bank)</td>
<td>0.9</td>
<td>1.26</td>
</tr>
<tr>
<td>Increase in the effectiveness of public administration services due to the use of ICT (World Economic Forum, 2012)</td>
<td>3.5</td>
<td>4.58</td>
</tr>
<tr>
<td>Online availability of public services (Eurostat, Information society statistics)</td>
<td>79%</td>
<td>84%</td>
</tr>
<tr>
<td>E-government development index (UNPAN, UN e-Government Survey 2013)</td>
<td>0.65</td>
<td>0.75</td>
</tr>
<tr>
<td>Share of service innovators in innovations (Innobarometr 2010)</td>
<td>67%</td>
<td>64%</td>
</tr>
<tr>
<td>Share of process innovators in innovations (Innobarometr 2010)</td>
<td>84%</td>
<td>76%</td>
</tr>
<tr>
<td>Significance of internal barriers for innovation (Innobarometr 2010)</td>
<td>50%</td>
<td>30%</td>
</tr>
<tr>
<td>Significance of external barriers for innovation (Innobarometr 2010)</td>
<td>58%</td>
<td>30%</td>
</tr>
<tr>
<td>Active management role in innovation (Innobarometr 2010)</td>
<td>29%</td>
<td>34%</td>
</tr>
<tr>
<td>Significance of external knowledge for innovation (Innobarometr 2010)</td>
<td>26.5%</td>
<td>26.5%</td>
</tr>
<tr>
<td>Share of employees engaged in groups meeting on a regular basis in order to develop innovations (Innobarometr 2010)</td>
<td>20%</td>
<td>22%</td>
</tr>
<tr>
<td>Share of public administration organisations which implemented service, communication, process or organisational innovations (Innobarometr 2010)</td>
<td>94%</td>
<td>89%</td>
</tr>
<tr>
<td>Share of “new” services in all implemented service innovations</td>
<td>12%</td>
<td>27%</td>
</tr>
</tbody>
</table>
Earlier, i.e. already in 2010, the European Commission published a report entitled „Innobarometr 2010. Analytical Report on Innovation in Public Administration”, presenting the results of research on innovativeness of over 4000 public administration organisations from 27 Member States, Norway and Sweden. The research revealed innovative activity of two thirds of organisations over the last 3 years, consisting in the introduction of a new or considerably improved public service. In the case of Polish public administration organisations participating in the study (409 organisations), over 67% confirmed to have demonstrated such activity. The indicator is at the level of the European average. Research results published in the Innobarometr showed that the innovative activity of entities responsible for the provision of public services depended on disproportions between social needs and limited resources. The higher the disproportion, the greater the need to seek innovative solutions.

In order to honour the most innovative public administration organisations in the EU, in 2013 the European Commission awarded the European Prize for Innovation in Public Administration to 9 public administration organisations. Based on four criteria, laureates are determined in three categories: initiatives for citizens, initiatives for firms, initiatives for research and education. So far, no Polish public administration organisation has been awarded.

Another institution monitoring innovations in the public sector is the OECD. Within the framework of the “Observatory of Public Sector Innovation” initiative, information is gathered with regard to innovations implemented in public organisations around the world which contributed to an improvement in cost efficiency, quality of public services or users’ satisfaction. The aim of the platform is to constitute an inspiration to the implementation of new solutions, search for new partners, promotion of innovativeness in the public sector. At present, the observatory provides information concerning 109 practices, most of which are process innovations. Their analysis allows to outline a couple of characteristic trends related to public innovations. The first one refers to the personalisation of public services, the second to actions aimed to achieve savings by means of consolidation of functions of public administration units, e.g. in the form of shared service centres, and the third concerns the
creation of competitive conditions. Innovations in the public sector often consist also in the introduction of information and communication technologies. Among all innovations reported to the monitoring system, 7 were implemented in Poland, mainly at the level of government administration.

Innovativeness of Polish local government units

The innovation potential of the local government is considerable. Innovations may be introduced in nearly all fields of a commune’s activity (to its administrative structures, to the public service provision process, as well as to the local management) and in relation to various types of local public services (administrative, social or technical ones). Different types of innovations are implemented: organisational, service, process and communication ones. It is worth to pay attention to theoretical and ideological background of the foregoing examples of innovations in the local government. They result from assumptions of the new public management and of local governance. The former focus on a strive to improve the efficiency of undertaken actions, and the latter are oriented towards elaborating solutions within negotiations and attempts to achieve a consensus as well as community involvement in the management of a local government unit.

The observed organisational innovations implemented by local government units were intra-organisational transformations, mainly in the organisational structures of offices and human resources management systems. Moreover, it is possible to observe a trend consisting in the creation of external structures in the form of municipal holdings, purchasing groups, shared service centres. Another organisational innovation are new forms of cooperation between local government units (social cooperatives) and between sectors (strategic multisectoral partnerships).

Table 3. Organisational innovations implemented by local government units according to types and concepts of local management

<table>
<thead>
<tr>
<th>Organisational innovation type</th>
<th>Examples of innovations</th>
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<tbody>
<tr>
<td></td>
<td>New public management</td>
</tr>
<tr>
<td>Intra-organisational innovations</td>
<td>Task forces</td>
</tr>
<tr>
<td></td>
<td>Decentralisation of planning and of control functions</td>
</tr>
<tr>
<td></td>
<td>Reduction of hierarchy levels</td>
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<td></td>
<td>Quality circles</td>
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<td></td>
<td>Quality certificates</td>
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As far as service innovations are concerned, it is worth to mention various e-services, such as one window services, online treatment, patient monitoring, e-counselling, e.g. concerning waste separation, as well as eco-innovations and technological innovations. Their goal is to increase the accessibility of public services with the use of information and communications technologies, a wide use of which in the public administration is fostered by new public management.

Process innovations in local government units will be connected with the implementation of electronic administration and electronic documentation flow, as well as of modern management tools, including integrated strategic management and development monitoring, innovative social participation methods or co-production methods of public service design. This group of innovations comprises practices aimed to improve the efficiency of public services, as well as to better adjust local policy and local management to the needs and expectations of citizens.

The latter group covers communication innovations that consist, inter alia, in using social media while implementing information policy of a public sector unit, in representatives of local authorities keeping blogs, in launching interactive websites providing data related e.g. to the monitoring of development strategy or local government spending. Postulates of transparency and open public data access implemented thanks to those innovations fall within the scope of assumptions of the public co-management concept.

**Conclusion**

In the context of innovative processes, local government units play a dual role. On the one hand, they are participants of regional innovation systems in which they exercise the function of creators of appropriate conditions for innovative processes and links in the innovation system. On the other hand, they may become innovators themselves by introducing new solutions to their administrative structures, production processes and provision of public services and management processes. The ability to introduce innovations, especially technological ones, depends on financial capacities of a given unit, on the
openness, as well as on the need for them experienced by the authorities, administration and recipients of public services. Generation of innovations (organisational, process, social and management-related ones) is determined, to a considerable extent, by the potential, knowledge, creativity and entrepreneurship of officials and representatives of local authorities. The ability to cooperate with other sectors is another factor favouring the development of innovations, as the latter are usually created where knowledge, experience and different perspectives for analysis and assessment – presented by public, private and social administration entities – are accumulated.

There is no doubt that innovations in the local government are necessary, in particular in the context of the requirement to improve the efficiency of its operation and effectiveness of solutions to local problems. Innovations allow to exercise current public tasks with the use of new means and methods, as well as to generate new services for citizens. The “new” is usually the response to the existing inefficiencies or low quality of a public service.

It is difficult to determine the scale of innovativeness of the local government sector in Poland due to the lack of comprehensive data. Undoubtedly, Polish local government units are subjected to constant innovativeness pressure and yield to it. It is proven by an increasing number of implemented innovations, as well as by the activity of social innovators in local environments. An important factor stimulating changes are funds from the EU budget allocated, among other things, to systemic projects concerning management support. However, it is most of all the inefficiency of current tools and operation methods that leads local government units to the creation of new ideas and implementation of innovative solutions.

Literature:
The chapter is devoted to innovations in the local government. It describes the specific character of public innovations and identifies types of innovations implemented in local government units. The background for the presented considerations are two trends in local management: new public management and co-management. Moreover, the chapter comprises an attempt to access the innovativeness of the Polish public sector, compared to EU countries, with the use of innovation indicators published by the European Commission and the OECD. Low positions in the rankings indicate the necessary orientation of changes in the local management.

**Key words:**
innovation in the public sector, local government, new public management, co-management

Abstract

The chapter is devoted to innovations in the local government. It describes the specific character of public innovations and identifies types of innovations implemented in local government units. The background for the presented considerations are two trends in local management: new public management and co-management. Moreover, the chapter comprises an attempt to access the innovativeness of the Polish public sector, compared to EU countries, with the use of innovation indicators published by the European Commission and the OECD. Low positions in the rankings indicate the necessary orientation of changes in the local management.

**Key words:**
innovation in the public sector, local government, new public management, co-management
Introduction

Although the notion of information society was known already in the 1960s, it was clearly defined in mid 1990s in the Bangemann Report. According to that publication, information society is capable of and able to use information systems and telecommunications services, as well as to send and remotely process all information. Technological advancement and innovativeness are currently the determinant of socio-economic development of a country, region or city. They are also a determinant of civilisational progress, allowing for a change of the existing economic order into a new, more effective system based on a high competitive capacity. However, the development of a city founded on modern technologies requires the possession not only of the technologies themselves, but also of an appropriately prepared infrastructure, elaboration of databases, which could be combined into an information network of the city, and creation of a management system based on social integration, co-management and joint responsibility for the functioning of the city.

In the face of new processes taking place in the socio-economic dimension of a city, local authorities must redefine the management system and adapt it to changing development factors. It is not possible to determine rigid framework of the adjustment of cities to all types of changes. However, local authorities more and more often use innovations and modern technologies within city development management processes. Advanced techniques should be used for the purposes of city management in every field of the functioning of the city, from planning and performance of own tasks to the control and monitoring of actions. The city management system itself is composed of two levels – the first one is related to procedures and management rules, while the second comprises management personnel, technical infrastructure and IT equipment, with the use of which the activities of local authorities are conducted. The aim of this article is an attempt to answer the question of the extent to which

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1 The article was elaborated as a result of implementation of the project founded by the National Science Centre under decision no. 2011/03/B/HS4/03892
2 Europe and the Global Information Society: Recommendations to the European Council
Polish cities have adjusted their management instruments to new challenges, which include technical advancement and development of information society. The paper constitutes a basis for further research concerning new techniques and methods of city management in the context of the use of advanced information and communications technologies.

**Information society**

The idea of information society has been well-known all around the world for many years. Already before World War II, economist Fredrich von Hayek considered information to be an intangible asset, and the notion of *information society* developed in the 1960s, after the publication of an article written by Tadao Umesao concerning a society based on information processing\(^4\). Subsequent publications clearly indicated the role of intellectual services and technologies, as well as the need to process and use information for the purposes of socio-economic development of the world. In other words, information has become a key resource of a modern and efficiently functioning economy. The resource is special, *inter alia*, because of its universal impact, as well as methods of its processing and transfer\(^5\). Thanks to those methods information processing constitutes the essence of the creation of national income\(^6\).

The term *information society* has been used in numerous strategic documents of many countries and political-economic organisations of the world. In Europe, it was used for the first time in 1978 in a report concerning orientations of the development of France. In 1994, the European Union elaborated the *Bergmann Report*, which enumerated social and economic benefits linked to the transformation of the post-production society into the information society\(^7\). In 2005, also a program to develop an information society – *European Information Society 2010* – was adopted. As far as Polish documents concerning the development of an information society are concerned, it is worth to mention e.g. recommendations of the 1st Polish IT Congress of 1994, which highlighted the necessity to take the role and significance of ICT into account in the new development strategy of the country, and the report entitled *Poland on the path to the Global Information Society [Polska w drodze do Globalnego Społeczeństwa Informacyjnego]* elaborated in 2002 by the United Nations Development

\(^{7}\) The *Europe and the Global Information Society: Recommendations to the European Council Report*, commonly called referred to as the Bergmann Report, defines the information society, *inter alia*, as characterised with preparedness and ability to use ICT systems in the socio-economic life.
Programme (UNDP). The latest Polish document is the *Strategy for the Development of the Information Society in Poland until 2013*, which embodies the priorities of the EU policy relayed to the information society resulting from the objectives of the *Lisbon Strategy* and *eEurope - An information society for all* initiatives.

The information society does not have one, uniform definition. Depending on the scientific discipline, the weight of particular elements characterising the society is different. This multifaceted nature of the definition obviously results from the adopted identification criterion. From the technical point of view, the development of advanced ICT techniques, which positively impact the social and economic dimension of a state by transforming the existing system of employment, exercising authority, education, production and services, is the most significant for the development of the information society. From the economic perspective, the most important elements are information and knowledge, which have become a global commodity. As far as space is concerned, due to the development of advanced information and communication techniques it is possible to notice changes consisting in the erasure of national, cultural and economic borders in the global society. The reason for that is the fact that hotlines and data highways existing in the virtual space go beyond territories of particular states. In turn, in the cultural context, it is possible to state that the contemporary culture is being transferred to the virtual reality.

Most authors believe that the most important element of the development of information society are information and communication systems existing within its framework. The terms digital society, network society and media society are used interchangeably. However, regardless of the approach, all definitions contain certain common features characterising the information society. They include:

- developed means of production, processing, gathering and transfer of information,
- society’s skills related to the use of information technologies,
- high rate of information technologies use in the socio-economic life.

The assessment of the level of information society development depends on adopted parameters. Generally, the most important development indicators in a given country are considered to include:

- number of computers per citizen,

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8 United Nations Development Programme – UN agency operating since 1971, currently in 166 countries, focused on solving development problems.

• percentage of population using information and communication techniques,
• Internet access,
• share of the ITC industry and services in the GDP,
• rate of employment in the ICT industry and services,
• ICT service offer of the public administration\(^{10}\).

To sum up the definition problem, it has to be stated that the information society is another stage of the evolution of society, founded on modern information and communication techniques as well as on an extensive telecommunications network, the coverage of which comprises all citizens. The information society has at its disposal highly developed information and communication processing means, which constitute the basis for the creation of the national income and providing sources of upkeep for the majority of the society. It has to be highlighted that important factors defining the information society include not only the universal access to ICT technologies, but also the citizens’ ability to use them for professional and personal purposes.

One of the topics of the debate concerning the information society in Europe is the role of the social capital contributing to the development of new media. Social capital may be defined as qualities of all social organisations based on cooperation oriented towards the achievement of common benefits, trust and active citizenship\(^{11}\). As for the new media, it is a quite broad notion referring to various forms of electronic communication which is possible thanks to the computer technology. They use, among other things, electronic publications on CD-ROM, DVD, digital television and, above all, the Internet\(^{12}\). Studies on the development of the Internet show that a considerable part of people’s social and economic life has been transferred to the virtual reality. The number of web users increased in 2011 compared to 2000 by 500%. Similar changes has taken place in the economic field, which is proven e.g. by the constantly growing number of commercial transactions conducted via the Internet\(^{13}\).

City management

Cities are organisational structures that, due to the complexity of social, economic and spatial processes that take place within them, require their managers to possess broad knowledge concerning methods and ways of management in a rapidly changing reality. The


\(^{12}\) www.stat.gov.pl, (05.04.2013)

\(^{13}\) Leeuw F., Leeuw B., Cyber society and digital policies: Challenges to evaluation?, in: Evaluation 18(1), 2012, p. 112
functioning of cities is regulated, *inter alia*, under the Commune Local Government Act\textsuperscript{14}. City management is understood as one of the forms of governing the functioning of the city as an organisational unit, aimed to ensure the fulfilment of its objectives while observing the sound management principle\textsuperscript{15}.

The objects of a self-governing unit – the city – consist in performing public tasks with the use of, *inter alia*, legal measures, including the instruments of power. The basis for the exercise of power is constituted by three principal factors:

1. Formal competences – understood as sources of power, resulting both from legal norms and from organisational powers of the public administration.
2. Material competences – resulting from the possession of specific tangible and intangible resources, which are important for the functioning of a given local government unit.
3. Intellectual competences – depending on personal characteristics of persons exercising power in the city, as well as their knowledge and skills\textsuperscript{16}.

A city is an open system with its own organisational structure and specific features indicated in the theory of organisation and management\textsuperscript{17}:

1. It is a goal-oriented creation of man – a city is created by all members of a given territory, and one of its aims is to satisfy the needs of the local community and to increase the quality of life the territory;
2. The organisation is composed of people and facilities – including the infrastructure;
3. A city is an organisation distinguished from its surroundings; it has its own organisational structure which conveys goods, services, information and values to its environment;
4. A city has a separate governing body – community members choose executive and legislative authorities of the commune;
5. Ways of cooperation between particular administrative units of the city are fixed by means of formalisation.

Management processes refer both to commercial and non-commercial organisations. According to the definition, management is a set of actions oriented towards organisation’s resources, conducted with intent to fulfil the organisation’s objectives in an efficient and effective manner. According to Fayol, the said set comprises planning and decision-making.

\textsuperscript{14} Commune Local Government Act of 8 March 1990, Journal of Laws No. 16, item 95, as amended.
\textsuperscript{15} Gaczeck W.M., Zarządzanie w gospodarce przestrzennej, Oficyna Wydawnicza Branta, Bydgoszcz-Poznań 2003, p. 15.
\textsuperscript{17} Bielski M., “Podstawy teorii organizacji i zarządzania”, C.H. Beck, Warsaw 2004, p. 35
organising, leading and controlling\textsuperscript{18}. Thus, ensuring a skilful and effective fulfilment of objectives is a measure of the efficiency of management. In fact, skilfulness means using resources in a way that does not make it possible to waste them, while effectiveness consists in conducting successful actions\textsuperscript{19}.

Responsibility for the efficiency of city management lies with local authorities. Markowski draws attention to the bidirectional character of city management: municipal office management (“internal”) and “externally”-oriented management, i.e. management of the city as a whole\textsuperscript{20}. He mentions also differences in the programming of public units and business entities. It has to stressed that municipal authorities, acting in favour of local development, should focus their attention on the agreed social and economic objectives, as well as on the improvement of the residents’ living conditions. Therefore, the fulfilment of aims related to local development should no longer be based only on formal and legal procedures.

In the contemporary world, the manner in which a local government unit cooperates with local socio-economic partners, as well as the way in which and how efficiently it initiates and coordinates socio-economic processes are very important\textsuperscript{21}.

Brol describes the city management system with the use of two elements:

- management instruments and rules;
- management personnel and material, technical and IT resources\textsuperscript{22}. The functioning of the city in the conditions of competition between local government units and the development of public management as one of the areas of management force local authorities to implement ways and methods of management used to date in the private sector to the public sector\textsuperscript{23}.

In the literature, a discussion has been taking place for years with regard to whether it is possible to manage a city like a private company. According to Markowski\textsuperscript{24}, local governments should adapt management techniques proven in the private sector, despite many restrictions related to the applicable law, objectives of the operation or conducted activities.

In the city management system, local authorities have a range of instruments at their disposal, the decisions concerning the selection and use of which depend on conditions existing in a given period in a given city.

\textsuperscript{19} Griffin R., op. cit, p.38.
\textsuperscript{22} Brol R., op. cit. p. 174.
\textsuperscript{23} Wojciechowski E., Zarządzanie w samorządzie terytorialnym, Difin, Warsaw 2003, p. 36.
\textsuperscript{24} Markowski T., op. cit., p. 102.
Information technologies as an instrument increasing the city’s competitiveness

In order to execute its own tasks, a local government unit must be equipped with appropriate tools, i.e. legally defined measures “that may be used by a policy actor to incite other units to adjust their actions to objectives of the policy”\textsuperscript{25}. Although the definition refers to policies conducted by a local government, a policy is defined as the activity of a given organisation’s management aimed at the fulfilment of adopted objectives – it therefore may be assumed that it is inextricably linked to the city management process. Instruments that local authorities have at their disposal may be grouped into appropriate categories – depending on their character, it is possible to distinguish administrative and legal, financial, information, technical instruments etc. As for the range of impact, it is possible to identify general, local an individual instruments. The main aim is to effectively influence the growth and competitiveness of a local government unit.

The competitiveness of the economy is defined as its “ability to adjust to new conditions allowing to maintain or improve the global position”\textsuperscript{26}. In the case of a city, the competitiveness constitutes either a state of continuous advantage achieved by the territorial unit compared to other cities or a process of competing – consisting in the existence or creation of appropriate conditions for business entities functioning within their framework, so that the latter be able to achieve a competitive advantage (indirect competition), or in a direct competition of territorial units to obtain funds, attract investors, organise supra-local cultural events, etc.

More and more often, the most important factors on which the development of urban units is based include social capital, knowledge and advanced technologies that allow to save both time and energy. The development and the necessity to use advanced technologies in city management processes are nowadays becoming inevitable. In the modern global economy, the competitiveness of business entities depends, to a considerable extent, on the level of innovativeness and possessed knowledge. Analogically, the competitiveness of territorial units depends on the innovativeness of their economy, the knowledge they possess, as well as the manner an speed of information sharing. High quality local public administration focused on increasing and fostering innovativeness, as well as facilitating access to information and reducing administrative procedures, is one of the contemporary factors determining the competitiveness of a city\textsuperscript{27}.

\textsuperscript{25} Markowski T., op. cit. p. 25
\textsuperscript{26} Markowski T., op. cit, p. 102.
\textsuperscript{27} Szczech-Piekiewicz E., Konkurencyjność wybranych polskich miast na tle miast z innych państw członkowskich Unii Europejskiej, Zeszyty Naukowe Kolegium Gospodarki Światowej, no. 34/2012, p. 129.
Knowledge and information constitute one of the main factors that condition the functioning of each organisation. Therefore, the use of advanced information technologies in the city management process allows to use the city’s resources in a much more effective manner. An interesting concept related to the use of advanced technologies in city management processes, or generally in public administration, is the Tim O’Reilly’s “Government as a Platform” concept. It assumes that public administration operates as a platform constituting the environment for the functioning of other entities, often private ones or entities from the third sector, which on its basis may provide the society with a range of innovative services, including public services. It means that public administration does not have any precisely defined tasks in the field of e-services. It should, on the other hand, provide raw data that may be processed and used by private sector entities or non-governmental organisations for the purpose of creating their own e-services. Such an approach to advanced technologies in city management processes allows to avoid responsibility for the creation, maintenance and financing of applications that require specific programming skills.

The development of information and communications technologies implies the necessity of reorganisation both in the case of business and of public entities. The need to use ICT technologies in a modern, contemporary city may be observed in practically every area of the territorial unit functioning. Considering that cities compete with each other for new investors, residents and funds, the development of high technologies – which allows for a fast and unlimited transfer of data, availability of databases, creation of effective and easily programmable infrastructure – and expanding network of sensors and controllers are in fact becoming a necessity. The main benefit is an improvement in the quality of services provided to city users and a possibility to save financial outlays, time and energy, as far as the functioning of the city is concerned.

The use of advanced technologies aimed at the improvement in the city management is significant especially in such areas as:

- energy management,
- transport management,
- residential construction,

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28 More information on the “Government as a Platform” concept are provided by Andrzej Sobczak at InteligentneMiasta.pl Miasto jako platforma – fundament Smart City, http://inteligentnemiasta.pl/miasto-jako-platforma-fundament-koncepcji-smart-city/5239/ (access: 15.06.2014)

• safety of residents,
• e-government.

The process of implementing ICT techniques in the local government is, according to the requirements of the times, inevitable. In Poland, however, it takes place too slowly to allow technologies to considerably influence the competitiveness of territorial units. Polish local authorities are not fully prepared to use ICT techniques – it results mainly from the lack or funds for the implementation of new technologies. Initial research conducted within the framework of the “Smart city concept as the determinant of decisions made with regard to the functioning and development of a city” project30 showed that the highest extent of use of advanced technologies is observed in such areas of city functioning as energy economy and public transport. As far as the functioning of public administration is concerned, it is a challenge for Poland to implement the State Computerisation Plan for the years 2011-2015, the main objectives of which include:
• provision of computer services meeting the needs of citizens and business,
• increase in the efficiency and effectiveness of public administration functioning thanks to the use of modern ICT techniques,
• creation of conditions for the development information society.

Conclusion

While defining the problem of the use of advanced technologies in the city management process, it is necessary to highlight that it is characterised with cognitive issues that are new from the perspective of the Polish reality. In the context of support for the decision-making processes related to the city functioning and development owed to advanced technologies, it is necessary to pay attention to basic barriers which result, above all, from:
• lack of coordination in the provisions of many strategic documents concerning the city’s social, economic and environmental dimensions, which leads to conflicts at the stage of execution of tasks provided for in each of those documents;
• low levels of use of ICT technologies in Polish cities;
• lack of reasonable long-term planning, in particular in the case of spatial and economic planning.

30 Project implemented by the Department of City and Regional Management, financed by the National Science Centre. Its aim is to identify the scope of use of the smart city concept for the purpose of city management, compared to the Polish reality.
Moreover, efficient management of the city requires stimulation of innovativeness, use of advanced technologies and cooperation between particular entities, favouring smart and sustainable development. Polish economy seems to be lacking in innovation compared to other European countries, and local authorities are not trying hard enough to improve conditions fostering the creation of new concepts and ideas. What is more, the willingness to use advanced technologies displayed not only by local authorities, but also by the society itself, is also important. The reason for that is the fact that the possession of an appropriate infrastructure is not sufficient for the creation and development of information society. What is equally necessary is the readiness to use it, the possessed knowledge and trust between the public administration and the society. Furthermore, it is indispensable to provide regulations allowing to safely collect, transfer and process electronic data regarding all domains of social life and city functioning.

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Abstract

The information society is another stage of social evolution based on modern information and communication techniques as well as on an extensive telecommunications network. The development of information and communications technologies implies the necessity of reorganisation both in the case of business and of public entities. New socio-economic processes, including the broadly understood computerisation of life, are posing a challenge for local authorities and forcing them to redefine the management system as well as to adapt it to changing development factors. More and more often, public authorities use innovations and modern technologies for the purposes of city development management processes. It results from the fact that an efficient management of the city requires stimulation of innovativeness, use of advanced technologies and cooperation between particular entities, favouring smart and sustainable development.

The aim of this article is an attempt to answer the question of the extent to which Polish cities have adjusted their management instruments to new challenges, which include technical advancement and development of information society. Knowledge and information constitute one of the main factors that condition the functioning of each organisation. Therefore, the use of advanced information technologies in the city management process allows to use the city’s resources in a much more effective manner.

Key words:
information society, smart city, city, development, technologies
Anna Górczyńska, PhD
Department of European Economic Law
Faculty of Law and Administration
University of Lodz

Anna Górczyńska Supporting innovativeness of small and medium enterprises in public procurement

Introduction

The notion of innovativeness is currently widely used and even, in certain situations, overused to justify the necessity to modernise the economy of the European Union. Globalisation processes and the economic crisis have directly influenced the need to elaborate a political and economic strategy for the development of the European Union\(^1\), which will take into consideration not only competitiveness, but also modern and innovative development taking account of the rapid technological progress. At the same time, the Europe 2020 strategy highlights the significance of small and medium enterprises from the perspective of the economic growth, counteracting the effects of the crisis and increase in the innovativeness of EU Member States.

Literature\(^2\) and European Commission\(^3\) provide different definitions of innovativeness and distinguish its four basic types:
1. Product innovativeness, which means a creation or an improvement of a good or a service;
2. Process innovativeness, which means a creation or an improvement of a production or delivery method;
3. Marketing strategy innovativeness, which consists in the creation of new marketing methods,
4. Organisational innovativeness, which consists in the introduction of a new workplace organisation, a new business practice or new relations with external partners.

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\(^{3}\) www.europa.eu/enterprise/innovation.
Considerable significance of the SME sector for the economic growth of all EU Member States justifies the debate concerning the acceptability of the provision of support for this sector through the public procurement system. From the point of view of the analysis of legal provisions, public procurement is regulated both in the EU law and in the national law of all Member States. The scope of application of EU or national law depends on the exceedance of the so-called thresholds specified in EU Regulations.

The aim of public procurement is, above all, to fulfill economic objectives, i.e. to obtain a good or a service of the highest possible quality for the best price. However, on the other hand, it is possible to observe practices, followed by regulations, which allow to take non-economic aspects into consideration in public spending taking place within the framework of the public procurement system. Such aspects include e.g. preferences concerning environmental protection (the so-called green public procurement, support for the social policy (e.g. for people with disabilities), as well as support for small and medium enterprises. These trends are clearly visible in the so-called legislative package of new EU Directives concerning public procurement, adopted in spring 2014.

Support for SMEs in public procurement is justified not only with their considerable role for the EU economy, but also with the capacity to innovate, flexibility, simple organisational structure and ability to respond in a rapid manner to the needs of the market. What is more, the activity of SMEs acting as contractors in public procurement is beneficial

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5 The thresholds above which provisions of the European law apply are, according to the Commission Regulation (EC) No. 1336/2013 of 13 December 2013 amending Directives 2004/17/EC, 2004/18/EC, and 2009/81/EC of the European Parliament and of the Council in respect of the application thresholds for the procedures for the award of contracts (OJ UE L. 335 of 14.12.2013, p. 17) as follows and amount to: for construction works: EUR 5,186,000, for deliveries and services a) in local government units (generally speaking): EUR 134,000, b) in government administration (generally speaking): EUR 207,000 c) in the utilities sector: EUR 414,000. With regard to contracts exceeding the aforementioned thresholds, national law applies – in Poland, it is the Public Procurement Law of 29 January 2004 (Polish Journal of Laws of 2013, item 984, 1047, 1473, and of 2014, items 423, 768, 811, 915, 1146, and 1232).

also for the enterprises themselves, since it leads to an increase in their revenues and stimulates innovative solutions⁷. At the same time, in studies ordered, inter alia, by the European Commission, European industry reports and Polish reports, it is possible to distinguish a range of barriers hindering the access by SMEs to the public procurement market⁸:

- scope of the contract is too large for the capacities and economic potential of enterprise,
- insufficient sources of information about contracts for execution,
- excessive requirements with regard to the financial capacity of the contractor, both at the stage of tender for the contract and of the latter’s execution,
- insufficient time for the preparation of a tender dossier,
- additional requirements concerning the possession of appropriate certificates,
- high cost of obtaining certificates, bid security and required performance guarantee,
- late payments,
- subcontracting instead of contracting,
- discriminatory criteria for qualification of contractors,
- unclear and imprecise tender evaluation criteria.

It also has to be stressed that, in addition to legal solutions fostering the participation of SMEs in public procurement, it would be necessary to popularise good practices aimed to increase the participation of small and medium enterprises in specific regional and national procedures.

Therefore, the objective of the present chapter is to analyse legal instruments of the public procurement system favouring the provision of support for small and medium enterprises, as well as to attempt to answer the question of whether the support for the SME sector may contribute to an increase in the innovativeness.


⁸ Evaluation of SMEs access to public procurement markets in the EU, DG Enterprise and Industry, Final report, Brussels, 2010; European Code of best practices facilitating access by SMEs to public procurement contracts, Brussels 2008, SEC (2008) 2193; previous reports: Evaluation of the SMEs access to public procurement markets in the EU, DG Enterprise and Industry, Brussels 2007; The access of SMEs to public procurement contracts, DG Enterprise and Industry, Brussels 2004; in Poland, the most important report is the one entitled New approach to public procurement: public procurement and small and medium enterprises, innovation and sustainable development, report adopted by the Council of Ministers on 8 April 2008.
Freedoms of the Single Market and public procurement

Basic public procurement principles include those of non-discrimination and equal treatment of all participants. These principles, originating from the Treaty on the Functioning of the European Union\(^9\), are enumerated also in the Preamble and the body of directives regarding public procurement\(^{10}\).

The principle of equal treatment means that all enterprises are to be treated equally and that any form of direct or indirect discrimination is illegal\(^{11}\). The case law of the Court of Justice of the EU refers to many forms of discrimination in public procurement related e.g. to enterprises’ nationality\(^{12}\).

Exemptions from the obligation to apply the fundamental freedoms are enumerated in the Treaty and concern e.g. the protection of public interest, security or public health. Treaty provisions do not provide for any preferential treatment of small and medium enterprises. The fundamental freedoms of the Common Market refer to the EU industrial policy and, thus, also to regulations applicable to enterprises. In the context of public procurement, an important role is therefore played by the determination of the role of the state in the national economy of a given Member State and the distinction between the role of the state as the procurer and as the legislator. As the procurer, the state aims to purchase goods and services under the best possible conditions, while as the legislator the state often strives for the instrumentalisation of public procurement and for the fulfilment of various strategic objectives, e.g. of the environmental protection policy, by means of public spending. That is the reason why the question concerning the extent to which Member States may, in the face of the existing EU regulations, fulfil additional objectives, such as supporting small and medium enterprises within the public procurement system, remains open\(^{13}\).

Another interesting research problem refers to the provision of support to small and medium enterprises in the context of state aid. Generally, state aid is forbidden, since it

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\(^{10}\) Article 2 of Directive 2004/18/EC and Article 10 of Directive 2004/17/EC.
threatens to distort competition in the Internal Market, and acceptable exemptions are precisely specified by separate regulations. That is the reason why e.g. Italian regional preferences, which reserve 30 percent of public contracts for enterprises registered in the southern regions of Italy (the so-called Mezzogiorno), were classified by the Court of Justice as illegal regional preferences and unlawful state aid.\(^\text{14}\)

In the case of public procurement, the concept of a free and unrestricted competition is materialised by the principle of choosing the best offer at the best price. It is the so-called best value for money principle. Therefore, in the public procurement process, contracting authorities are obliged to take into consideration principally economic aspects. Nevertheless, in practice, Member States have repeatedly used the public procurement system to implement their national protectionist policies. Following numerous proceedings before the Court of Justice, national preferences have been abolished as incompatible with EU law.\(^\text{15}\) However, certain non-economic aspects, such as environmental protection or preferential treatment of people with disabilities, have over the last years been directly included in regulations concerning public procurement. The fact that these additional criteria have been taken into consideration constitutes a manifestation of a change in the previous approach towards public procurement, which allowed for the fulfilment of only economic objectives. As a result of a pan-European debate, the admissibility of the application of the preferential treatment related not only to the environmental and social factors, but also to small and medium enterprises were directly introduced both to the Preamble and to the body of new directives of 2014. However, in this context, another question arises with regard to the effectiveness of the new public procurement system which, according to the new approach, may be used e.g. for the purposes of combating unemployment or reducing market fluctuations. As far as the support for small and medium enterprises in public procurement is concerned, it has to be noted that in the present legal situation, there already exist means allowing to achieve this aim, and after the implementation of new directives these methods will be ordered and included directly in applicable regulations.


Soft law regulations with regard to small and medium enterprises

The role and significance of small and medium enterprises for the public procurement system is not regulated in any separate EU act. The European Commission published only a guide concerning the promotion of SMEs, in which the importance of a better access to public procurement was highlighted\textsuperscript{16}. In 2008, the European Commission adopted the so-called Small Business Act for Europe, which constitutes a manifestation of political will to emphasise the key significance of SMEs for the European economy\textsuperscript{17}. The aim of the Small Business Act is to increase the promotion of entrepreneurship and development of small and medium enterprises by means of elimination of barriers that limit their growth. In November 2011, the Commission presented a new approach to SMEs in a document constituting an update or the Small Business Act which summed up the already implemented initiatives and proposed future legal solutions e.g. with regard to electronic invoices or payment of obligations to SMEs within 30 days. Reduction of administrative obstacles for enterprises and support for their joint participation in tender procedures were also proposed.

In 2008, the “European code of best practices facilitating access by SMEs to public procurement contracts” was adopted. The aim of the document is to create support for contracting institutions to develop strategies and programmes facilitating the participation of SMEs in public procurement. An important role has also been played by the Communication from the Commission of 2011 entitled “The Single Market Act: Twelve levers to boost growth and confidence”, which highlights the significance of SMEs for the development of the common market\textsuperscript{18}.

In 2011, a proposal of new European Union directives regarding public procurement was accepted. The directives were finally adopted in February 2014\textsuperscript{19}, and the time for their implementation into national law expires in April 2016. New directives fall within the scope of the Europe 2020 strategy\textsuperscript{20}, which contains clear statements according to which public procurement plays a key role in the EU not only as a form of public spending, but also as an

\textsuperscript{16} Council Resolution on the action programme for SMEs, OJ 1986, C 287/1; European Commission, Draft Resolution of the Council concerning the action programme for SMEs, COM (86) 445 final; European Commission, “Promoting SMEs Participation in Public Procurement in the Community”, COM (90) 166 final, p. 2; Council Decision 2000/819/EC on a multiannual programme for enterprise and entrepreneurship and in particular for small and medium-sized enterprises, OJ 2000, L 333/84

\textsuperscript{17} Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions “Think Small First”: A Small Business Act for Europe, Brussels, 25.06.2008, COM (2008) 394 final.


\textsuperscript{19} The directives enumerated in footnote no. 5.

instrument allowing to support innovative economy and protect the environment. Thus, the
aims of the new legislative package include the limitation of financial and administrative
barriers to the access to the public procurement system, simplification of procurement
procedures and increase in their flexibility, electronisation of contracts, as well as support for
innovativeness provided through an increase in the access to procurement for small and
medium-sized enterprises. Although a critical analysis of new legal acts arises concerns
regarding the chances for a full implementation of the new guidelines, the forms of support
for SMEs which are permitted by law have been referred to in the public procurement system
for the first time.

Analysis of selected regulations favouring small and medium enterprises applying for
public procurement

In the current legal situation, it is not possible to directly introduce a preferential
treatment for SMEs. However, there are various forms of contracting authority’s activity
related to the award of a contract which, in fact, may constitute solutions fostering an
increased participation of SMEs in the public procurement procedure. Introduction of a real
transparency in the proceedings, limitation of financial requirements and provision of a
training system for contracting employees may already now considerably increase the
participation of SMEs in public proceedings.

Division of tenders into lots

Already currently applicable EU directives of 2004 allow to divide tenders into lots\(^{21}\).
It is a solution which, without a doubt, directly favours an increase in the attractiveness of
tenders for SMEs without limiting the competitiveness of procedures. However, purchasers
cannot divide tenders into lots in order to restrict or exclude the use of provisions concerning
public procurement. The Directive of 2014 also emphasises the meaning of division of tenders
into lots, introducing an approach different to the previously adopted one: the purchaser must
justify the situation in which they do not conduct such a division. It means that the new
Classical Directive of 2014\(^{22}\) introduces the principle of dividing tenders into lots, and
derogations from it must be justified in detail. The aim of the said regulation is exactly to
increase the participation of SMEs in public procurement.

\(^{21}\) Article 9(5) of Directive 2004/18/EC and Article 17(6)(a) of directive 2004/17/EC.
\(^{22}\) Directive 2014/24/EU, Preamble (30).
The Public Procurement Law regulates the possibility of dividing tenders into lots in Article 32. However, the value of tender is not calculated for every lot, but for the total of all components. It means that it is not admissible to divide a tender into lots in order to avoid the application of provisions of the Act or of the European Union law in relation to the exceedance of the so-called EU thresholds.

Popularisation of division of tenders into lots has to be generally assessed positively, although the matter should always be regulated in detail in the description of the subject of the contract, so that requirements (especially financial ones) for contractors’ qualification to participate in the procedure and the amount of bid security be proportional to a given lot.

**Subcontracting**

Small and medium enterprises often participate in tendering procedures as subcontractors, even though from the economic point of view it would be more beneficial for them to apply for the award of the contract themselves. Nevertheless, in the case of high-value contracts, SMEs are not able to meet qualification requirements to participate in the procedure for e.g. financial or organisational reasons. In such situations, participation in the execution of a contract as a subcontractor seems to be a good solution – although it provides lower revenues, it makes it possible to perform a public contract.

According to regulations provided for in the new Directive 2014/24/EU, Member States of the European Union may make it possible for subcontractors to claim payment for the performance of a public contract directly from the contracting institution. Such a legal solution, which has recently been regulated within the Polish law, considerably strengthens the position of subcontractors and constitutes a significant incentive for SMEs.

The latest amendment of the Polish Public Procurement Law\(^{23}\) stipulates, in Article 26 (2b), that the contractor may count on the expertise and experience, technical capacity, persons able to execute the contract, as well as financial or economic capacities of other entities regardless of the legal character of the relationship between them. In such a situation, the contractor is obliged to prove the contracting authority that, in the course of performance of the contract, they will have the foregoing resources at their disposal. In particular, the main contractor must submit a written undertaking from the subcontractor that the latter will provide the contractor with their resources (e.g. employees, equipment) for the purposes of

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the contract. Moreover, the subcontractor providing their resources and the contractor are jointly and severally liable for any damage caused to the procurer due to a failure to provide the said resources (unless it is due to no fault). The aim of the presented amendment is to discipline subcontractors to actually perform the contract together with the main contractor, as well as to eliminate pathologies, in the case of which all tenderers taking part in one procedure were to use resources of the same subcontractor, or situations in which a subcontractor declined to cooperate and, thus, delayed the performance of the main contract. With the previous legal framework, it was unfortunately possible to often observe situations in which subcontracting was manipulatively used to obtain a contract and eliminate competitors.

However, the role of subcontracting in increasing the procurement efficiency and participation by SMEs should not be overestimated. Subcontracting does not always need to be related to high-quality performance of a contract, it limits profits of an enterprise engaged that way and does not prevent manipulation nor bid rigging. It cannot be treated as an antidote to problems connected with the execution of public contracts. Particularly visible problems related to subcontracting may be observed in the construction sector in Poland. Involvement of means from European funds has introduced additional restrictive regulations with regard to the organisation and time of construction work execution and it did not prevent the wave of bankruptcies of subcontractors. It was caused, inter alia, by the fact that tenders were assessed only based on the lowest price and by the battle of prices of companies from the industry. Statutory solutions which allowed to claim payment directly from the General Director for National Roads and Motorways in practice caused many problems related to proving the status of subcontractor and to the adoption of a faulty legal act which, in its original version, was in fact contrary to the prohibition of selective state aid²⁴.

Framework agreements

According to EU directives²⁵ contracting authorities may conclude framework agreements with several entities. Therefore, this regulation may also be treated as a form of support for SMEs. Such a situation takes place especially when public procurement is not only covered by a framework agreement, but it is also possible to divide it into lots.

In the Polish law, framework public procurement, regulated in Article 99 of the Public Procurement Law, makes it possible to conclude a framework agreement after having

conducted an open tender, a closed tender or a negotiated procedure with the publication of a contract notice. A framework agreement is concluded for 4 years with one or several contractors. Its principal aim is to determine terms and conditions, and especially purchase prices of goods or services which will be provided during the period specified in the agreement. By these means, contracts covered by the framework agreement are awarded under simplified rules. On the other hand, small and medium enterprises may perceive negative consequences of a framework agreement concluded by e.g. local hospital, since if they are not a party to such an agreement, they are deprived of access to contracts offered by a given contracting entity for a long time.

**Functional description of the object of a contract**

One of the ways to describe the object of a contract is to characterise its functionality\textsuperscript{26}. Directives allow to present not only a detailed technical description of specifications and standards regarding the object of a contract, but also a description concerning its purpose. By choosing a functional description of the contract, the procurer may obtain from tenderers significantly more innovative solutions than those commonly available in the market. Thus, a functional description of the object of a contract may, without a doubt, promote innovative small and medium enterprises, in particular from the IT sector.

Another way to support innovativeness is to allow for alternative solutions. The procurer should specify minimum common requirements regarding alternative solutions and the form of their presentation.

In the light of the Polish law, it is also admissible to provide a functional description of the object of a contract. It is a method which undoubtedly makes it easier to obtain goods or services meeting the expectations of the organiser of the procedure, supports innovativeness and is, at the same time, available to the SME sector, which often provides flexible solutions adjusted to procurer’s expectations.

**Consortia of enterprises**

Both under the European\textsuperscript{27} and under the Polish law\textsuperscript{28}, enterprises may submit joint applications for the award of public procurement contracts. However, they must appoint an agent to represent them in the tendering procedure or to represent them and to conclude an

\textsuperscript{26} Article 53(1) of directive 2004/18/EC and Article 55(1) of Directive 2004/17/EC.
\textsuperscript{27} Article 4(2) of Directive 2004/18/EC.
\textsuperscript{28} Article 23 of the Act of 29 January 2004 Public Procurement Law.
agreement. Consortia are to be regulated in detail by national provisions. They may take various legal forms. However, the procurer may introduce certain specific conditions of participation of consortia in a given tender procedure and e.g. suggest a concrete legal form of activity conducted in order to perform the implementing agreement. Additionally, new Directive 2014/24/EU stipulates that conditions of participation in tender procedure for enterprises operating in a group must be proportional and justified with objective reasons. In the foregoing context, consortia may also be created by SMEs. Such a combination of capacities of several business entities may make it possible for them to apply together for the award of the contract. Nevertheless, it is important to remember that consortium members are jointly and severally liable for obligations of the consortium and, thus, SME should pay particular attention also to the way in which civil law relations between consortium members are regulated in detail.

Electronic public procurement

The aim of electronic public procurement is to promote cheap, fast and transparent methods of procurement. The Digital Agenda for Europe – a strategic document of key importance specifying the support for the development of information and communications technologies – also indicates the significance of further development of contracts awarded electronically. Other strategic documents have long called for an increase in the share of e-procurement in the total number of conducted proceedings. In order to popularise e-procurement, the following solutions are proposed: publication of all contract notices on the procurer’s website (regardless of their value), creation of a national website devoted to public procurement, elaboration of specialist open-access contract search engines.

The new legislative package also fosters numerous solutions aimed to popularise e-procurement, in particular by means of increasing the number of procedures conducted entirely online and by introduction of new instruments, such as e.g. the e-Certis system, which is an electronic repository of certificates and other documents required by procurers from...

29 Directive 2014/24/EU, Preamble and Articles 16 and 71.
30 Article 1(7), (13), Article 33, Article 42(1), (4), (5), Article 54 of Directive 2004/18/EC; Article 1(5), (6), (12), Article 15, Article 48(1), (4), (5), Article 54 and Article 56 of Directive 2004/17/EC.
31 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Digital Agenda for Europe, COM (2010) 245.
contractors\textsuperscript{34}. Another solution would be to create one common EU electronic public procurement platform\textsuperscript{35}.

As far as Polish law is concerned, provisions with regard to public procurement which regulate the rules of electronic bidding, electronic auction and dynamic purchasing system seem to be sufficient, but they are not widespread. They are not popular in Poland and there is no incentive scheme aimed at their further promotion\textsuperscript{36}. Experiences of procurers organising electronic tendering procedures indicate considerable savings (e.g. in the case of purchase of office supplies they amount to 15-20\%), decreased risk of errors and increased transparency of tenders. Therefore, widespread of e-procurement may popularise tenders among SMEs.

**Most economically advantageous tender as the basic criterion of tender evaluation**

Criteria of tender evaluation that do not refer only to the lowest price also encourage enterprises to participate in the procedure. In Poland, it was for a long time even possible to observe the pathology of the lowest price, since in the case of most tenders it was the principal evaluation criterion. However, EU directives and Polish law have always given procurers the right of choice: tender evaluation criterion could be the lowest price or the most economically advantageous tender understood as the price together with additional evaluation criteria selected by the procurer.

According to the most economically advantageous tender criterion, while evaluating tenders the procurer may take into consideration not only the price, but also e.g. environmental and social aspects, after-sales service, technical parameters, functionality, execution time, operating costs, as well as innovativeness. Innovativeness appeared for the first time among the evaluation criteria provided for in the Polish law in the last amendment of 2014. Nevertheless, it emphasises the significance of innovativeness in public procurement. What is more, the amendment highlights that the applied price criteria is to be the only one if the object of the contract is publicly available and has defined quality standards. Additionally, the procurer must present, in the annex to the procedure report, the way in which costs

\textsuperscript{34} Directive 2014/24/EU, Preamble (33).
incurred in the entire period of use of the object of the contract were taken into account in the description of the said object\textsuperscript{37}.

The new Directives of 2014 formulate also a totally new principle which obliges the procurer to take the calculation of product life cycle, service and construction work costs into consideration in the course of tender evaluation. The product life cycle refers to all stages of the product life which should be calculated based on a common methodology. However, currently there is no common European methodology for the calculation of the product's life cycle costs. Such a state of affairs causes many uncertainties with regard to the use of such methodologies and mutual recognition of the methodology used by the tenderer and the procurer. Legal uncertainty may raise a number of questions regarding the form and scope of applied solutions and, as a result, extremely restrict the access by SMEs to public procurement markets.

Conclusion

An increase in the participation of SMEs in tendering procedures will, without a doubt, result in an increase in their participation in the execution of implementation agreements. It will not only stimulate the growth of enterprises and mitigate consequences of the economic crisis, but also cause an increase in the innovativeness of both those enterprises and goods, deliveries and services offered by the public administration. In other words, support for small and medium enterprises in public procurement may contribute to an increase in the economic innovativeness of the EU.

Legal solutions mentioned in this paper are not contrary to the current principles of competitiveness and transparency of tenders. They do not constitute illegal state aid neither. New trends consisting in including non-economic aspects, e.g. environmental or social ones, to the public procurement system allow also to promote innovativeness and support small and medium enterprises.

The aim of supporting innovativeness is also fulfilled by the so-called pre-commercial procurement, i.e. the purchase of research and development services by the public sector. Pre-commercial procurement is chosen when it is not possible to meet a given need of the procurer with the use of products available in the market. The basic objective of pre-commercial procurement is to divide the risk between the procurer and the contractor, the latter incurring a part of research costs in return for the right to the results of the research. In

\textsuperscript{37} Article 91 (2a) in the wording of the Act of 29 February 2014 amending the Act – Public Procurement Law (Journal of Laws of 2014, item 1232)
the case of every stage of pre-commercial procurement, several enterprises are invited at the same time and work, independently of each other, on finding a solution to the procurer’s problem. Afterwards, contract is awarded with regard to the solution which meets the expectations of a public entity to the largest extent.\footnote{S.Sawin, W. Bereszko, Innowacyjne i przedkomercyjne zamówienia publiczne, Warsaw 2012, p. 10 et seq.}

Support for the innovativeness of SMEs in public procurement may also meet with criticism, since it is deemed that innovativeness can be offered mainly by international corporations operating in high-technology industries. However, it has to be emphasised that mainly SMEs are the most active in the biotechnology sector, IT, electronics, environmental protection, consulting services, legal services, and the so-called creative industries, which combine business with art and culture.

While summarising the foregoing considerations, it is also necessary to take into account various aspects of law violations in the public procurement system. The most common form of violations include, in addition to corruption and acceptance of material benefits, also bid rigging. These are illegal agreements between the procurer and contractors or between the contractors only, the aim of which is to manipulate the result of the public procurement. Despite a generally positive role of subcontracting, which makes it possible for various business entities to participate in the execution of public contracts, it has to be mentioned that subcontracting may be used for the purposes of bid rigging and that it contributes to a decrease in the quality of the object of a contract which is lower than the one declared by the main contractor. That is the reason why Member States are trying to eliminate the aforementioned risks e.g. by introducing prohibition on subcontracting in the case of innovative procurement requiring a high level of contractor’s skills and expertise, by obliging contractors to execute contracts themselves in relation to the protection of intellectual property and by requiring the submission of lists of subcontractors being jointly and severally liable for the performance of a contract.

To sum up, despite the adoption of the so-called new legislative package in 2014, the public procurement system still is not and will not be very effective. The system is complicated, elaborate and, despite a generally positive role of the case law of the Court of Justice, it does not exercise the function of a transparent and effective public interest protection system. That is the reason why it requires further changes that would take the account of the realities of economic life and technological progress in the field of deliveries and services commissioned by the public administration. Instead of restrictive and bureaucratic procedural arrangements , the public procurement system should focus on a
functional description of the object of contracts and on the selection of the most economically advantageous tenders, taking into consideration the pan-European methodology for calculating product life cycle costs.

Abstract:

The aim of the present chapter is to analyse legal instruments of the public procurement system favouring the provision of support for small and medium enterprises. The author wonders also whether the support for the SME sector may contribute to an increase in the innovativeness. The chapter presents forms of support for small and medium enterprises admissible in the context of the Common Market. Factors which may be particularly favour an increase in the involvement of SMEs in public procurement include the division of tenders into lots, subcontracting, framework agreements, functional description of the object of a contract, consortia of enterprises, electronic public procurement and evaluation of tenders with the use of the most economically advantageous tender criterion. As a result, support provided to the SME sector may contribute to an increase in the innovativeness of both enterprises and goods and services commissioned by public entities.

Key words:
SME, public procurement, Common Market, division of tenders into lots, subcontracting, tender evaluation criteria
Karolina Sztobryn, PhD  
Faculty of Law and Administration, University of Lodz  
Department of European Economic Law

Karolina Sztobryn Protection of computer programs by copyright under EU law

Introduction

In order to provide an incentive for innovative work on IT products, such as computer programmes, intellectual property law protects intangible goods constituting a product of the human intellect. Such a protection is necessary, since computer programs favour the development of technology and of the economy. Thanks to them, it is easier to perform in a rapid and effective way everyday tasks in the field of entertainment, science or IT, as well as activities consisting in the use of electronic devices, such as television and mobile phone. The use of computer programs in every domain of life causes the need to appropriately protect them against unauthorised use. That is the reason why the EU legislator, following guidelines comprised in the American legal system, stipulated in Article 1 (1) of Directive 2009/24/EC on the legal protection of computer programs (hereinafter referred to as the directive) that computer programs are protected like literary works under the Berne Convention. Nevertheless, it has to be highlighted that the programs are not protected as literary works, but only like them, which means they constitute a separate category of works. On the one hand, they should be protected by provisions referring to all types of works and, on the other, by separate regulations concerning only computer programs. Due to such a construction of the protection, the so-called copyright protection of computer programmes only refers to copyright principles, and it may actually be considered as a protection of a special or even separate – *sui generis* – character.

The fact that computer program protection rules are related to general copyright principles manifests, above all, in the manner in which the protection is obtained, since the protection of computer programs is of automatic character and is provided after conditions

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1 The publication constitutes a result of research conducted within the framework of the project founded by the National Science Centre under decision no. DEC-2011/01/N/HS5/02052.
qualifying a program for protection are met; in the lack of protection for the concept and principles of a computer programme; as well as in the period of applicability of property rights, which cover the lifetime of the creator and 70 years after the creator’s death. Due to features distinguishing computer programs from traditional works, resulting mainly from the fact that they are elaborated to be used and not for aesthetic purposes, a separate regulation had to be created in order to respond to the needs and specificity of computer programs.

**Material scope of the protection**

Pursuant to Article 1 (2) of the directive, protection applies to the expression in any form of a computer program. However, the directive does not define the term “computer program”. It only stipulates what is protected under its provisions, indicating in point 7 of the directive’s Preamble that for the purpose of this directive, the term “computer program” shall include programs in any form, including those which are incorporated into hardware; this term also includes preparatory design work leading to the development of a computer program provided that the nature of the preparatory work is such that a computer program can result from it at a later stage.

The lack of definition of this term results from the spectacular progress and development of the software domain, due to which it is not possible to create a definition “for the future”. Definitions of the computer program have therefore been elaborated by the doctrine. It is indicated that a computer program is a set of instructions (orders, commands) presented in a language which is understandable for a technical device (computer), the execution of which directly or indirectly by the computer is supposed to make it possible to achieve goals defined by the creator of the program. The term is also defined an effect of intellectual activity if a creator in the form of a language structure composed of a “finite sequence of specific instructions (functional procedures) leading to the execution of a given task in a finite number of steps and tasks expressed with the use of a programming language (artificial language) that provides information with regard to the type and structure of data (data declarations) and specifying the area in the computer’s memory reserved for variables and forms of data which are to be stored in that area”. Or shorter, as a set of instructions

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intended to be used directly or indirectly in a computer to achieve a specific result\(^8\). A program is also defined as a machine in the form of text, which is expected to lead to a particular outcome\(^9\).

Every computer program is based on an algorithm, and more particularly a number of different algorithms\(^10\) which serve as a database for the program that is later transformed into a source code in an alphanumeric form consisting of characters, numbers, symbols, and other human-readable characters. After a compilation the source code transforms into a machine code expressed in a binary form as electrical signals processed in the computer processor\(^11\). The protection under the directive covers only source and machine codes, since they constitute the expression of a computer program. An algorithm, on the other hand, is treated as an idea and a concept which underlie a computer program, and pursuant to the second sentence of Article 1 of the directive, ideas and principles which underlie any element of a computer program, including those which underlie its interfaces, are not protected by copyright under this directive Therefore, the protection does not apply to such elements of the program being important from the perspective if its value in use as interfaces\(^12\), sets of functions of a computer program, programming languages and data file formats used within a computer program for the purpose of the use of its functions\(^13\). However, all these elements may constitute a work and benefit from the copyright protection provided under Directive 2001/29/EC\(^14\), provided that they constitute an expression of their author’s own intellectual creation\(^15\).

Thus, pursuant to the directive, protection refers only to those elements of a computer program which make it possible to copy the program in different computer languages\(^16\) and

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\(^16\) Judgment of the Court of Justice of in case C-393/09, *Bezpečnostní softwarová asociace*, point 35.
covers design material of a given computer program, i.e. design materials in the form of a sequence of instructions\textsuperscript{17}, scheme of activities, graphic manner of presenting the program or other description of the program comprised in documents concerning the initial stage of work on the program, on the basis of which the program is created in the final stage\textsuperscript{18}. Documentation regarding the program is protected if it constitutes an expression of the program\textsuperscript{19} and is detailed enough to include all stages of work on the program\textsuperscript{20}, so that it makes it possible to transform it into the computer program even for a person who did not prepare the program\textsuperscript{21}.

**Premises conditioning the protection**

Protection of a computer program begins to exist at the moment of its expression, i.e. when the program is manifested, regardless of its form\textsuperscript{22}, e.g. by means of graphic, mathematical or even human-unreadable characters\textsuperscript{23}. Expression of a program cannot be understood as its saving, which constitutes a qualified form of the expression\textsuperscript{24} that makes it possible to reproduce a work and a clear identification of the work’s author\textsuperscript{25}.

Moreover, in order for a program to benefit from the protection, it must be original, i.e. constitute its author’s own intellectual creation\textsuperscript{26}. Recital 8 of the directive determines a certain scope of understanding of the originality of a computer program, indicating that in determining whether or not a computer program is an original work, no tests as to the qualitative or aesthetic merits of the program should be applied\textsuperscript{27}. It is also inadmissible to formulate detailed criteria defining the creation, such as the value in use and economic


\textsuperscript{19} A. Szewc, G. Jyż, *Ochrona programów komputerowych, informacji i baz danych*, Bytom 2001, p. 33.

\textsuperscript{20} R. Golat, *Prawo autorskie i prawa pokrewnne...,* p. 70.


\textsuperscript{25} Cf. Article 1(3) of Directive 2009/24/EC.

\textsuperscript{26} Preamble of Directive 2009/24/EC, point 8.
value\textsuperscript{28}, size and intended use of a program as well as the manner of expressing it\textsuperscript{29}. Thus, operating programs considered less original than software applications\textsuperscript{30}, expressed in both source and machine version, both finished and unfinished\textsuperscript{31}, or even those which do not fulfil their function, are covered by protection\textsuperscript{32}.

The requirement that a program must be original reflects the fact that general copyright law provisions are not adjusted to the specific character of computer programs, which should be both useful and functional, and the criterion concerning the author of intellectual creation is not important in the context of software.

**Restricted acts and exceptions to them**

Acts which are restricted exclusively for the rightholder, i.e. such which, when performed by a different person, would lead to a violation of the computer program copyright, are specified in Article 4(1) of the directive.

First of all, these acts comprise the permanent or temporary reproduction of a computer program by any means and in any form, in part or in whole (Article 4(1)(a) of the directive). The right refers to all possible forms and types of program reproduction, including: creation of an additional copy of the program or its part, saved on any carrier or introduced to the non-volatile and volatile memory of a computer; change in the expression of the program\textsuperscript{33}, i.e. a transformation of its source code in a machine code or conversely, decompilation of a program from the machine code into the source one\textsuperscript{34}; or even copying of the sheet of paper on which the program is written. Attribution of an exclusive right to make any reproduction of the program to the rightholder is questionable to the extent to which a computer program,


\textsuperscript{34} H.-J. Ahn, *Der Urheberrechtliche Schutz*..., p. 84.
contrarily to other works, cannot actually be used without being copied. That is the reason why, in order to make it possible to use computer programs, the EU legislator decided that the provisions of Article 4(1)(a) of the directive is not absolute and should always be analysed in conjunction with Article 5(1) and (2) of the directive. As for Article 5(2) of the directive stipulates, that in the absence of specific contractual provisions, the acts referred to in points (a) and (b) of Article 4(1) shall not require authorisation by the rightholder where they are necessary for the use of the computer program by the lawful acquirer in accordance with its intended purpose, including for error correction. As for Article 5(2) of the directive, it stipulates that making of a back-up copy by a person having a right to use the computer program may not be prevented by contract in so far as it is necessary for that use. The directive does not clarify the way in which the expression “an act necessary for the use of the computer program”. Therefore, while assessing this condition, it is necessary to analyse facts, taking objective criteria into consideration. Such authorised copying may be considered as the “ordinary” use of the program in a computer, as well as its testing, error correction, changing the parameters of the program caused by the need to adjust programs to the existing standards or requirements, adjusting the program to the requirements of newer versions of hardware or integrating it with other programs. Thus, if copying of a program and creating its backup copy results from its normal use, and if it is impossible to use the program without making such a copy, such an act should be deemed necessary for the purpose of using the program. Additionally, Article 5(1) of the directive requires the use of the program to be in accordance with its intended purpose, leaving that expression also imprecise. The intended purpose of a program should also be determined in an objective way, considering the interests of both parties, i.e. of the rightholder and of the purchaser of the program. The purpose of a program may be specified in the agreement, defined by the expectations of the purchaser or by the function of the program assumed by its producer.

Second of all, exclusive rights of the rightholder include the translation, adaptation, arrangement and any other alteration of a computer program and the reproduction of the results thereof, without prejudice to the rights of the person who alters the program (Article 4(1)(b) of the directive). The right to translation of a program includes the authorisation to

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37 J. Barta, R. Markiewicz, Prawo autorskie i prawa pokrewne Komentarz..., p. 574.
39 A. Nowicka, Prawnoautorska i patentowa ochrona..., p. 80.
transform the computer program from one language version to another or to transform the object code into the source one or the other way round, as well as to change protected preparatory materials into a programming language. In turn, the right to adaptation refers to acts aimed at the adjustment of the program to another operating program or another device, or at the elaboration of a program involving the acquisition of protected elements of the original work and adding new ones in order to create a modified version of the program.

As for arrangement, it consists in equipping an old program with new possibilities or in creating new versions of the old program. Article 4(1)(b) of the directive attributes also an exclusive right to any alteration of a computer program, consisting in e.g. error correction; according to the doctrine, these acts are allowed, provided that they are conducted for personal purpose only and do not imply reproduction of the program. Like in the case of the determination of rights to a computer program pursuant to Article 4(1)(a) of the directive, while basing on Article 4(1)(b) of the directive it is also necessary to analyse the rightholder’s rights together with exceptions specified in Article 5(1) of the directive.

At the end of Article 4(1)(c) of the directive, it is indicated that acts restricted exclusively for the rightholder include also any form of distribution to the public, including the rental, of the original computer program or of copies thereof. This authorisation refers first of all to the right to conduct and control the marketing of a work expressed both in the source code, even though such distribution rarely takes place, since it makes it easy to copy the program, and in the machine code. Like in the case of previously discussed restricted acts, the right to distribute the original computer program or its copies is also not absolute, as it becomes exhausted when the first copy of the program is sold in the territory of the EU by the rightholder or at their consent. Thus, the rightholder loses the control over any further distribution of the copy of the computer program placed on the market by the rightholder or at their consent, expressed even implicitly, and cannot invoke their property rights. The result in the form of exhaustion of the right occurs also when the program is distributed, at the rightholder’s consent, via the Internet, even if the agreement on the basis of which the user of

42 Acquisition of unprotected elements, such as ideas and principles, from the original work does not constitute an elaboration of a computer program.
43 D. Bainbridge, Legal Protection..., p. 37, 83; M. Byrka, Prawne aspekty modyfikowania programa komputerowego, Kwartalnik Prawa Prywatnego 1996 no. 4, p. 706.
44 For more on the subject, cf. M. Byrka, Prawne aspekty modyfikowania..., p. 707.
45 J. Barta, R. Markiewicz, Główne problemy prawa komputerowego, Warsaw 1993, pp. 48-49.
the program may use it was called “License Agreement”, but the purchaser obtains – in return for payment of a price corresponding to the economic value of a copy of the work – a perpetual right to use the copy. Therefore, Article 4(2) of the directive does not introduce any distinction between the exhaustion of a right with regard to a copies of the program in the tangible and intangible form\textsuperscript{47}. The person having purchased the program from the rightholder may, thus, sell such a program. However, in order to avoid a violation of the exclusive right to reproduction under Article 4(1)(a) of the directive, at the moment of resale they should deactivate their own copy. Moreover, they cannot divide the related licence in order to resell the right to use the computer program for a number of persons exceeding their needs\textsuperscript{48}. Nevertheless, the exhaustion of the right does not deprive the rightholder from the right to control further rental of the program or its copies\textsuperscript{49}, since it is a form of program distribution which makes it impossible for the rightholder to appropriately control the use of the work\textsuperscript{50}. Thus, if an entity purchased a copy of a computer program and wants to rent it, the entity must obtain an appropriate licence from the computer program rightholder.

The content of computer program copyrights is formed not only by provisions regarding the rights, but also by exceptions from the exclusive rights of the rightholder. In addition to the aforementioned Articles 4(2), 5(1) and (2) of the directive, the second category includes also the right to analyse the program, which was attributed to the person having the right to use a copy of a computer program under Article 5(3) of the directive. Such an entity is entitled, without the authorisation of the rightholder, to observe, study or test the functioning of the program in order to determine the ideas and principles which underlie any element of the program if they do so while performing any of the acts of loading, displaying, running, transmitting or storing the program which he is entitled to do\textsuperscript{51}. The right to analyse the program, referred to also as the so-called reverse analysis\textsuperscript{52}, allows to conduct activities aimed at learning about the functioning of a program which, however, do not lead to its decompilation. This right is supposed to guarantee access to concepts and principles of a program which are protected under the directive. As a consequence, if due to such an analysis a competitive program fulfilling the same objectives and functions as the original program is created, the analysed program rightholder will not be allowed to invoke their...
rights, even if the agreement between the rightholder and the user of the program excludes the possibility of analysing the program to produce a new program. The reason for that is the fact that, pursuant to Article 8(2) of the directive, any contractual provisions contrary to the exceptions provided for in Article 5(3) of the directive shall be null and void.

Another exception from exclusive rights of the rightholder results from the provisions of Article 6 of the directive regulating the possibility of decompiling the program (reverse engineering or reverse assembly\(^{53}\)), i.e. of conducting a process that consists in the transformation of the program’s machine code into a source code, which allows to reach the structure and algorithm of the program\(^{54}\).

Article 6 of the directive specifies who, in what circumstances and for what purpose may decompile a program, as well as the ways in which information obtained in the process cannot be used. Generally, decompilation is admissible if the person decompiling the program have obtained the consent of the righholder or without such a consent, but only by way of exception. Decompilation may be conducted only by a licensee, a person authorised to use the copy of a program and a person authorised by the forgoing persons if necessary information, i.e. such without which it is not possible to create an interoperable program, is not easily available to them, and the activities are not limited to those parts of the original program that are indispensable to the achievement of interoperability.

It is not possible to prohibit entities authorised to decompile a program from decompiling the program under any agreement – an agreement authorising the use of the program or a contract of employment – pursuant to Article 8(2) of the directive. The said entities, as legal users of the program, should be able to benefit from all “readily available” information concerning the program that make it possible to create a compatible program. Otherwise, they may decompile the program. Since the term “readily available information” is not specified in detail in the directive, the doctrine considers that this criterion should not be interpreted in a too restrictive manner, but it should rather be based on the assumption that information is readily available when it is made widely public e.g. in the form of documentation attached to the program\(^{55}\). A contrario, information is not readily available if it

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is not comprised in publicly available materials, considering the time and place in which the information is available and its type. Similarly, it is deemed that information is not readily available if it is not possible to obtain by means of activities specified in Article 5(3) of the directive, or if the rightholder requests excessive charges for the information.

Decompilation of a program is allowed only for the purpose of achieving interoperability. Thus, any other reason for conducting this process is forbidden. However, as it is possible to assume on the basis of a linguistic interpretation of the provision, the fact that its content stipulates that decompilation is allowed in order to obtain the information necessary to achieve interoperability “with other programs”, and not with the “decompiled program”, indicates that it is also admissible to conduct decompilation in order to elaborate a competitive program. Nevertheless, the legislator left no discretion to use the information obtained within the decompilation process, since acts which cannot be conducted by the decompiling entity with regard to the information have been specified. It is forbidden to use the information for goals other than to achieve the interoperability of the independently created computer program; to convey it to others, except when necessary for the interoperability of the independently created computer program; or to use it in order to develop, produce or for the development, production or marketing of a computer program substantially similar in its expression, or for any other act which infringes copyright. The permission for decompilation only to create a compatible program excludes the possibility of decompiling for scientific purposes, to prove an infringement of the right to the software, to correct errors, for one’s own purposes within the allowed personal use and to update and maintain the possessed software. Furthermore, there is no discretion as to the recognition of legitimacy of decompilation, which in the common law system is referred to as the fair use.

The decompilation cannot lead to the creation of a program based on the same code, as it would violate the rightholder’s rights, or of a program the expression of which would be

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58 A. Nowicka, Ochrona programów komputerowych..., p. 82; D. Bieńczak, Zezwolenie na dekompilację..., p. 38; cf. in contrast J.-F. Verstrynge, Protecting Intellectual Property Rights..., p. 9.
59 Article 6(2) of Directive 2009/24/EC.
60 Cf. J. Barta, R. Markiewicz, Główne problemy prawa komputerowego..., p. 50.
similar to the one of the decompiled program. Although it is not possible to clearly state on the basis of the wording of the provision whether a significant resemblance cannot refer to the part of the program in which information obtained thanks to the decompilation was used or generally to the entire program, functional resemblance of the program created with the use of the information to the decompiled program will definitely not constitute a violation. In turn, creation of a competitive program based on the information obtained within the process of decompilation of the original program, even if the program is written in a different programming language, will infringe Article 6 of the directive.

Subjective scope of the protection

In the context of copyright protection of computer programs, it is necessary to distinguish the creator of a program, i.e. the entity having actually created the program, from the author and the beneficiary of the protection. According to Article 2 of the directive, the author of a computer program may be a natural person or a group of natural persons who has created the program or, where the legislation of the Member State permits, a legal person designated as the rightholder by that legislation. As far as beneficiaries of protection are concerned, under Article 3 of the directive these may be natural or legal persons eligible under national copyright legislation as applied to literary works. Thus, the computer program rightholder is not always its creator.

Although in common language the term “author” is synonymous with the term “creator”, under the directive the author of a program may be also an entity which did not create the work. Such an author of a program benefits only from proprietary copyrights, and not from moral rights which are attributed only to the entity having created the program. Thus, not only a legal person may be deemed the author of a program, but also – as follows from the wording of Article 2(3) of the directive – an employer in relation to a program created by an employee within the framework of performance of their duties or the employer’s orders, unless otherwise stipulated in the agreement. Indication of an employer as the entity entitled to the property rights related to a program is justified by economic

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68 Directive 2009/24/EC, Article 2(3).
reasons, since it is usually the employer who incurs the program development costs, while the elaboration of the program is only the employee’s duty. Therefore, the employer cannot demand additional remuneration for the preparation of such program. It is possible to determine whether a program is an employee’s one by analysing the content of the contract of employment and by defining activities falling within the scope of the employee’s duties. In the case of such qualification, the use of the employer’s materials and devices is not significant. The criteria of time and place of the program’s elaboration are also immaterial, since an employee may perform their duties also beyond the agreed working hours.69

The author of a computer program may also be a group of persons who, working together on the creation of the program, made a creative contribution to it which determined its original character.70 Thus, persons who only helped to elaborate a program, if their participation consisted in providing expertise, or the so-called program testers, the task of whom consists in detecting errors in the program before it is placed in the market, are not co-creators of the program.71

**Temporal scope of the protection**

Pursuant to the EU law, the time of protection of all proprietary copyrights covers the lifetime of the author and 70 years from the day of the author’s death. The principle has been expressed in Directive 2006/116/EC, constituting a consolidated version of Directive 93/98/EEC and applying to all types of works, is definitely criticised with regard to computer programs. The pace of technological changes in the field of software shows that such a long period of protection is unjustified, in particular considering the fact that the actual time of a computer program’s value is up to 5 years.72 Thus, it is possible to notice that, as far as the duration of protection is concerned, general principles of copyright protection are unadjusted to goods of value in use.

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Conclusions

The model of computer program protection adopted within the framework of copyright law currently constitutes the basic form of protection of these intangible goods. However, it is worth to notice that computer programs may, in certain circumstances, be covered by protection under patent law, although only as a result of the patent procedure before the European Patent Office, which is proven by numerous decisions of that body granting a patent for inventions in the field of software. In turn, Polish Patent Office consistently refuses to grant rights to such inventions. Moreover, information contained in a computer program may constitute a trade secret protected by the unfair competition law. Nevertheless, only copyright protection comes into being automatically at the moment of creation of a program and protects *erga omnes* codes of the program against their exact copying.

The evaluation of the appropriateness of computer program protection under the copyright law is not univocal. Adherents\textsuperscript{75} of the copyright system indicate, above all, that such protection is easy to obtain and impossible to lose\textsuperscript{76}, it prevents copying of the program and ensures the widest territorial scope of protection\textsuperscript{77}. Other advantages include an appropriate scope of rights which allow for the development of knowledge and stimulation of the economic growth\textsuperscript{78}, and ensure a long period of protection\textsuperscript{79}. Opponents of the system consider that its disadvantages include a limited and uncertain\textsuperscript{80} scope of protection which comes down only to the prohibition of copying of the program’s source and machine code and, thus, does not cover the idea and functionality of the program\textsuperscript{81}. The protection refers to individual expressions of the program, while important elements of the program which


\textsuperscript{77} J.J. Borking, *Third party protection…*, pp. 448-449.


\textsuperscript{80} Cf. D. Bender, *Protection of Computer Programs…*, § 4A-37.

determine its usefulness and functionality are not protected\textsuperscript{82}. Shortcomings of the copyright system include also the lack of protection against independently created programs\textsuperscript{83}, as well as the lack of balance between the interests of producers and of users, which manifests in: lack of regulations concerning allowed uses\textsuperscript{84}, prohibition of spread of information and development\textsuperscript{85}, inhibition of progress in the creation of new types of software through the lack of requirement for the protected program to meet the condition of non-obviousness\textsuperscript{86} and the too long duration of protection, which is not appropriate from the perspective of the nature of computer programs\textsuperscript{87}.

Despite several initiatives aimed to introduce new forms of computer program protection, providing even for a totally different form of \textit{sui generis} protection, so far a consensus has not been reached with regard to that in what such a change in protection could consist and to the form it could take. That is the reason why, at present, creators of software, rightholders and users of programs must undertake actions within the framework of the copyright system.

\textbf{Abstract}

The aim of the chapter is to analyse the provisions of Directive 2009/24/EC regulating the protection of computer programs in the EU. The interpretation of these provisions is important form the point of view of the Polish law, as the Polish Copyright and Related Rights Act\textsuperscript{88} reproduces, to a considerable extent, provisions of Directive 2009/24/EC. The chapter presents the objective scope of computer program protection within the copyright model, premises conditioning the protection, acts restricted for the rightholder and exceptions to them, as well as the subjective and temporal scope of protection.

\textbf{Key words:}
computer programs, protection of computer programs, work, Directive 2009/24/EC.

\textsuperscript{84} D.G. Luettgen, \textit{Functional usefulness…}, p. 273.
\textsuperscript{86} D.G. Luettgen, \textit{Functional usefulness…}, p. 273.
Magdalena Wiśniewska, PhD
Faculty of Management, University of Lodz
Department of City and Regional Management

Magdalena Wiśniewska Logistic aspects of commercialisation of knowledge and transfer of technology from universities to business – example of technological scouting

Introduction
The aim of this article is to explain a relatively new approach to issues of knowledge management in organisation, i.e. knowledge logistics. The discussed matters will be illustrated with the use of selected available literature a case study – technological scouting process at a university. Higher education institutions are special organisations in the context of knowledge management, since their operation consists in creating, absorbing and transferring knowledge to the outside. The article deals with issues related to processes which take place at universities and lead to the provision of appropriate knowledge to economic sectors. Taking a look at the transfer of knowledge from the perspective of logistics makes it possible to indicate such elements of the process the improvement of which would allow to optimise it.

Knowledge management and knowledge logistics
Currently, the most important determinant of the competitiveness of an organisation is the knowledge it possesses. Knowledge is not a static, unchanging resource of the organisation. As it is used, it grows. Due to various conditions, knowledge management is a key factor. Changes in the environment of an organisation imply the necessity to expand and appropriately orient the development of knowledge resources in the organisation. On the outside of the organisation, development, learning and knowledge diffusion processes also take place. Knowledge becomes more and more detailed, specialist, globally available. It is turning not only into a dynamic factor influencing the organisation’s environment, but also its dynamic resource.

In order to appropriately understand knowledge management, it is necessary to explain the notion of knowledge itself.
The term knowledge is equivalent to other commonly used terms, such as data or information. Data are facts or figures\(^1\). They are taken out of context, have no meaning, no reference. In turn, information covers organised, summarised data which gain sense; data in context.

“Knowledge is a liquid mixture of experience, values, information in a specific context, expert view, which constitutes the framework for the assessment and assimilation of new experiences and information. It is created and used in the mind of its holder. In an organisation, it is often embedded in documents, repositories, organisational routines, processes, practices and norms”\(^2\).

The notion of knowledge itself is also variously understood by different scientists. Some of them perceive knowledge as a state of mind, defining it as understanding and experience gained while studying something; a sum or scope of what is perceived, discovered or learnt\(^3\), or just assume that knowledge is understanding\(^4\). Others define knowledge as an object or even a codified, elaborated thing. They assume than knowledge is a process of regular cognition and use of the cognition\(^5\).

Literature provides also an idea of knowledge as a state of having access to information, as a condition for accessing them\(^6\). Furthermore, it is possible consider knowledge to be an ability, a capacity to influence action\(^7\).

Adoption of a given perspective on the notion of knowledge implies a perspective on the understanding of knowledge management and its aims\(^8\). If knowledge is perceived as a state of mind, knowledge management should focus on the creation of situations in which we are dealing with potentially useful information and facilitation of knowledge acquisition. If knowledge is treated as an object, knowledge management should concentrate on the development of knowledge resources and management of these resources. Assuming that knowledge is a process, knowledge management should be focused on knowledge transfers and processes of knowledge creation, sharing and dissemination. In the case of knowledge understood as a capacity, knowledge management should aim at creating key competences, understanding the strategic advantage in the form of know-how, and developing intellectual capital.

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\(^6\) R. McQueen, *op. cit.*


\(^8\) *ibid.*
Knowledge management may also be perceived as the process of identification, obtainment and multiplication of collective knowledge within the framework of an organisation, the objective of which is to increase the organisation’s competitiveness\(^9\). The aim of knowledge management is very practical: to improve organisational capacities through better use of individual and collective knowledge resources in an organisation. The resources cover skills, capacities, experience, routine, norms and technologies\(^{10}\).

One of recently emerging knowledge management disciplines is knowledge logistics. In order to be able to understand this logistic perspective, it is necessary to explain the notion of logistics.

“Logistics is the science of movement and the flow of people, goods and information, looking for the cheapest way to achieve a certain level of availability of goods or services to the customer”\(^{11}\).

Five key components have been identified as influencing the efficiency of such movements and flows: facilities, unitisation, communications, equipment and means of transport.

Due to the fact that an organisation is an open system, its resources are obtained from the environment and distributed to that environment. Knowledge constitutes one of the organisation’s resources and similar processes take place also in relation to it. However, knowledge is a resource which particularly gained in significance in recent years. That is the reason why it is important to pay particular attention to flows, diffusion or transfer of knowledge. It is important to make these processes as optimal as possible from the point of view of the organisation’s objectives. Knowledge logistics means supporting the distribution and storing of knowledge, considering its flow and downtime, which is why it also supports knowledge management processes\(^{12}\). It is necessary to 1) deal with uncertainty in knowledge creation processes, 2) accelerate knowledge supply, 3) obtain high efficiency in the knowledge value chain by sharing knowledge in a synergistic manner, 4) allow for a division of knowledge-based labour to optimise specialisation processes in the development of knowledge\(^{13}\).

In the context of knowledge management, higher education institutions are special organisations, as their functioning consists in the creation and transfer of knowledge. At the present time of knowledge economy, it is important to take a closer look at the creation of economically useful knowledge and to undertake actions aimed to optimise such processes.

\(^{13}\) ibid.
Commercialisation of knowledge as well as transfer of technologies from universities to business and knowledge logistics

For a long time, universities have been creating and transferring knowledge in particular in the form of scientific publications and didactic activity. Moreover, at a traditionally understood higher education institution, if one had contacts with the business world, they usually were not formalised and consisted mainly in:

• meetings and discussions during conferences, symposiums and fairs,
• contacts within the framework of professional associations,
• guest lectures and consultations,
• flow of graduates, apprenticeships,
• joint publications, study of specialised literature.

The traditional role of universities understood in the foregoing way is insufficient from the perspective of the contemporary economy. In the light of literature, the academia may engage in the process of knowledge transfer and technology commercialisation in four fields:

• diffusion of knowledge: universities and research institutions generate economically and socially useful knowledge through supporting the broadly understood adaptation of scientific achievements to the industry by means of communications, education, training, creation of production and distribution norms and standards.

• creation of knowledge: universities and research institutions create knowledge which is useful from the social and business point of view by selling or licensing research results. Knowledge gains the character of a commodity for sale – intellectual property is directly used in the market. It is a standard commercialisation model.

• creation of knowledge relations: universities and research institutions create economically useful knowledge by providing services indirectly using intellectual property. Platforms are established for the exchange of expertise, know-how, and the so-called “tacit” knowledge. Emphasis is put on cooperation, common undertakings, partnerships.

• transfer of knowledge through involvement – useful knowledge is treated as a secondary product of a community of interests of universities and their environment. The goal is to go beyond

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traditionally understood boundaries of the functioning of universities in order to develop joint initiatives with various stakeholders of the socio-economic system.

Commercialisation of knowledge comprises all actions related to the transformation of knowledge into new solutions, including products, services, technologies. In other words, it means the “transformation of knowledge and new technological solutions into money” and includes:

- presentation of new innovative ideas, products/processes,
- development work and identification of potential uses,
- creation and demonstration of prototypes of innovative products,
- search for market uses of technologies, technological audit,
- analysis of markets, elaboration and implementation of marketing strategies,
- implementation work and implementation to production,
- placing a product on the market and its sales.

Knowledge transfer and commercialisation usually take place by means of:

- joint and targeted research projects implemented in collaboration with the business sector,
- contract and commissioned research carried out at the request of enterprises,
- enriching the technology market with new patent applications, know-how,
- graduates, didactic processes, doctoral and postgraduate studies,
- scientific and popular science publications, patent descriptions,
- conferences, seminars, fairs, courses and training,
- informal contacts of scientists,
- staff mobility programmes (from academia to business and vice-versa),
- opinions, reviews, expertises,
- provision of licenses and know-how.

At present, it is also possible to indicate other ways of technology transfer and knowledge commercialisation:

- development of specialised institutions acting as intermediaries in the technology transfer,
- academic entrepreneurship and creation of small technological companies,
- support for innovative undertakings conducted in the small and medium enterprise sector.

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18 K. B. Matusiak, Budowa…, op. cit, p. 214.
• innovative collaboration and cooperation networks, development of network structures (such as clusters, innovative environment).

In simple terms, stages of the process of commercialisation of solutions created at universities may be presented as follows:\textsuperscript{19}

1. Search for and identification of studies with possible commercial potential.
2. Assessment of the potential of identified studies.
3. Process of transfer of solutions outside the university, including:
   a. support for the commercial offer elaboration process,
   b. support for the transfer process.

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure1.png}
\caption{General structure of the process of acquisition and commercialisation of ideas in an organisation}
\end{figure}

Source: P. Głodek, \textit{Model scoutingu technologicznego w uczelni wyższej}, document elaborated within the framework of the "SCOUTING – aktywny system monitoringu i oceny potencjału rynkowego prac badawczych kluczem do współpracy nauki i przedsiębiorców" project, Lodz 2012, duplicated typescript.

Technological scouting derives from the business sector. It refers to a systematic approach of an enterprise within the framework of which the enterprise assigns a part of its human resources or hires external consultants to collect information in the field of science and technology, and which facilitates to acquire technologies or leads to the acquisition of technologies\textsuperscript{20}.

\begin{footnotesize}

\textsuperscript{19} P. Głodek, \textit{Model scoutingu technologicznego w uczelni wyższej}, document elaborated within the framework of the "SCOUTING – aktywny system monitoringu i oceny potencjału rynkowego prac badawczych kluczem do współpracy nauki i przedsiębiorców" project, Lodz 2012, duplicated typescript.

\end{footnotesize}
Technological scouting, as a method for obtaining and selecting information, derives from the need to monitor the market of new technical solutions by enterprises. In the 1990s, the idea of scouting began to be adopted and used also by higher education institutions and, more broadly, by scientific bodies. The nature of the use of scouting by the academia is, however, a little bit different than it is in the case of commercial entities. The basic difference is the fact that it is focused on gathering information from the inside of the organisation, and not from its environment. It turns out that the specific character of universities’ operation and a considerable freedom of scientists in managing their research cause important problems related to the coordination of research processes, as well as to the collection and assessment of information at the level of a given institution. The issue seems typical for the academia, regardless of the country, and occurs in the case of most, if not all, higher education institutions. However, it is worth to highlight that scouting as a method has been adopted by leading universities in the field of knowledge commercialisation and technology transfer. This group includes Politecnico di Torino, Eindhoven University of Technology and Biomedicum Helsinki.

In 2013, the University of Lodz attempted to introduce technological scouting on trial basis in order to improve results in the area of knowledge commercialisation and technology transfer. Scouting is an organisational solution consisting in the introduction of jobs into organisational structures and their formal empowerment. These persons – scouts – are responsible for gathering information concerning scientific works, conducting initial evaluation of their potential for commercialisation and establishing contacts with business. In the case of use of a scout network, their participation at particular stages of the commercialisation process may be presented in a manner illustrated in Table 1:

<table>
<thead>
<tr>
<th>Components of the commercialisation process</th>
<th>Assumed role of scouts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search for and identification of solutions</td>
<td>Very important</td>
</tr>
<tr>
<td>Evaluation of potential of the solutions</td>
<td>Important</td>
</tr>
<tr>
<td></td>
<td>In particular with regard to the conduct of initial evaluation</td>
</tr>
<tr>
<td>Transfer process</td>
<td>Auxiliary</td>
</tr>
</tbody>
</table>

Table 1:1 Participation of scouts in particular stages of the knowledge commercialisation process at a university

Source: P. Głodek, Model…, op. cit.


21 Within the framework of the “SCOUTING – aktywny system monitoringu i oceny potencjału rynkowego prac badawczych kluczem do współpracy nauki i przedsiębiorców” project implemented within the framework of the Human Capital Operational Programme.
Technological scouting process at a higher education institution within the framework of the model elaborated for the purposes of the “SCOUTING – aktywny system monitoringu i oceny potencjału rynkowego prac badawczych kluczem do współpracy nauki i przedsiębiorców” [SCOUTING – active system of monitoring and assessment of scientific research market potential as a key to cooperation between science and business] project should have two stages\textsuperscript{22}. The elaborated scouting process concept is illustrated below in Figure 2\textsuperscript{23}.

**Stage I – local scouting**

“Local scouting” consists in identifying scientific research results. It is done by a team of scouts who operate at particular departments of universities and are responsible for developing internal relations with the academic staff. When the scouting system is implemented in an organisation, the process begins with an intense inventory of scientific research, which later, at the post-implementation stage, is replaced with a regular review of novelties and update of the existing databases. Information concerning scientific research results are collected by scouts on the basis of research reports and/or other reports available in the organisation. Scouts meet with scientists conducting the identified scientific research in order to obtain information necessary to assess its commercial potential. For that purpose, they use a standardised data collection tool. After having met with the scientists conducting the identified scientific research, the scout verifies whether the obtained information is sufficient to evaluate the commercial potential. If necessary, the scout contacts the scientists again until they have a sufficient amount of information. Afterwards, the gathered scientific research results are subjected to a current and fast evaluation by individual scouts. The aim of the evaluation is to provide an initial recommendation with regard to the evaluation conducted later by the scout team.

Another stage of the fast evaluation is conducted by the team of scouts functioning in the organisation. The scientific research results evaluation method should allow for a fast evaluation; it may be based on the quicklook method. Its aim is to classify the collected scientific research results and to present recommendations to the central unit responsible for commercialisation at the university (technology transfer centre, TTC). Within the framework of meetings concerning the fast evaluation of scientific research results, also other aspects related to the work of scouts should be discussed and experiences should be exchanged. That is when the I phase comes to an end.

\textsuperscript{22} T. Czapła, B. T. Kalinowski, M. Malarski, M. Turała M., *Produkt. Uczelniany model scoutingu wiedzy i technologii. Filar systemowy. Model tworzenia i działania zespołu scoutów w ramach systemu komercjalizacji wiedzy i transferu technologii na uczelni wyższej*, document elaborated within the framework of “SCOUTING – aktywny system monitoringu i oceny potencjału rynkowego prac badawczych kluczem do współpracy nauki i przedsiębiorców”.

**Phase II – central scouting**

Recommendations of the scout team constitute input material for stage II, which is conducted at the central level of the organisation. A specialised central unit hiring the so-called central scouts (it may be a TTC of the university) begins this stage of the process with a verification of recommendations presented by the local scout team. Central scouts are responsible for developing external relations with persons representing the business milieu.

Evaluation of commercial potential of the analysed scientific research results should, first of all, respond to the question of whether results of research at a given development stage have such a potential or maybe further work is necessary. There are three possible decision options:

1) if a lack of commercial potential is stated (negative evaluation), further work on the commercialisation of scientific research results is withheld;

2) if it is stated that further research is necessary to achieve commercial potential, recommendations are formulated with regard to further course of study; it is expected that results of that research will be submitted for another evaluation after being complemented with elements indicated by scouts or directly by business partners;

3) if it is stated that scientific research results have a scientific potential, the central scout should determine whether:
   a. fast commercialisation path is possible (based on information concerning companies interested in commercialising scientific research results contained in the database); in such a case the central scout organises a meeting of scientists who have conducted the research and representatives of enterprises and leads to the signing of a letter of intent concerning their cooperation. The central scout assumes the role of commercialisation manager, with the support of TTC staff;
   b. commercialisation requires prior obtainment of information regarding potential business partners; in such a situation the central scout identifies the enterprises’ demand; if companies interested in cooperation are identified, the central scout arranges the contact between the scientists who have conducted the research and representatives of an enterprise and leads to the signing of a letter of intent concerning their cooperation. The central scout assumes the role of commercialisation manager, with the support of TTC staff.
   c. a situation in which business partners are not interested in the scientific research results at a given stage is also possible. They may, however, indicate possible development orientations for the research. Such information is then conveyed to the scientists who have conducted the research;

That is when the II phase comes to an end.
<table>
<thead>
<tr>
<th>PL</th>
<th>EN</th>
</tr>
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<tbody>
<tr>
<td>Proces scoutingu</td>
<td>Scouting process</td>
</tr>
<tr>
<td>Scouting lokalny</td>
<td>Local scouting</td>
</tr>
<tr>
<td>Zespół scoutów</td>
<td>Scout team</td>
</tr>
<tr>
<td>Scout</td>
<td>Scout</td>
</tr>
<tr>
<td>Identyfikacja wyników...</td>
<td>Identification of R&amp;D results</td>
</tr>
<tr>
<td>Spotkanie...</td>
<td>Meeting/meetings with R&amp;D executor</td>
</tr>
<tr>
<td>Narzędzie zbierania...</td>
<td>Data collection tool</td>
</tr>
<tr>
<td>Zebranie danych...</td>
<td>Collection of data concerning the conducted R&amp;D</td>
</tr>
<tr>
<td>Baza danych</td>
<td>Database</td>
</tr>
<tr>
<td>Narzędzie oceny</td>
<td>Assessment tool</td>
</tr>
<tr>
<td>Analiza jakości...</td>
<td>Analysis of quality of the collected data</td>
</tr>
<tr>
<td>Czy dane...</td>
<td>Are the data sufficient to assess the potential?</td>
</tr>
<tr>
<td>TAK</td>
<td>YES</td>
</tr>
<tr>
<td>Bieżąca ocena...</td>
<td>Current assessment of the commercial potential</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PL</th>
<th>EN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scouting centralny</td>
<td>Central scouting</td>
</tr>
<tr>
<td>Jednostka odpowiedzialna...</td>
<td>Unit responsible for the commercialisation (e.g. TTC UL)</td>
</tr>
<tr>
<td>Określenie założeń...</td>
<td>Determination of objectives of the commercialisation strategy/business model</td>
</tr>
<tr>
<td>Określenie wstępnych...</td>
<td>Determination of initial recommendations concerning the commercialisation</td>
</tr>
<tr>
<td>Zainicjowanie i koordynacja...</td>
<td>Initiation and coordination of cooperation between the R&amp;D executor and the business partner</td>
</tr>
<tr>
<td>List intencyjny...</td>
<td>Letter of intent or different document defining rules for cooperation</td>
</tr>
<tr>
<td>Weryfikacja rekomendacji...</td>
<td>Verification of scouts’ recommendations</td>
</tr>
<tr>
<td>Mała czasochłonność...</td>
<td>Low time consumption (fast commercialisation)</td>
</tr>
<tr>
<td>Określenie rodzaju...</td>
<td>Determination of the type of path for R&amp;D</td>
</tr>
<tr>
<td>Brak potencjału...</td>
<td>Lack of commercial potential</td>
</tr>
<tr>
<td>Informacja zwrotna...</td>
<td>Feedback to the R&amp;D executor (end of the process)</td>
</tr>
<tr>
<td>Ścieżka komercjalizacyjna</td>
<td>Commercialisation path</td>
</tr>
<tr>
<td>TAK</td>
<td>YES</td>
</tr>
<tr>
<td>Określenie czasochłonności</td>
<td>Determination of time consumption</td>
</tr>
<tr>
<td>Ścieżka naukowa</td>
<td>Scientific path</td>
</tr>
</tbody>
</table>
### Figure 2 Technological scouting process

**Conclusion**

Scientists who are aware of the commercial potential of research they conduct and who are willing to cooperate with business actually do not need support in the form of scouting. At a higher education institution, technological scouting is a comprehensive method which allows the institution to offer the business sector solutions that otherwise would not be commercialised, since their commercial potential would not be evaluated.

In the context of knowledge management, scouting constitutes an instrument serving to gather and select data and information concerning knowledge resources possessed by a university in order to provide them to interested business entities. In the context of knowledge logistics, scouting allows for and accelerates the provision of solutions elaborated through scientific research to a business recipient. Thanks to that solution, provision of technologies and knowledge to business takes place faster, since it uses the active approach of staff responsible for knowledge commercialisation. Scouting may also indirectly contribute to an increase in the number of provided technologies thanks to the popularisation of the idea of commercialisation, as well as due to its possible influence on the course of already conducted studies. A scientist benefiting from a scout’s support has an opportunity to change the orientation of research so that it has a commercial potential.

Higher education institutions create knowledge, including the knowledge about commercial potential. However, taking into consideration a range of limitations, including legal and organisational ones, a part of research results is not used despite their commercial potential. Technological scouting constitutes a solution allowing for a sufficiently fast identification of such a scientific solution and its provision to a business recipient in a manner which is optimal from the point of view of both parties of the transaction.

**Literature:**


Abstract

The aim of this article is to explain a relatively new approach to issues of knowledge management in organisation, i.e. knowledge logistics. The article deals with issues related to processes which take place at universities and lead to the provision of appropriate knowledge to economic sectors. Taking a look at the transfer of knowledge from the perspective of logistics makes it possible to indicate such elements of the process the improvement of which would allow to optimise it. The discussed matters are illustrated with the use of selected available literature a case study – technological scouting process at a university.

Key words

Innovations, knowledge logistics, technology transfer, commercialisation of knowledge, technological scouting
Mateusz Izbicki, MA
Faculty of Law and Administration
University of Lodz

Mateusz Izbicki  Smart energy grids and “presumption” as elements shaping the information society

Introduction

Electricity is a commodity we purchase like rolls and bread. A bill issued by the supplier should specify costs of production, transmission and distribution of energy, as well as determine what portion of it came from renewable sources, so that everybody could easily compare offers of various energy companies and chose the one which best suits their financial capacity and environmental beliefs. It is one of requirements under EU law, the aim of which is to ensure the proper functioning of the electricity market.

The electricity sector is the foundation of every modern economy. Proper and effective functioning of energy companies is necessary for a stable and competitive development of domestic markets. Production and service provision processes cannot function without the use of electricity; it impacts all the remaining sectors of the economy. The cost of electricity is also one of the basic variables determining final product and services prices and, thus, directly influences the condition of the economy of every state.\(^1\).

Efficient functioning of the electricity sector is also undoubtedly necessary for the development and maintenance of the functioning of the information society, as a society based on technologies and universal access to knowledge, in the case of which an important part of the economy is the collection, processing, gathering and transmission of information. Naturally, all communications and information technologies require electricity for their functioning. However, translation of the functioning of the energy sector into the functioning of the sector of information and communications technologies (hereinafter referred to also as ICT) is more complex than the question of supply of electricity to devises used by the ICT sector.

A separate – but still related to smart metering – matter, which is new for the Polish electricity sector, is the idea of prosumption – production of electricity by unprofessional entities from micro-sources, the development of which requires, to a considerable extent, support from the ICT sector and which, at the same time, creates new markets for services related to IT services for devices producing electricity and their cooperation with both home network of the micro-producer and the external energy grid.

\(^1\) F. Elżanowski, Polityka energetyczna. Prawne instrumenty realizacji, Warsaw 2008, p. 11.
The aim of the present study is to present new trends which have occurred in the electricity sector and which allow for the development of the sector of distributed generation of electricity from micro-sources, as well as its possible impact on the resulting development of new ICT sector services and of the information society.

2. Information society and electricity sector

The technological development and the occurrence of new ICT equipment in developed countries are accompanied by an economic and social revolution. Nowadays, both particular citizens and entrepreneurs have access to an unimaginable amount of information and sources of knowledge. The development of information and communication technologies has led to a situation in which distance is becoming less and less important in everyday life, and access to any information is practically unlimited. The foregoing influences also the shape of the economy and the development of its totally new sectors. Information itself has become a commodity, and processes of its gathering, analysing and transferring constitute services which are becoming more and more important from the perspective of the entire market. Currently, also new types of information are searched for; their analysis could provide new sources of knowledge and result in desired changes in social behaviour – e.g. in terms of savings and rationalisation of electricity use.

The European Union considers one of its objectives to be the strive for the development of the information society. At the same time, it is very difficult to determine one definition of the term “information society”. The authors of the publication entitled “Information society. On step forward, two steps backwards” distinguish as much as 30 different definitions of “information society”. Despite a great diversity of definitions and various aspects of the information society on which they focus, most of them contain similar expressions and defining elements. After having combined most definitions and identified the most common elements, it is possible to assume that the information society is a society based on knowledge, information and ICT, thanks to which information has become an independent intangible good and a commodity of a considerable market value which, however, is used not only in the economic sphere, but also in the area of culture, politics and everyday life. Information society is characterised with a high economic and technological growth. That is the reason why it is sometimes referred to as a post-industrial society, although it seems that

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going through the stage of industrial society is not necessary for the development of an information society. An additional element, which is necessary to classify a society as an information society, is the access of most of its members to new ICT technologies, their ability to use the technologies and the latter’s actual everyday usage\(^3\).

Only an information society formed that way will be able to fully benefit from opportunities provided by new technologies in the electricity sector. At the same time, the technologies may accelerate the development of the information society and contribute to the creation of totally new economic branches of the ICT sector.

According to the Communication from the European Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on mobilising information and communications technologies to facilitate the transition to an energy-efficient, low-carbon economy of 12 March 2009\(^4\), the fulfilment of objectives defined by the European Union with regard to the energy sector, and in particular the 20% reduction of carbon dioxide emissions and 20% increase in energy efficiency, will require the use of tools and services offered by the information and communications technologies sector. Thus, it is possible to state that smart energy grids and smart electricity meters come down to the use of appropriate ICT technologies within the framework of the electricity sector.

On the one hand, the development of smart metering technologies and smart energy grids requires the use of advanced telecommunications and information technologies, i.e. tools offered by the ICT sector. On the other hand, the use of opportunities provided by smart energy grids creates a totally new branch of the ICT sector – the one of telecommunications and information services related to the transfer and gathering of information collected by the metering system, as well as to the provision of tools for a more efficient electricity use management, both by large consumers, such as industrial plants, and by small users, i.e. households.

Additionally, the introduction of smart meters encourages consumers, even individual ones, to familiarise themselves with possibilities offered by the new technology and savings,

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\(^4\) Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on mobilising information and communications technologies to facilitate the transition to an energy-efficient, low-carbon economy of 12 March 2009, KOM (2009) 111.
which may be achieved thanks to it. As a result, it favours the development of the information society.

3. Smart energy grids and smart metering

Implementation of the idea of smart energy grids (hereinafter referred to also as SEG) is supposed, first of all, to decrease the negative impact on the natural environment of both the electricity sector itself and of all other domains of economic and everyday life using considerable amounts of electricity. Nevertheless, in addition to environmental aspects, issues related to potential savings obtained thanks to a more effective energy use, considerable increase in energy security of particular consumers and entire regions, as well as the possibility to use modern systems for energy management and diversification of its sources are equally important.

The concept of smart energy grids

The notion of smart energy grids, or smart metering systems, has not been legally defined. However, it is assumed that smart grids are a concept referring to the use of the latest technologies of the ICT sector and tools form the domain of management, allowing for a more efficient organisation and functioning of the electricity sector, as well as for its direct cooperation with energy consumers who – when provided with a direct access to real-time information concerning the manner and amount of consumed energy – obtain tools and knowledge that allow them to influence their own consumption and to adjust it to the grid functioning conditions and to make it as effective as possible, both in economic and environmental terms.\(^5\). Tools aimed to implement the idea of smart grids include smart metering systems providing companies producing, transferring and distributing energy and energy consumers to be connected and to communicate within the framework of an IT system, which could make it possible for all entities to access information being important from their point of view and allowing for a better management of consumed energy\(^6\).

Benefits related to the use of smart energy grids

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At the first stage of their existence, the main objective of smart energy grids is to facilitate the fulfilment of objectives of the EU climate and energy policy. Thanks to the fast and clear access to information concerning the amount of consumed energy, its current price and opportunities to reduce costs, consumers will become more aware of ways to save energy and to use it in a more efficient way. Consumers’ actions will directly translate into positive ecological effects in the form of a reduction in energy consumption and, as a consequence, also a decrease in greenhouse gas emissions and an increase in energy efficiency.

However, in addition to strictly environmental aspects, smart energy grids are simply the future of the energy sector. The introduction of SEG technologies will be beneficial for all entities using electricity:

1. Energy companies:
   a. Having access to the current information about electricity consumption and collective data showing the exact trend of growth and decline in both daily and monthly or annual electricity demand, electricity producers will be able to better manage the energy production process and to turn off unnecessary production capacity in periods of decreased demand or conduct necessary repairs or maintenance of production equipment in the course of those periods. Additionally, introduction of appropriate tariffs or other incentives to rational energy use is supposed to lead to the “flattening” of the daily electricity consumption (decrease in the energy demand during the peak period due to the transfer of some consumption to other hours), which should increase the spare production capacity of the Polish electricity sector. Companies producing electricity from distributed sources (mainly from renewable energy sources) will also note significant benefits in connection with a possibility of more accurate management and control of the production, since it will be considerably easier to define spare transmission capacity and to determine potentially most favourable places for connecting new energy installations.
   b. Operators of distribution and transmission grids will be able to obtain detailed information regarding real-time electricity consumption, grid load, and consumption in the various places of connection, which will allow them to balance their grid in a faster and more effective way, will directly impact the safety of its functioning and will considerably decrease costs related to any losses of electricity in the course of its transport. Thanks to information concerning the off-take and production of electricity, it will be possible to
control in a more careful way the functioning of the grid and to prevent failures caused by its overload.

c. Thanks to the new technology, electricity providers will be able to offer their customers new solutions in the field of electricity supply, new tariffs and trade offers, the aim of which will be to change habits related to the electricity use and to transfer some consumption to off-peak hours, when energy is cheaper. Additionally, it will be much easier to manage the energy sales process due to the fact that many activities, which currently require the presence of an employee of the supplier, will be conducted remotely.

They may include:

− remote suspension and resumption of electricity supplies,
− remote real-time change of purchase tariffs for consumers,
− remote reading of meters and, as a consequence, invoicing and provision of information to customers with regard to current costs related to the electricity consumption,
− creation of IT tools (e.g. website applications) allowing consumers to chose a tariff which is the most beneficial for them considering their current electricity consumption scheme,
− billing of electricity consumption in a prepayment system, which allows consumers to better control their electricity spending,
− reduction of losses related to grid balancing costs, illegal electricity consumption, decrease in the amount of energy consumed by the metering system itself (new devices save a lot more energy than the meters used to date),
− lack of arrears in payments from customers – the latter are not surprised by sudden bills for underpayment noted in the system of advance payment; as a result, they do not need to immediately settle a high fee, which is related to a necessity to pay it in instalments.

2. Particular electricity consumers (both entrepreneurs and households) who, thanks to information concerning the current energy consumption, will be able to save energy in a more efficient manner and to simply turn off devices which do not need to be turned on at a given moment. An indirect benefit for the largest group of electricity sector entities will be new trade offers better adjusted to their needs, provided by electricity suppliers (trading companies)\(^7\). Other direct benefits include:

− lower service charge on the bill for meter reading,
− lack of visits of meter readers; consumers not being involved in electronic meter readings,

\(^7\) Elżanowski F.M., *Smart grids i smart metering...,* p. 21.
- bills are issued on the basis of actual electricity consumption, not prognosis,
- costs of meter exchange are incurred by the energy company,
- possibility of rapid tariff change, creation of new tariffs for consumers,
- more accessible and clear information concerning current consumption, as well as its structure and saving opportunities,
- faster fault location and breakdown recovery,
- possibility to use a prepayment function,
- improved voltage stability (smaller voltage fluctuations related to the unnoticed increase in the withdrawal of energy from the grid),
- easier procedure for changing electricity supplier (easier and more transparent procedures for settling accounts with the current supplier),

3. The society as a whole will naturally benefit from ecological effects of the implementation of SEG – a decrease in the negative impact or electricity use on the natural environment. In addition to the aforementioned primary positive effect of introduction of the SEG, it is possible to expect not only a decline in production costs – thanks to the use of modern energy consumption management methods in companies – but also a decrease in prices of most consumption products, as electricity cost is one of the most important fixed costs taken into consideration by every producer. A decrease in production costs should also translate into greater consumption possibilities of the entire economy and, consequently, lead to an acceleration of economic growth of the entire state. What is more, the level of competitiveness between particular electricity suppliers will increase, as it will be possible to compare them on the basis of a model of actual energy consumption of each consumer.

All the above mentioned positive aspects of the implementation of smart meters and of connecting them into smart energy grids will require a considerable engagement and, thus, also a rapid development of appropriate services of the ICT sector. Furthermore, opportunities related to SEG will definitely incite many individual consumers to become interested in the new technology and will positively contribute to the creation of a real information society.

4. Production of electricity by consumers

Persons who are consumers and, at the same time, are engaged in production processes, are commonly called prosums. The word “prosumer” itself is a combination of the words producer and consumer. It is assumed that it is an entity which ordinarily functions in the economy as a consumer and which has, at the same time, appropriate knowledge,
technology, and financial capacities to execute, to a small extent, tasks which are usually attributed to production companies. The foregoing definition does not refer only to the energy sector, but to all branches of the economy in which conscious consumers may occur, the latter considerably influencing the functioning of enterprises operating in a given sector, due to what they are treated more like contractors and partners then like typical consumers.

However, the currently applicable Energy Law Act and drafts of a new Act on Renewable Energy Sources do not include any definition of prosumer similar to the aforementioned one.

**Prosumer in the electricity sector**

While attempting to elaborate a legal definition of prosumer, it is possible to refer to the definition of two terms constituting this word, since they have their legal definitions. The basic definition of consumer can be found in Article 22\(^1\) of the Polish Civil Code, pursuant to which a consumer is any natural person performing a legal act which is not directly related to their business or professional activity. The definition of producer for the purposes of the energy sector may be found in Directive 2009/72/EC regulating the functioning of the electricity sector\(^8\). According to its Article 2(2), a producer means a natural or legal person generating electricity. After combining the two definitions it is possible to state that a prosumer in the electricity sector is any natural person generating electricity for their own needs, which are unrelated to their business or professional activity.\(^9\).

A very similar definition may be found in Article 4(1) of the draft Act on Renewable Energy Sources, which stipulates that, *subject to Article 19*, a *producer of electricity from renewable energy sources in a micro-installation, being a natural person who does not conduct business activity within the meaning of the Act of 2 July 2004 on Freedom of Business Activity* (Journal of Laws of 2013, items 672, 675, 983 and 1036), hereinafter referred to as the “Act on Freedom of Business Activity”, *who generated electricity in order to use it for their own needs, may sell unused electricity generated by the producer in a micro-installation and introduced to a distribution network*. At the same time, the legislator states that the sale indicated in Article 4(1) does not amount to conducting business activity.

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According to the foregoing, it is clear that a prosumer cannot be a legal person or a so-called legal entity with limited legal capacity. It means that the prosumer category does not include the entire group of enterprises (partnerships and companies) which would like to complement their business activity with small-scale energy production – such entities are categorised as small electricity producers.

**Development of the prosumption sector**

The most considerable obstacle in the current development of the sector of electricity produced by consumers has been the highly professional and vocational character attributed to the entire business activity conducted in the energy sector, regardless of the actual scale of particular entities’ production. In the case of prosumption, we are dealing with an almost totally unprofessional activity – of legally protected consumers – and highly specialist and professional activity – of enterprises generating energy. The combination of these two spheres poses a lot of trouble. Until now, an energy producer has had to fulfil very rigorous technical requirements referring to the used equipment, hired employees and cooperation with an energy grid. Additionally, the producer had to be a guarantor of energy security understood both as stability and continuity of supplies and as safety of the equipment and installations used for the purposes of production processes. A guarantee of execution of all the above mentioned tasks is, above all, the obligation of energy companies to obtain appropriate licences. Obviously, all the foregoing obligations and procedures related to the functioning in the electricity market in practice made it impossible for small unprofessional entities to enter the market\(^\text{10}\).

The amended Energy Law Act of 16 July 2013, which entered into force on 10 September 2013 (Journal of Laws 2013/984), introduced a range of totally new terms to the energy law and related provisions. From the point of view of the development of smart energy grids and opportunities of local communities to engage in the process, the most important task is to introduce a regulation regarding micro-installations. According to the amended Energy Law Act, a micro-installation is a “renewable source of energy of a total installed capacity below 40 kW, connected to an energy grid with a rated voltage of less than 110 kV or of a total installed thermal capacity not higher than 120 kW”. Provisions normalising the use of micro-installations have been regulated in Articles 9u-9x newly added to the Energy Law Act.

\(^{10}\) N. Wrońska, *Prosument – czyli jak konsument* … pp. 128-129.
The most important of the aforementioned provisions is Article 9u, which excludes activities consisting in a permanent generation of electricity for commercial purposes with the use of devices of a small generation capacity from the scope of conducting business activity. The fact that such a production of electricity has been classified as activity other than economic is related, above all, with the lack of obligation of persons conducting it to obtain a licence. Before, it used to be a serious barrier preventing most electricity consumers from entering the market. Such a regulation makes it significantly easier for natural persons interested only in meeting a part of their own electricity demand with the use of a RES installation to undertake activity in the energy sector. As a consequence, it leads to an actual existence of the prosumption sector in Poland and a possibility to develop this totally new branch of industry. At the same time, Article 9v of the Act states who and at what price is obliged to purchase electricity produced by prosumers, providing the latter with a guarantee of sale at a fixed price which is not subject to negotiations. It definitely has to be assessed positively, in view of the unprofessional character of produmers’ activity and a necessity to make it easier to conduct it at every possible stage. It is necessary to remember that it is not an activity oriented primarily towards earning. However, if a natural person decides to turn electricity production into their livelihood, it is obviously possible by means of registering an appropriate business activity, obtaining a license and running business activity in the form of electricity generation on a larger scale.

**Prosumers as active members of the information society**

The positive influence of production of electricity by consumers on the development of smart metering systems and smart energy grids is related to the obligation to adjust metering systems of the needs of simultaneous consumption and production of energy imposed on network undertakings. When connecting a micro-source to a network, the operator of the distribution network is obliged to modernise and adjust the connector to the needs of such activities. It implies a necessity to exchange the meter and creates a natural opportunity to use a more modern, more effective and more comfortable smart meter, which will be useful both for the prosumer and for the network operator. On the one hand, the prosumer will be able to control on a ongoing basis their energy production and consumption. On the other hand, the distributor will obtain access to real-time data concerning the energy currently supplied to the grid without having to order employees to read he meter.
Moreover, considering the obligation – indicated in Article 4 of the Energy Law Act – imposed on energy companies, forcing them to maintain installations, devices and grid in a technical condition allowing to efficiently provide services in the energy sector, it has to be noticed that, from the point of view of grid operators, the most beneficial solution are smart metering systems.

At the same time, a prosumer will be one of the entities using new opportunities provided by smart energy grids in the most active manner and, thus, benefiting form services provided by the ICT sector. The development of prosumption will directly translate into the use of the latest ICT tools for managing electricity production and consumption by households, as well as lead to a remote control of the entire home electricity network.

**Conclusion**

As it was mentioned at the beginning, the system of smart electricity networks and smart meters as well as the ICT sector constitute a system of interconnected vessels – they are interdependent and the development of one sector significantly influences development opportunities of the other.

The ICT sector plays a crucial role in the implementation of objectives and goals of the EU energy policy in the field of the improvement of energy efficiency and reduction of greenhouse gas emissions, especially through the full use of opportunities offered by the development of smart power grids. According to the aforementioned Communication from the European Commission\(^\text{11}\), the use of innovative information technologies in installations related only to the electricity sector may lead to considerable environmental benefits and contribute to an improvement in the efficient use of electricity in all sectors of the economy. As a result, it will also help to improve the competitiveness of the Electricity sector’s economy on a global scale. Thanks to available information concerning current electricity consumption and sources of inefficiency, electricity consumers will be able to correct their behaviour and habits, which will allow them to realise substantial savings related with costs of electricity only. According to pilot projects consisting in the introduction of smart meters in the territory of various EU Member States, potential savings in the electricity consumption in

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\(^\text{11}\) Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on mobilising information and communications technologies to facilitate the transition to an energy-efficient, low-carbon economy of 12 March 2009, KOM (2009) 111.
the consumer sector could amount to as much as 10%\textsuperscript{12}. As for energy companies, thanks to actual quantitative data obtained on a current basis, they will be able to better manage the system, optimise grid equipment setup, and limit losses due to the grid’s operation or any failures.

A benefit from the perspective of the development of information society and ICT sector will be the fact that, thanks to the implementation of SEG, an impetus to the development of the market of other IT services related to electricity management in households and enterprises will be created. The development of the IT services market will lead to the possibility to remotely control nearly all electrical devices at home or in an enterprise with the use of mobile devices – e.g. to turn the lights on or off, control whether all undesired devices are disconnected from the power network, turn alarms and air conditioning systems on and off. Without prior introduction of smart meters and smart energy grids, materialisation and implementation of the foregoing innovative solutions would imply a necessity to develop additional IT tools. After the introduction of the SEG, it will be possible to rely, to the basic extent, on tools elaborated for the purposes of energy companies.

Abstract:

The aim of the present article is to present opportunities related to the use of modern information technologies in the electricity sector as well as their impact on the development of consumer’s awareness and, as a consequence, the development of the idea of information society. In addition, the paper presents a new concept in the electricity maker, i.e. prosumption – distributed generation of electricity form micro-sources by consumers. The author conducts an analysis through the prism of a legal regulation, the goal of which is to promote alternative energy production and the use by consumers of new opportunities offered by the current information technology. In conclusion the author tries to prove that both the development of the electricity sector, consistent with recommendations of the European Union, and the development of the idea of information society are closely related to each other, and that their simultaneous development may guarantee, thanks to the synergy, fastest fulfilment of EU objectives.

\textsuperscript{12} Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on mobilising information and communications technologies to facilitate the transition to an energy-efficient, low-carbon economy of 12 March 2009, KOM (2009) 111, p. 3.
Key words: prosumer, renewable energy resources, information society, smart metering, smart energy grids
Beata Banachowicz, PhD  
Faculty of Management, University of Lodz  
Department of City and Regional Management

**Beata Banachowicz** *Innovation Observatory as a tool for public sector innovation diffusion*

**Introduction**

Public sector organisations have always been looking for new, more efficient ways of fulfilling their public service mission. An increasingly complicated nature of problems constituting the essence of public organisations’ operation has forced them to search for non-traditional institutional and management solutions which would increase the capacity of public administration to perform its duties.

Concepts of the public sector’s functioning which have occurred over the years contributed to the elaboration of new policies, processes, institutional structures, management and technical support tools, the main task of which was to improve and increase the effectiveness of public sector organisations. Thus, one of the most important challenges faced by the modern public sector is to develop better understanding and use of innovation in public management.

There is a number of opportunities to strengthen the innovation potential of the public sector. They include an initiative of OECD (Organisation for Economic Co-operation and Development) consisting in the creation and maintenance of an Internet platform for the collection and dissemination of information concerning successive examples of innovative solutions implemented in various areas of public sector’s activity.

**Innovations in the public sector**

The most common approach to innovations in the public sector consists in adapting concept of innovation formulated for the business sector to the needs of public organisations. It is of course necessary to remember both about similarities and differences between these organisations, but it does not limit the possibility to take advantage of good innovative solutions used in business.

Innovations may be defined in various ways. J.A. Schumpeter understood innovation as an introduction of a new commodity, its production method or opening of a new market.\(^1\) In turn, P.R. Whitfield defined innovation as a sequence of complicated activities that consist in

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\(^1\) J.A. Schumpeter, *Teoria rozwoju gospodarczego*, PWN, Warsaw, 1960, p. 104
solving problems. As a result, a comprehensive and complete novelty is created.\(^2\) Both definitions refer to an innovation in the narrow sense, i.e. only as the first use of a new product or production method.

A broadly understood innovation is not only the first use of a product or production process, but also the reproduction of an innovation in other entities or its absorption by other sectors. A result of the appearance of an innovation is the creation, maturation and popularisation of ideas, the practical implementation of which is accompanied by specific economic and social effects, which was observed by P.F. Drucker. He stated that an innovation is a specific tool for entrepreneurs, allowing them to turn changes into opportunities to undertake new business activity or to provide new services. In his opinion, an “innovation does not need to be technical; it doesn’t even need to be something material”.\(^3\) Therefore, it is possible to distinguish certain areas of public sector’s functioning in which it is possible to “imitate” modern methods of operation of business organizations, taking at the same time specific features of public organisations into consideration.

Considering this specificity, B. Kożuch defines innovation in the public sector in the following manner: “the notion of innovation in the public sector should be understood as the act of creating and implementing a new way of formulating and conducting public policies and related programmes, public services, as well as previously unknown processes (...). Generally, these innovations imply a radical – in at least one aspect – abandonment of traditional ways of service provision (...) while the business sector is dominated by innovations related to technique and technology, the most important public sector innovations are those related to new attitudes and behaviour of people as a result of relationships between the participants of innovative processes in public management.”\(^4\)

Innovations in the public sector concern, above all, such aspects of the functioning of a public organisation which are important from the point of view of strengthening the organisation’s potential. Innovations in the public sector cover such activities as:

- ability to function smoothly
- creativity
- fast decision-making

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\(^2\) P.R. Whitfield, *Innowacje w przemyśle*, PWN, Warsaw 1979, p. 26
\(^3\) P.F. Drucker, *Innowacja i przedsiębiorczość*. Praktyka i zasady, PWE, Warsaw, 1992, p. 29
• pre-emptive actions in the field of spatial development
• proper planning of economic growth
• territorial marketing
• public services management, including introduction of modern forms of management fostering efficiency
• partnership management (co-management), etc.

At the time of increasing competitive pressure, the efficiency of public organisations’ functioning and the quality of services for the arrangement of which they are responsible are becoming a more and more important component of the creation of competitive advantages. At the same time, it is necessary to remember that innovations are risky and costly. Not every public organisation is able to take the risk of creating innovation and to increase costs of its implementation. That is the reason why it is extremely important to provide the widest possible access to knowledge concerning already conducted and successful implementations of innovative solutions that improve the efficiency of the functioning of the public sector. One of available tools for the diffusion of knowledge and skills in the field of innovative solutions that increase the efficiency and effectiveness of public sector activities is supposed to be the OECD Observatory of Public Sector Innovation (OPSI).

**OECD Observatory of Public Sector Innovation**

First works on the concept of OPSI began in 2011. These actions have been conducted within the framework of operation of the OECD Public Governance Committee. A body supporting the Committee is a special OPSI Task Force, composed of representatives of twenty one OECD member states. Poland is represented by employees of the Civil Service Department of the Chancellery of the Prime Minister.

The term Innovation Observatory refers to actions focused on the conduct of research as well as in the analysis and interpretation of its results in the context of the dynamically changing market of innovative products and services. These actions are aimed at:

• Better understanding of rules of the market in which a given entity operates,
• Understanding of orientations and dynamics of changes taking place in the innovation sector,
• Understanding of current conditions of the innovation market functioning which must be appropriately responded to,
• Identification of innovative solutions – those which may be implemented immediately and those which may be introduced in the future – in order to raise revenues, open new markets, decrease costs and increase profits.

The principal aim of OPSI is systematic collection, classification, analysis and diffusion of knowledge regarding innovative solutions used in the public sector, with the use of an interactive database available online.

In the light of challenges currently faced by the public sector, it becomes indispensable to search for mechanisms supporting public authorities in improving the efficiency and effectiveness of their functioning. It refers particularly to the sphere of public services, through the prism of which the efficiency of the public sector functioning is assessed.

Fundamental problems of the public sector concern two issues: rigid budget constraints and increasing expectations with regard to the public service provisions (both in terms of their diversification, and of growth in demand). OPSI responds to these needs by proposing innovative solutions that improve the functioning of the public sector and allow for the achievement of better results of undertaken actions.

Within the framework of the Observatory of Public Sector Innovation, three fields of action are indicated:

• Innovative practice mapping – understood as collecting and analysing examples of successful implementations of innovative solutions in the public sector,
• Result assessment – understood as collecting, analysing and developing of cost-benefit analysis methodologies for innovative solutions,
• Promotion of innovative practices – understood as collecting and analysing information concerning tools and conditions aimed to support promotional activities in the field of public sector innovations.

It is assumed that within the framework of the Observatory of Public Sector Innovation a platform for understanding will be created for entities interested in the implementation of innovative solutions in the public sector, as well as a knowledge and experience exchange forum. Thus, participants of the Observatory will be, above all, representatives of the public sector, but an important role will also be played by other actors, i.e. representatives of local community, of the research, economic or social sector – all persons interested in improving the functioning of the public sector both in the institutional sphere and in the public service sector.
At present, works are conducted within OPSI in order to collect and analyse examples of good practices in implementing innovation in the public sector and to provide practical advice related to this field to OECD member states. To this aim, three types of actions are undertaken:

| Inspiring | • Providing a unique collection of innovations from across the world, through an online platform, to inspire innovators in other countries |
| Connecting | • Building a network of innovators, both virtually and in person through events and conferences to share experiences |
| Promoting | • Turning analysis of concrete cases into practical guidance on how to source, develop, support and diffuse innovations across the public sector |

Scheme 1. Actions undertaken within the framework of the Observatory of Public Sector Innovation

Source: https://www.oecd.org/governance/observatory-public-sector-innovation/about/

One of the most important initiatives undertaken within the framework of the Observatory of Public Sector Innovation is to create an online platform which, in practice, will constitute a database of good practices in the domain of public sector innovations. A prototype of the platform has recently been made available in the trial version at:


The OPSI platform is supposed to constitute a space in which users interested in public sector innovations may find information concerning innovative solutions they are interested in, share
their experiences in this area and cooperate with each other within the framework of the existing and new projects.

Below, there is a sample screenshot of the website providing information about public sector innovations within OPSI.

In the “Innovations” tab, there is a tool allowing to search for information regarding registered public sector innovations according to 8 criteria:

- Country
- Level of government (central, regional and local, as well as a couple of levels at the same time)
- Sector (health, education, social protection, environmental protection, public safety, housing, etc.)
- Year of launch
- Type of innovation (process, organisation, service and other)
- Stage of innovation (testing, implementation, diffusion)
- Partners jointly elaborating an innovative solution (society, public partner, private partner, research body)
- Results (efficiency, service quality, accessibility, etc.)
The “Submit” tab allows to gather examples of innovative solutions elaborated by practitioners working in the public sector. The tool allows to use a five-stage procedure for entering an innovation to the base.

Stage 1 is innovator’s registration in the system. Another step consists in completing an electronic form which allows to describe in detail crucial elements of the innovative solution and to send them for assessment. At the 3rd stage, a representative to the OECD of the country from which the innovation originates conducts its preliminary assessment to state whether it meets the adopted criteria. At Stage 4, a detailed assessment of the proposed innovation is performed. The last stage consists in the publication of the solution in the database and provision of the innovation’s description to other users.

The OECD OPSI platform offers also a library of publications with regard to public sector innovations. Resources of the library include OECD’s own publications, publications from public resources of member states’ authorities as well as scientific publications.

As for now, the “Collaborate” function has not been launched yet. It is expected that this tab will be made available in autumn 2014. In turn, it is possible to consult OPSI Blog, which is intended for an exchange of opinions concerning public sector innovations.

It is worth to mention that Poland actively participates in the development of the platform’s resources. Numerous actions are undertaken in order, on the one hand, to present innovations of the Polish public sector through entering information to the base and, on the other hand, to dissimulate information about the initiative among Polish public sector organisations.
One of such actions is the implementation of the Project no. POKL.05.02.02-00-001/12 “Systemowe wsparcie procesów zarządzania w JST” [Systemic support for management processes in local governments], co-financed by the European Union through the European Social Fund under the Human Capital Operational Programme – Priority V, Action 5.2, Measure 5.2.2. Action 6 – Elaboration of innovative solutions in the domain of public management, implemented by the Partner – University of Lodz, the part concerning the Innovation Observatory provides for actions which are supposed to constitute contribution to the activity of OECD in the field of development of the Observatory of Public Sector Innovation Internet platform. Within the framework of the Action, four results using the OPSI concept has been defined. They include:

- implementation of innovative solutions recommended by the OPSI in local governments and dissemination of knowledge about these solutions elaborated in collaboration with research centres,
- elaboration of a methodology for collecting and analysing the set of innovative practices in the public service sector,
- elaboration of guidelines regarding the implementation and promotion of innovations in the process of public service provision,
- elaboration of instruments for the assessment of benefits and costs of implementation of innovative solutions in the public sector.

Effects of execution of the Action will be made available in the form of a publication in the second quarter of 2015. Its execution may result in the future in an active participation of Polish public sector institutions in the development of European resources of knowledge and experiences related to innovative institutional solutions and solutions introduced to the public service sector.

**Conclusion**

There is no doubt that innovativeness constitutes a key factor influencing the competitiveness of companies. The same refers to local, regional, national and global economies. The question is, thus, why shouldn’t it be a factor determining an increase in the effectiveness and efficiency of the functioning of the public sector and, as a result, improve its competitiveness? Today, it is not only an opportunity, but also an urgent necessity. Therefore, any initiative increasing the innovativeness of public institutions both in terms of institutional and organisational efficiency and in the field of management of socio-economic development
should be treated as an important contribution to the development of the public sectors’ innovation potential.

The Observatory of Public Sector Innovation constitutes one of such opportunities and the fact that Poland actively participates in the implementation of the project gives hope for the development of a modern, efficient and effective public administration at each of its levels.

**Literature:**


P.R. Whitfield, *Innowacje w przemyśle*, PWN, Warsaw 1979, p. 26


**Abstract**

Innovativeness of the public sector has become one of the most important challenges of the present times. The comprehensiveness of management processes in the public sector, as well as the complexity of the internal and external environment in which those processes take place, incites, and often forces, to search for new, more effective and more efficient ways of operation of public sector organisations. Thus, innovativeness is becoming, on the one hand, a necessity and, on the other hand, an opportunity for public organisations in the context of creation and development of their ability to efficiently operate for the benefit of the society and the economy.

The aim of the present chapter is to present the OECD Observatory of Public Sector Innovation and to indicate possible uses of the tool for the purpose of diffusion of knowledge and skills strengthening the innovative potential of public organisations.

**Key words:** public sector, innovations, Observatory of Public Sector Innovation
Paweł A. Nowak, MA  
Department of Local Government Economics, Institute of Spatial Economics, University of Lodz  
acting Head of the Information Society Unit at the Digitalisation Department of the Marshal’s Office of the Lodzkie Region

Paweł A. Nowak - *Digital Agenda for Europe in the planning of the development of the European Union and of Poland in the years 2014-2020*

1. On the way to the new perspective

In the initial period of the functioning of the European Union, its Agendas focused in the information society (IS) mainly in the context of matters related to the standardisation of information technology and telecommunications. An example of such an action may be the Council Decision of 22 December 1986 on standardisation in the field of information technology and telecommunications.\(^1\) The document provided for the creation of regulatory framework for the development of information society. The assumed aim of the regulations was to:

“a) contribute to the integration of the internal Community market in the information technology and telecommunications sector;
b) improve the international competitiveness of Community manufacturers by allowing for greater market uptake in the Community of equipment manufactured to recognized European and international standards;
c) facilitate the exchange of information throughout the Community, by reducing the obstacles created by incompatibilities arising from the absence of standards or their lack of precision;
d) ensure that user requirements are taken into account by giving users greater freedom to assemble their systems in a manner guaranteeing operating compatibility and, consequently, improved performance at a lower cost;
e) promote the application of standards and functional specifications in public sector orders.”\(^2\)

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\(^1\) Official Journal of the European Communities (OJ L 36/31, p. 236)  
However, it was the publication of the Bangemann Report\textsuperscript{3} that highlighted the necessity of active measures for the development of information society in the European Union, stating that it is a social challenge and one of the main development priorities. “The widespread availability of new information tools and services will present fresh opportunities to build a more equal and balanced society and to foster individual accomplishment. The information society has the potential to improve the quality of life of Europe's citizens, the efficiency of our social and economic organisation and to reinforce cohesion.” \textsuperscript{4}

According to the logics of the European Union, the direct indicator of the “weight” of an issue is the amount of budget funds attributed to it. Although EU budgets for the years 1988-1992 and 1993-1999 did not include any funds indicating that the creation of the information society could be considered a development priority of the EU, the “Santer package” (EU budget for the years 2000-2006) and in the “Barroso package” (EU budget for the years 2007-2013) it is possible to observe that the development of the information society in the European Union has been classified as priority action. The issue was analysed at the request of the European Commission by a consortium composed of: Stowarzyszenie Miasta w Internecie [Cities in the Internet Association] (Poland), Danish Technological Institute (coordinator), EMPIRICA (Germany), European Regional Information Society Association (ERIS@) and Center for Urban and Regional Studies (Great Britain). “Main conclusions drawn on the basis of the report allow to state that the role of the information society development policy and ICT investment is becoming more and more significant in the entire EU: total expenditure allocated to this purpose in the years 2000-2006 amounted to EUR 6.4 billion, while in the terminated period (2007-2013) it was planned to devote EUR 14.7 billion to the development of the information society. (...) Analyses conducted within the framework of a research project indicate that the following trends developed within the framework of regional information society development policies:

a) development of the information society not only remains one of the main priorities, but even gains in importance: in the EU, expenditure for this purpose has doubled.

b) most Member States abandon investments in the basic, hard infrastructure: the analysis of expenditure according to investment category shows that in the 2000-2006 financial period only 6 EU countries allocated the most considerable part of expenditure to the

\textsuperscript{3} Bangemann Report is, of course, a common name. The official title of the document is \textit{Europe and the global information society, Recommendations of the Bangemann Group to the European Council}, Brussels 1994.

\textsuperscript{4} http://ec.europa.eu/archives/ISPO/infosoc/backg/bangeman.html (01.09.2012)
hard infrastructure; one of those countries was Poland (the remaining countries are Austria, the Czech Republic, Ireland, Italy and Latvia).

c) In the period 2007-2013, a considerable change has taken place in terms of geographical structure of allocation – the centre of gravity, as far as interventions are concerned, moved to the East of the European Union.\(^5\)

Polish government also responded to the current financial perspective (2014-2020). Works have been undertaken on the method of allocation of these funds to the broadly understood information society. Main proposals of the government are founded on the following ideas:

1. Means provided for the development of IS in Poland should be concentrated, above all, within the new operational programme – Digital Poland Operational Programme, which:

   “will be composed of 4 axes (according to proposals of the Ministry of Administration and Digitisation):

   – Fast broadband Internet
   – eGovernment and open state
   – eEconomy
   – Technical assistance

   • allocation – approx. PLN 10 billion from the European Regional Development Fund (with the possibility of cross-financing in the case of soft measures)
   • managing authority – Ministry of Regional Development, Ministry of Administration and Digitisation as the intermediary institution.”\(^6\)

2. The main objective of the programme will be a “strong coordination on the national level, including the determination of standards of actions undertaken at the regional level”\(^7\)

A similar way of thinking by government representatives is presented in the draft of the so-called “Computerisation Act”, which is currently being elaborated. However, first opinions expressed by the milieu do not bode a spectacular success. Objections to the way of thinking about cooperation between the government and its social partners related to the development of the information society in Poland are most explicitly expressed in the stand of the Polish Information Processing Society: “authors of the draft do not notice that a range of problems,
which the Act is supposed to solve, result from bad law, lack or incompleteness of regulations, excessive or contradictory provisions. The draft promotes a strongly centralised solution based on the multiplication of detailed provisions concerning the ePUAP platform, while experiences (not only of Poland) clearly show that such a centralisation usually ends up with an implementation disaster. 

2. Digital Agenda for Europe

In may 2010, the European Commission presented the Digital Agenda for Europe. The Agenda was the first out of seven main initiatives resulting from the implementation of the Europe 2020 strategy. “The crisis has wiped out years of economic and social progress and exposed structural weaknesses in Europe's economy. Europe's primary goal today must be to get Europe back on track. To achieve a sustainable future, it must already look beyond the short term.

Faced with demographic ageing and global competition we have three options: work harder, work longer or work smarter. We will probably have to do all three, but the third option is the only way to guarantee increasing standards of life for Europeans. To achieve this, the Digital Agenda makes proposals for actions that need to be taken urgently to get Europe on track for smart, sustainable and inclusive growth. Its proposals will set the scene for the longer-term transformations that the increasingly digital economy and society will bring about.”

The scope of the Digital Agenda for Europe covers eight key action areas. Their support may allow to achieve its objectives.

First: A vibrant digital single market – “The internet is borderless, but online markets, both globally and in the EU, are still separated by multiple barriers affecting not only access to pan-European telecom services but also to what should be global internet services and content. This is untenable.” In order to make the development of the European Union’s digital market more dynamic, the Agenda recommends what follows:

1. Opening up access to content.

Such actions must be conducted prior to changes in the European law and regulations applicable in Member States. “Digital distribution of cultural, journalistic and creative content, being cheaper and quicker, enables authors and content providers to reach new and

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larger audiences. Europe needs to push ahead with the creation, production and distribution (on all platforms) of digital content.”  

In the present legal situation it is not possible due to the fact that copyrights are regulated at the national level and intellectual property is protected to a varying extent in different countries. Creation of a unique, coherent and transparent copyright management system will allow for a free exchange of thoughts and concepts and, eventually, increase the innovativeness of Europe.

2. Making online and cross border transactions straightforward

“European consumers are still not getting the gains of price and choice that the single market should offer because online transactions are too complicated. Fragmentation also limits demand for cross-border eCommerce transactions. Less than one in ten eCommerce transactions are cross-border, and Europeans often find it easier to conduct a cross-border transaction with a US business than with one from another European country.”  

Although a considerable part of Europe uses the common currency, identity authentication systems and systems for authentication of electronic payments are still organised according to national borders. In is therefore recommended in the Agenda to faster complete works on the Single Euro Payment Area (SEPA), which would allow to launch innovative solutions in the field of electronic money – the value of such a market in 2012 is estimated to have amounted to EUR 10 billion.


Europeans enjoy a series of rights that are relevant to information society services. However, information about them is scattered across various laws and is provided with the use of a specialist language which is difficult to understand for an average user. This state of affairs increases a lack of trust in the online environment and hampers the development of Europe's online economy. “Cross-border transactions online can (...) be made easier by increasing the coherence of European contract law, based on a high level of consumer protection. The Commission will also launch an EU-wide strategy to improve Alternative Dispute Resolution systems and propose an EU-wide online redress tool for eCommerce and improve the access to justice online.”  

4. Reinforcing the single market for telecommunications services.

“Since the single market demands that similar regulatory issues be given correspondingly similar treatment, the Commission will prioritise the provision of guidance on key regulatory

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concepts under the electronic communications rules, in particular costing methodologies and non-discrimination, and will also look for durable solutions for voice and data roaming (...)”\(^\text{15}\)

Second: Interoperability and standards. The development of information society requires effective implementation of an open architecture of telecommunications products and services. A situation in which the choice of brand of a device, operational system in which it operates or a specific producer prevents the user from benefiting from a considerable part of public resources or digital services is unacceptable. That is the reason why the following actions are indispensable:

1. Improving ICT standard-setting\(^\text{16}\).
   “Europe's standard-setting framework must catch up with fast-moving technology markets because standards are vital for interoperability.”\(^\text{17}\)

2. Promoting better use of standards.
   “Public authorities should make best use of the full range of relevant standards when procuring hardware, software and IT services, for example by selecting standards which can be implemented by all interested suppliers, allowing for more competition and reduced risk of lock-in.”\(^\text{18}\)

3. Enhancing interoperability through coordination.

The European Commission should put special emphasis on the preparation and implementation of the European Interoperability Strategy, which will force public administration of Member States to apply uniform rules related to ICT. Such an action should indirectly force the application of similar rules by producers and suppliers of hardware and software.

Third: Trust and security. “Users must be safe and secure when they connect online. Just like in the physical world, cybercrime cannot be tolerated. Besides, some of the most innovative and advanced online services – such as eBanking or eHealth – would simply not exist if new technologies were not fully reliable. (...) strengthening security in the digital society is a shared responsibility – of individuals as much as of private and public bodies, both at home and globally.”\(^\text{19}\)

\(^\text{15}\) Digital Agenda for Europe, website of the European Commission www.europa.eu, p. 17.
\(^\text{16}\) ICT – Information and Communication Technologies
Fourth: Fast and ultra fast internet access. The fundamental objective of the Agenda is to ensure that, by 2020, all Europeans have access to much higher internet speeds of above 30 Mbps and 50% or more of European households subscribe to internet connections above 100 Mbps. Achievement of these goals will allow for an actual use of information society services: free access to digital content, remote work, real-time cooperation between geographically distant entities (e.g. eHealth services, design works, etc.). Proposed actions are as follows:

1. Guarantee universal broadband coverage with increasing speeds,
2. Foster the deployment of NGA networks
3 Open and neutral Internet

Fifth: Research and innovation. “Europe continues to under-invest in ICT related research and development. Compared to major trading partners such as the US, R&D in ICT in Europe is not only a much smaller proportion of total R&D spend (17% compared to 29%, but in absolute terms represents around 40% of US expenditure (...).”20 It clearly leads to a decrease in the competitiveness and innovativeness of the European economy compared to the principal partners. Diagnosed causes of such a situation include:
- weak and dispersed public R&D effort,
- market fragmentation and dispersion of financing means for innovators,
- Europe is slow in the uptake of ICT-based innovations, notably in areas of public interest.

The following actions will make it possible to change this state of affairs:

1. Step up efforts and efficiency. “Building on the European strategy for leadership in ICT, Europe must step up, focus and pool its investments to keep its competitive edge in this field and continue to invest in high-risk research, including multi-disciplinary fundamental research.”21

2. Driving ICT innovation by exploiting the single market. Europe’s public sector expenditure may be used to spur innovation as well as raise the efficiency and quality of public services. In order to make it possible, Knowledge transfer activities should be managed effectively and supported by suitable financial instruments and publicly funded research should be widely disseminated through Open Access publication of scientific data and papers.”22

3. Industry-led initiatives for open innovation. It is necessary to support, with the use of EU funds, actions favouring open and interoperable solutions in the field of ICT use. “Industry-led initiatives aiming at standards and open platforms for new products and services will be

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22 Digital Agenda for Europe, website of the European Commission www.europa.eu, p. 27.
supported in EU-funded programmes. The Commission will reinforce the activities bringing together stakeholders around common research agendas in areas such as the Future Internet including the Internet of Things and in key enabling technologies in ICT.”

Sixth: Enhancing digital literacy, skills and inclusion. According to the data of the European Commission, approx. 150 million Europeans have never used the Internet. It means that the said group, composed mainly of people aged 65 to 74 years, is threatened by digital exclusion. This phenomenon may be very dangerous, considering especially the emphasis put by the European administration on the development of such domains as eHealth, eGovernment or eEducation. In order to counteract this phenomenon, it is necessary to undertake the following actions:

1. Digital literacy and skills. “It is essential to educate European citizens to use ICT and digital media and particularly to attract youngsters to ICT education. (...) All citizens should be made aware of the potential of ICT for all kind of professions. This calls for multi-stakeholder partnerships, increased learning, recognition about digital competences in formal education and training systems, as well as awareness raising and effective ICT training and certification outside formal education systems, including the use of online tools and digital media for re-skilling and continuing professional development.”

2. Inclusive digital services. It means a need for common actions allowing for the use of information society services by persons threatened with digital exclusion, including people with disabilities.

Seventh: ICT-enabled benefits for EU society. “The digital society must be envisioned as a society with better outcomes for all. The deployment of ICT is becoming a critical element for delivering policy objectives like supporting an ageing society, climate change, reducing energy consumption, improving transportation efficiency and mobility, empowering patients and ensuring the inclusion of persons with disabilities.” To this end, it is necessary to undertake the following actions:

1. ICT for environment. It implies support for the use of ICT aimed at decreasing negative, from the point of view of the environment, effects of Europe’s economic growth.

2. Sustainable healthcare and ICT-based support for dignified and independent living. “The deployment of eHealth technologies in Europe can improve the quality of care, reduce medical costs and foster independent living, including in remote places. An essential

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condition for success is that these technologies incorporate the right of individuals to have their personal health information safely stored within a healthcare system accessible online. To exploit the full potential of new eHealth services, the EU needs to remove legal and organisational barriers, particularly those to pan-European interoperability, and strengthen cooperation among Member States.”

3. Promoting cultural diversity and creative content.

4. EGovernment. “eGovernment services offer a cost-effective route to better service for every citizen and business and participatory open and transparent government. eGovernment services can reduce costs and save time for public administrations, citizens and businesses. They can also help mitigate the risks of climate change, natural and man-made hazards by including the sharing of environmental data and environment-related information.”

5. Intelligent Transport Systems for efficient transport and better mobility.

Eighth: International aspects of the Digital Agenda. “The European Digital Agenda aims to make Europe a powerhouse of smart, sustainable and inclusive growth on the global stage. The seven pillars in the Digital Agenda all have international dimensions. The Digital Single Market in particular needs an external face because progress on many of the policy issues can only be made on an international level. Interoperability and standards recognised at the world scale can help promote more rapid innovation by lowering the risks and costs of new technologies. Addressing rising cyber security threats also needs to take place in an international context.”

3. Potential indicators of success

As outlined above, the Digital Agenda for Europe constitutes a comprehensive programme, the implementation of which is supposed to ensure stimulation and increase the effectiveness of the European economy by means of providing citizens and entrepreneurs with greater access to basic information society services. However, this ambitious project requires concentrated financial outlays which, in the context of the predicted second wave of the crisis and a potential loss of stability by the euro area, may turn out to be impossible to attain.

It is therefore necessary to ask whether there is an extent of the Agenda’s implementation which could be considered satisfying? It seems that it is impossible to define one, common extent for the entire EU. A different level of indicators will be regarded as a

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26 Digital Agenda for Europe, website of the European Commission www.europa.eu, p. 34.
success in the countries of the so-called old EU, different in the case of those states which
have been Members for 10 or more years (including Poland), and different in newly acceded
countries. Nevertheless, in each case it must be a sustainable development. Without
sustainable development of the access to infrastructure, including the access to broadband
Internet, access to digital services and development of digital skills of EU citizens, the rate of
return on investment in the information society, understood as socio-economic development
of the European Union, will be unsatisfactory.

ABSTRACT

According to the logics of the European Union, the direct indicator of the “weight” of an issue
is the amount of budget funds attributed to it as well as the number of programmes and
sectoral policies. Although EU budgets for the years 1988-1992 and 1993-1999 did not
include any funds indicating that the creation of the information society could be considered a
development priority of the EU, the “Santer package” (EU budget for the years 2000-2006)
and in the “Barroso package” (EU budget for the years 2007-2013) it is possible to observe
that the development of the information society in the European Union has been classified as
priority action. It is confirmed also by numerous planning documents, sectoral policies, action
plans, including the Digital Agenda for Europe.

The Digital Agenda for Europe is a document determining objectives and orientations of the
development of information society in the European Union in the upcoming years. The aim of
the article is to present the main objectives of the development of the EU Digital Single
Market and the remaining key action areas described in the Agenda.

Key words: information society, Digital Agenda for Europe, ICT
1. Service is a matter of major importance in the case of every procedure. Thus, it is very significant also in the context of provisions of the Act of 14 June 1960 – Code of Administrative Proceedings\(^1\). Although a service constitutes a substantive technical activity – it produces legal effects by means of facts – its meaning for the proceedings, and in particular for its parties, is invaluable. There is no doubt that lawsuit rights and rights under substantive law granted to the parties and to other participants of the proceedings often depend on the effectiveness of service. Moreover, from the date of service of certain documents, parties are charged with obligations, the failure to fulfil which results in the necessity to impose an administrative and legal coercion.\(^2\) In literature, it is indicated that the institution of service materialises the principle of active participation of parties in the proceedings, since it allows a party to learn about actions undertaken by a given body or to participate in these actions, e.g. subpoena\(^3\). What is more, provisions regarding service constitute, due to their general character, a guarantee of observance by a public administration body of the democratic rule of law principle. Their aim is to protect citizens against abuses of the government\(^4\). Furthermore, it has to be mentioned that CAP provisions concerning the service play the role of a guarantee with regard to the written-form principle\(^5\). Pursuant to Article 14 § 1 of the CAP “\textit{All matters shall be disposed of in writing or in the form of an electronic document as defined in the Act of 17 February 2005 on Computerisation of Entities Performing Public Tasks (…), to be served by means of electronic communication.}” However, the legislator allows also – by way of exception – for matters to be disposed of orally, as Article 14 § 2 of the CAP stipulates that “\textit{Matters may be disposed of orally if it is in the interest of the parties and no provision of law}

\(^1\) Consolidated text, Journal of Laws of 2013, item 267, as amended, hereinafter referred to as the CAP.

\(^2\) One of general principles of administrative enforcement proceedings is the principle of legal obligation to conduct enforcement, which means that, in a situation in which the obligor fails to fulfil their obligation of a regulatory nature, the obligee must undertake steps aiming at the application of enforcement measures.

\(^3\) A. Wróbel, \textit{Komentarz aktualizowany do art. 39 kodeksu postępowania administracyjnego}, Lex el 2014, and jurisprudence views contained therein.

\(^4\) Cf. judgement of the Supreme Administrative Court of the Republic of Poland of 4 April 2008, II GSK 3/08, Lex no. 468732.

provides otherwise. The contents and key reasons for such verbal disposal shall be recorded in case files by ways of minutes or annotation signed by the party”. Nevertheless, also in the case of such disposal of the matter, it is necessary to record its content and key reasons in case files. It means that the written-form principle has not been totally excluded. Furthermore, it should be noticed that, generally, all procedural measures taken within the framework of proceedings are recorded in writing, and the service of a document – being a written record of a procedural measure – results in a range of legal effects of major importance. It has to be highlighted that, due to the fact that provisions regarding the service execute the function of a guarantee, as well as to the significance of the service itself, the legislator did not provide for a possibility to relax these requirements. In the literature, the principle of formal character of service is also strongly emphasised. It means that a body serves documents ex officio – it is its statutory obligation resulting directly from Article 39 of the CAP, as well as from the social significance and function of administrative proceedings. Thus, a party (as well as other participants of the proceedings) does not need to file any requests for pleading service and do not have to ask the body whether there are any pleadings regarding their case which could be collected – the body is obliged under law to serve documents to the party. A service which is not consistent with rules specified in the CAP violates the principle of formal character and, as a consequence, is deprived of force in law. It has to be highlighted, that within the framework of administrative proceedings, legal effects are related to the service of a pleading. Therefore, form the point of view of correctness of procedural measures and of the course of proceedings, it is not important whether the addressee reads the content of the pleading. While assessing the correctness of service, only the receipt of the pleading by the addressee is taken into consideration – according to the legislator’s intent, pleadings are serviced against receipt. However, not only proper service the but also substituted service is effective. The

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6 Cf. e.g. provisions of Article 67 § 1 of the CAP, pursuant to which “Each public administration authority shall draw up concise minutes of every action undertaken in the proceedings having vital significance for deciding the matter, unless the action has been in other manner recorded in writing”; as well as Article 72 § 1 of the CAP, pursuant to which “All actions of the public administration authority which are not recorded in the minutes and which have significance to the matter or to the course of the proceedings shall be recorded in the case files in the form of an annotation signed by the employee who performed such actions,” and under § 2 of the Article “Such annotation may be made in the form of an electronic document”.  
7 Cf. e.g. G. Łaszczyca, A. Matan, Doręczenie w postępowaniu administracyjnym ogólnym i podatkowym, Cracow 1998, p. 22 et seq.  
8 In the literature, it is even indicated that the legislator did not provide any liberating provisions –this fact is highlighted by J. Borkowski [in:] B. Adamiak, J. Borkowski, Kodeks postępowania..., p. 233.  
10 Under Article 46 § 1 of the CAP, the person receiving a document confirms the receipt with their signature and indicates the receipt date.
receipt constitutes, above all, evidence to confirm the date of on which a given period began or ended, as well as the possibility to conduct various actions. Moreover, it results in the presumption of service.\textsuperscript{12}

Furthermore, it has to be emphasised that provisions of the CAP regarding the service – due to the need to precisely determine facts producing legal effects – are highly formalised, and administration bodies are obliged to strictly adhere to the formal requirements specified in the provisions.

\textbf{2.} It is difficult not to notice that, nowadays, electronic communication is becoming more and more important for the society. Thanks to the actually universal access to the Internet and its ease of use, electronic communication means are very often used in practice. The fact has been noticed also by the legislator, which resulted in the introduction of various amendments to the applicable provisions, facing the trend of a more and more widespread computerisation\textsuperscript{13}. The trend is also visible in the case of amendments introduced to the Code of Administrative Proceedings. Also the last of them – introduced by Article 2 of the Act of 10 January 2014 amending the Act on Computerisation of Entities Performing Public Tasks and Certain Other Acts\textsuperscript{14}, which entered into force on 11 May 2014 – falls into this trend. Amendments introduced under this Act refer generally to the service\textsuperscript{15}. Moreover, it seems that the legislator carried out a real revolution in this domain.

\textbf{3.} The issue of service is regulated in the Code of Administrative Proceedings in Articles 39-49 (i.e. in Chapter 8, Section I of the CAP entitles “Service”). The computerisation trend has been visible in the context of these provisions for a long time. However, the latest amendment of CAP provisions introduced very serious changes. First of

\textsuperscript{12} Obviously, like every presumption, the presumption of electronic service may be rebutted by a proof to the contrary.
\textsuperscript{13} It has to be noticed that the Act on Rendering Electronic Services implemented into Polish law the provisions of Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (OJ EC L 178 of 17.07.2000, p. 1, (OJ EU, Special edition in Polish, Chapter 13, vol. 25, p. 399), i.e. the E-Commerce Directive. However, it is indicated in the literature that Article 39\textsuperscript{1} of the CAP should be interpreted – if possible – in the light of the wording and objectives of the directive – vide A. Wróbel, \textit{Komentarz aktualizowany do art. 39\textsuperscript{1} Kodeksu postępowania administracyjnego}, Lex el 2014.
\textsuperscript{14} Journal of Laws of 2014, item 183.
\textsuperscript{15} Moreover, the following provisions were amended: Article 33 § 2 of the CAP was given a new wording; Article 33 § 2a and Article 33 § 3a of the CAP were added; Article 50 § 1 was also given a new wording; Article 54 § 1(4); Article 63 § 3a and Article 63 § 5 of the CAP; Article 72 was also amended, i.e. Article 72 § 2 was added; Article 73 § 3 was given a new wording; Article 76a § 2a of the CAP was added; and Article 91 § 2 and Article 220 § 3-5 of the CAP were changed.
all, it is important to notice that before the amendment of the CAP, which entered into force on 11 May 2014, Article 39\(^1\) of the CAP stated that if a party applied for the service by electronic means or consented to having the service effected by such means, the administrative body was obliged to serve pleadings via electronic communication means. Nevertheless, if the party did not confirm the receipt of an electronic document within 7 days, the administrative body was obliged to serve the pleading in a traditional manner – i.e. against receipt by a postal operator, its employees or other authorised persons or bodies. In practice, service by a postal operator was chosen most commonly. If it was impossible to serve the document in a proper way (i.e. to the addressee personally), the postal operator tried to serve it in a substitutive manner, i.e. to an adult household member (if such a person was present and agreed to convey the pleading to the addressee); neighbour (if it was impossible to serve the document to the addressee as well as to an adult household member, the neighbour agreed to convey the document to the addressee, and an information stating where the mail addressed to them can be found was left in the addressee’s mail box); housekeeper (if it was impossible to serve the document to the addressee as well as to an adult household member and to a neighbour, the housekeeper agreed to convey the document to the addressee, and an information stating where the mail addressed to them can be found was left in the addressee’s mail box); or, in a situation in which despite such actions it was not possible to serve the document, the so-called service by issuance of two advice notes took place. It means that a notice that the mail was in a specific post office or in the office of a given county was left in the mail box of the addressee, the door of their apartment or in a visible place next to the entrance to their premises, together with information that it could be collected within 7 days from the day on which the notice was left (the so-called first advice note), and if the mail was not collected, the deliverer was obliged to leave the so-called second advice note with an information, that the mail could be collected within 14 days from the date of the first advice note. The mail was deemed delivered on the 14th day – counting from the day on which the first advice note was left – and the uncollected mail was returned to the sender, who entered it in the case files and treated it as delivered. In fact, in such a case, presumption of service took place, since the service brought the same legal effects that would occur if the mail was actually delivered to the addressee.\(^{16}\)

Starting from 11 May 2014, regulation regarding the service via electronic communication means has been amended and, despite appearances, the amendment was quite

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\(^{16}\) Such a service is called the traditional service.
serious. First of all, it has to be noticed that the obligation of the administrative body to serve a pleading via electronic communication means occurs at present in three situations. Pursuant to 39\(^1\) of the CAP, the obligation exists when a party (or other participant of the proceedings):

- firstly, submits a request in the form of an electronic document via electronic mailbox of the public administration body (Article 39\(^1\) § 1(1) of the CAP);

- secondly, requests the public administration body for such a service and provides the public administration body with an e-mail address (Article 39\(^1\) § 1(2) of the CAP);

- thirdly, consents for pleadings related to the proceedings to be serviced via the said means and provides the public administration body with an e-mail address (Article 39\(^1\) § 1(3) of the CAP).

Attention should be paid to the fact that in the last two cases the party, as well as the other participant of the proceedings, are obliged to provide the administrative body with their e-mail address to which the service is to be made. Under Article 63 § 3b of the CAP, if a request submitted in the form of an electronic document does not contain an electronic address, the administrative body assumes that appropriate address is the one from which the request in the form of an electronic document was sent. If, however, the request was not submitted in the form of an electronic document, but it contains the request mentioned in Article 39\(^1\) § 1(2) of the CAP (i.e. request for service in an electronic form), the service is made to the address mentioned in Article 63 § 2 of the CAP, i.e. in the traditional way. Nevertheless, in such a case, the administrative body is obliged to inform the first serviced pleading about the necessity to provide an e-mail address in the request for service via electronic communication means. It has to be mentioned that it obviously is possible to resign from the service via electronic communication means. Pursuant to Article 39\(^1\) § 1d of the CAP, every time a party (or other participant of the proceedings) resigns from such service, the public administration body is obliged to serve pleadings in a manner prescribed for the pleading, in the form other than the form of an electronic document, i.e. traditionally. However, it has to be highlighted that the revocation of consent to electronic service must be explicit, as it cannot be presumed\(^{17}\). The abovementioned regulation related to the obligation to provide an e-mail address, which determines the consequences of failure to provide it, has without a doubt an ordering character and in any case cannot be described as a revolutionary. The same cannot be said about Article 39\(^1\) § 1(1), which was introduced to the CAP. This amendment – although apparently not very significant – deserves to be considered as a very

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\(^{17}\) A. Wróbel, *Komentarz aktualizowany do art. 39\(^1\) Kodeksu postępowania administracyjnego*, Lex el 2014.
serious one and, moreover, far-reaching in terms of consequences. As it was already mentioned, the provision stipulates that the service is made via electronic communication means if a party (or other participant of proceedings) submits a request in the form of an electronic document via electronic mail box of the public administration body. Thus, in such a case, the administrative body becomes obliged to service documents via electronic communication means. The change is significant since, before the amendment, the obligation to serve pleadings via electronic communication means occurred when a party explicitly requested such a service or consented to it. In turn, today, it is enough for the party to submit a request via electronic communication means, i.e. to lodge a request in the form of an electronic document via an electronic mail box of the public administration body. The introduction of this amendment to the CAP provisions was revolutionary due to the fact that the declaration (on the intent to have pleadings served in an electronic form or on the consent to such a service) of the person submitting such a request is no longer necessary for the administrative body to be obliged to serve pleadings in an electronic form to the foregoing person. A party (or other participant of the proceedings) does not submit any declaration; it is enough for them to lodge a request in the manner specified in Article 39 § 1(1) to charge an administrative body with the aforementioned obligation. The regulation seems to indicate that traditional service will not be the rule in every case – if a party (or other participant of the proceedings) submits a request in the form of an electronic document via an electronic mail box of the public administration body, electronic service will be the rule. On the other hand, if a party (or other participant of the proceedings) does not want to have pleadings addressed to them serviced electronically, despite having lodged a request via electronic communication means, they must resign from such a service – which clearly results from Article 39 § 1(1d) of the CAP. Therefore, in order to charge an administrative body with an obligation to serve documents in a traditional manner, a declaration of resignation from the service via electronic communication means must be submitted to the administrative body.

Another new and surprising legal solution introduced by the legislator to the provisions of the Code of Administrative Proceedings is the presumption of electronic service. In accordance with the wording of provisions form before the amendment, which entered into force on 11 May 2014, an unsuccessful attempt to service a pleading electronically obliged the body to serve the pleading in a traditional way – under Article 46 § 3 of the CAP. The provision is still in force, although its meaning has changed after the last amendment. Pursuant to its current wording, “In the case of service via electronic communication means,
such a service is effective if the addressee confirms the receipt of the pleading in the manner specified in § 4(3).” However, pursuant to Article 46 § 4 of the CAP, “In order to serve a document in an electronic form, the public administration authority shall send to the electronic address of the addressee notice containing the following: 1) indication that the addressee may receive the document in electronic form, 2) indication of an electronic address where the addressee shall download the document and confirm its receipt; 3) instruction concerning the manner of receipt of the document, in particular the manner of identification under the indicated electronic address in the information and communication system of the public administration authority, and information concerning the requirement to sign the official confirmation of receipt, as described in Article 20a of the Act of 17 February 2005 on Computerisation of Entities Performing Public Tasks.” At the same time, the legislator stipulated in Article 46 § 5 of the CAP that “If a pleading in the form of an electronic document is not collected in the manner specified in § 4(3), the public administration body sends, after the lapse of 7 days from the day on which the information was send, another notice that the pleading may be collected.” It means that the legislator has provided for the so-called electronic advice note. Moreover, in the amended Article 46 § 6 of the CAP, the legislator highlighted that “If a pleading is not collected, the service is deemed to have been made after the lapse of fourteen days from the day on which the first notice was sent.” It has to be remembered that the wording of Article 46 § 6 of the CAP mentions the notice which is obtained, within the framework of a service system, e.g. ePUAP system, by the party (or other participant of the proceedings) to which the administrative body attempted to service a pleading within the said system. At the same time, it cannot be ignored that the legislator stipulates in Article 46 § 7 of the CAP that “Notices referred to in § 4 and 5 may be created and sent automatically by the information and communication system of the public administration body, and receipt of these notices is not confirmed.” What is more, pursuant to Article 46 § 8 of the CAP, “If a pleading in the form of an electronic document is deemed serviced under § 6, the public administration body shall allow the addressee of the pleading to access the content of the pleading in the form of an electronic document during at least 3 months from the day on which the pleading in the form of an electronic document was deemed served and the information about the day on which the pleading was deemed serviced and days on which notices referred to in § 4 and 5 were sent, contained in the body’s information and communication system. Therefore, when an administrative body considers a pleading to have been serviced, it becomes obliged to provide access to its content and to the information
about when the pleading was deemed serviced and when notices, i.e. the first and the second electronic advice notes, were sent for the period of at least 3 months after the day on which the pleading was deemed serviced. The information will be available in the information and communication system of the body. The said obligation of the administrative body seems to be illusory. The addressee of the pleading usually will not be aware that any proceeding used to take or is taking place with regard to them and that they were the addressee of any documents and, thus, they probably will not benefit from the possibility which must be provided to them by the body during at least 3 months, in conformity with Article 46 § 8 of the CAP. Therefore the provision is only apparently significant for the party – the addressee of pleadings – as the party will not benefit from the regulation, and even if they do, it will be only for informational purposes. Potentially, it may also be useful to prove that one of conditions for the restitution of term, mentioned in Article 58 § 2 of the CAP, is met.

There is no doubt that administrative bodies, bound by the rule of law principle, are obliged to act on the basis and within the law. Therefore, considering the foregoing regulation, they must – if a request is submitted by means of electronic communication means and the requester does not resign from electronic service – service a pleading via electronic communication means, and if it is not collected, they are obliged to send the second notice, the so-called second electronic advice note, referred to in Article 46 § 5 of the CAP. If the pleading is not collected after the lapse of 14 days, counting from the day on which the first notice was sent, it is deemed serviced on that day, i.e. after 14 days from the day on which the first notice was sent. Thus, the presumption of service takes place, and the indicated regulation excludes the possibility to deliver the pleading in a traditional manner, e.g. by mail. While analysing the presented regulation it is possible to wonder whether it does not threaten the right of the parties to actively participate in the proceedings and, in particular, in the principle of providing factual and legal information. In fact, it is hard to assume that parties (especially at the beginning of application of this regulation) know these principles. Moreover, usually, parties will expect to have pleadings serviced in a traditional manner anyway.

Another quite revolutionary solution is the regulation adopted by the legislator within Article 39¹ § 1a of the Code of Administrative Proceedings. The provision stipulates, that a “Public administration body may request a party or other participant of the proceedings to consent to have pleadings serviced in the form of an electronic document in other categories of individual cases disposed of by the body specified by the body” and, moreover, pursuant to
Article 391 § 1b of the CAP, a “Public administration body may request the consent referred to in § 1(3) and/or § 1a by sending the request via electronic communication means to the e-mail address of the party or the other participant of the proceedings”, and provisions of Article 46 § 3-8 of the CAP do not apply to the request (referred to in Article 391 § 1b of the CAP) (Article 391 § 1c of the CAP). The legislator allowed administrative bodies to request parties to consent to electronic service somewhat henceforth, i.e. in other categories of cases specified by the body. A body is to send the request for consent via electronic communication means, but the legislator did not provide for the applicability of Article 46 § 3-8 of the CAP.

It is also necessary to notice that, by amending general provisions regarding summons, i.e. Article 50 § 1 of the CAP (as well as Article 91 § 2 of the CAP, i.e. provision concerning summons to participate in a hearing), the legislator allowed both the summons and the summons to participate in a hearing to be serviced in the form of an electronic document. Article 50 § 1 of the CAP stipulates that “A public administration authority may summon persons to participate in the actions undertaken and to give explanations and testimony personally, through an attorney-in-fact, in writing or in the form of an electronic document, if it is necessary to decide on the matter or perform official actions.” In turn, Article 91 § 2 of the CAP states that “Parties, witnesses, experts and state and self-government organisational units, organisations and other persons summoned to participate in the hearing shall be summoned in writing or by an electronic document.” There is no doubt that, on the one hand, the regulation makes it easier for administrative bodies to proceed and observe to the principle of fast proceedings. On the other hand, it may lead to many abuses that will be far-reaching in terms of consequences. It is not possible to exclude the occurrence of a situation in which a potential party agrees, somewhat henceforth, to have pleadings serviced electronically for the purposes of categories of cases specified by a given body – i.e. replies positively to the body’s request presented under Article 391 § 1a of the CAP – without being aware of consequences of such a consent. And the consent will be effective in the future, i.e. with regard to all categories of cases specified by the body in the request, not only to the one taking place at that time. Therefore, the body will be able to institute subsequent proceedings – as long as they fall within the scope of categories specified in the request – and serve generated pleadings in an electronic form. At the same time, due to the presumption of electronic service introduced to the Code of Administrative Proceedings – Article 46 § 6 of the CAP, the body will be able to conduct and terminate proceedings, considering such a service to be effective. The regulation is dangerous, considering that a once given consent is effective until it is revoked,
and subsequent proceedings initiated *ex officio* may be instituted after several years. After such a long period, persons having given the consent will probably have forgotten that fact and will have stopped visiting the website of ePUAP or of a different information and telecommunication system on a regular basis. Of course, in the light of applicable legal provisions, the fact that a given person does not consult e.g. the ePUAP platform will not prevent the body to effectively serve documents in an electronic form, as the presumption of electronic service will apply. As a result, proceeding may be effectively initiated, conducted and terminated, and an administrative issued within its framework will be effective in legal transactions. For clear reasons, i.e. due to the lack of information, proceedings in the second instance as well as court and administrative proceedings will not take place. The party to the proceedings will probably learn about the proceedings as late as at the stage of administrative enforcement proceedings – when an enforcement authority will apply specific enforcement measures.

**Conclusions**

It seems that the amendments introduced by the legislator are currently too far-reaching, and their consequences for potential parties of the proceedings are too serious. At the same time, they were preceded by no wide-scale information actions. There is no doubt that service systems – including ePUAP – are still such a new, not to say exotic, solution in Poland that it is hard to accept the introduced solutions. Therefore, it cannot be assumed that an average Pole, who is not legally cautious and who does not perceive the importance and consequences of service – will constantly check the status of their mail box in such a system. Of course, in the abovementioned cases, the administrative body will be obliged to serve documents to the said mail box, and they will be effective despite the lack of their addressee’s response – the reason for that is the fact that the legislator provided for the presumption of electronic service.

It is hard to accept the amendments proposed and introduced to the provisions of the Code of Administrative Proceedings without objections. Although they make it possible for administrative bodies to observe the principle of fast proceedings and significantly reduce the costs of the latter, the bodes are actually able to conduct proceedings in accordance with the law without the parties (or other participants) being aware to the proceedings being conducted. There is no doubt that such legal solutions threaten e.g. the principle of building confidence in state authorities (stipulated in Article 8 of the CAP); principle of providing parties with the right to actively participate in every stage of proceedings (referred to in
Article 10 of the CAP); as well as significantly weaken the *ignorantia iuris non nocet* principle with regard to administrative law. Thus, although actions undertaken by administrative bodies in the indicated cases infringe general principles related to administrative proceedings, they are consistent with provisions regulating electronic service, and the fact is hard to accept. It is possible to try to explain that the indicated specific provisions regulating the rules related to electronic service are exceptions from general rules. However, it is impossible to state in the name of what specific and identifiable good they were introduced. What good could be more important than the rights protected by provisions regulating general principles of administrative proceedings.

To conclude the considerations, it an a little bit tricky question could be posed: may an administrative body serve a document by e-mail? The analysis of exclusively Article 39\(^1\) of the CAP is not sufficient to answer it. Although Article 39\(^1\) of the CAP mentions the e-mail address to which a body shall serve documents via electronic communication means, but within the meaning of Article 2(5) of the Act of 18 July 2002 on Rendering Electronic Services\(^{18}\). However, the ARES defines both the electronic communication means and the e-mail address. It has to be emphasised that both in the case of definition of electronic communication means and of definition of e-mail address, electronic mail is mentioned as referent example. Therefore, while analysing Article 39\(^1\) of the CAP in conjunction with Article 2(5) and Article 2(1) of the ARES, it is possible to conclude that an administrative body may serve documents via electronic communication means. However, such a conclusion is wrong. In fact, it has to be noticed that Article 46 § 4 of the CAP specifically describes activities which must be conducted by an administrative body when the latter serves a document via electronic communication means. That, in turn, leads to a conclusion that an administrative body servicing a document via electronic communication means is obliged to serve it within the framework of an information and communication system – such as ePUAP, SEKAP, or similar, e.g. a so-called domain system.

The analysis of legal solutions introduced by the legislator gives rise to many doubts and objections. They threaten too much general principles of administrative proceedings and, therefore, are detrimental to interests of parties to the proceedings, as they considerably weaken the parties’ procedural position. Moreover, introduction of the said provisions was not preceded by any social campaign aiming to inform the society. Thus, they are hard to accept.

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\(^{18}\) Consolidated text, Journal of Laws of 2013, item 1422. Hereinafter referred to as ARES.
Abstract
Service is an important substantive technical activity, as it produces legal effects through facts. Within the framework of the latest amendment of provisions of the Code of Administrative Proceedings, significant changes were introduced in the domain of service via electronic communication means. It is a novelty that the mere submission of a request via electronic communication means charges an administrative body with the obligation of service via electronic communication means. Another novelty was the introduction of the institution of electronic service. In the chapter, it is also indicated that computerisation of all activities may infringe general principles of administrative proceedings and interests of parties to the proceedings.

Key words:
administrative proceedings, service, service via electronic communication means, presumption of electronic service
Mateusz Karolak
Faculty of Law and Administration, University of Lodz
Department of European Economic Law

Mateusz Karolak Legal aspects of protection of intellectual property assets within the framework of the “open innovation” innovative solution management model

INTRODUCTION

An analysis of experiences of highly developed countries makes it possible to formulate a general conclusion that the cooperation of science and economy is related to measurable advantages for both the cooperating partners and the information society which benefits from the results of such a collaboration. Contacts between business entities and research institutions are usually established through the use of legal instruments allowing for the commercialisation of research results. However, it is important to notice that the cooperation is not limited only to a simple and selective use of outcomes of scientists’ work for the purpose of development of generally promoted entrepreneurship. In fact, such a cooperation must consist also in submission by representatives of the business sector of problems which require to be solved and, at the same time, constitute an incentive for researchers to make intellectual effort within the limits of their competence. Only by ensuring the possibility to use research results in practice is it possible to encourage entrepreneurs to collaborate with the academia. As for scientists, it allows them to verify the effectiveness of their intellectual effort.

At the same time, among entrepreneurs representing the sector of small and medium enterprises (hereinafter referred to as the “SMEs”) in the region of Lodz, the use of ICT technologies in becoming more and more common, in particular as far as information and communication services for customer and contractor service are concerned¹. The use of ICT technologies in the SME sector should have a positive impact on the development of the information society, by facilitating and optimising the flow of information and ideas both between enterprises and between enterprises and research centres. In reality, however, the flow of information is limited due to a low level of social trust and the lack of elaborated partnership model in mutual relations, which results in barriers to cooperation and to

¹ Regional Innovation Strategy for the Lodzkie Region LORIS 2030, p. 17.
undertaking mutually beneficial actions at the interface between the economy and science. A response to the observed barriers to communication and information flow is the adoption of the “open innovation” model in innovative solution management in the SME sector.

“OPEN INNOVATION” INNOVATIVE SOLUTION MANAGEMENT MODEL

Due to a worldwide career of the term “open innovation” and of the model of management of innovative solutions – intellectual property assets – in SME, which is based on it and which is often compared to the so-called “closed innovation” model, the meaning of the term should be explained and an attempt to situate it in the Polish legal reality should be made.

The concept of the intellectual property management model based on the “open innovation” was elaborated by American Scientist Henry Chesbrough, working at the University of California in Berkeley. According to the said concept referring to the SME business environment, small and medium enterprises do not have sufficient financial means and human resources to establish and maintain within their organisational and legal structure elaborate R&D departments aimed at creating new and innovative technical solutions or modifications of existing technical solutions, which could be applied in the industry and, as a result, generate profits for a given enterprise.

Assuming that the growth of an SME, like of every other enterprise, should be based on knowledge, if an SME does not have R&D facilities at its disposal, it is forced to purchase the knowledge from other companies. The purchase of knowledge from other enterprises requires, first of all, to invest a considerable amount of funds, e.g. to licence fees or repurchase of patents, and, second of all and most importantly, it does not guarantee that the acquired knowledge will be successfully implemented and accepted by the final beneficiary – consumer. Thus, the purchase of knowledge from another enterprise is not related to any guarantee of future profits.

The “open innovation” knowledge management model also does not provide such a guarantee, but it significantly decreases the risk related to the implementation of new

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3 Open Innovation and Intellectual Property Rights – The Two-edged Sword, B. H. Hall, the article available in the electronic version at: http://elsa.berkeley.edu/~bhhall/papers/BHH09_IPR_openinnovation.pdf (access: 5.08.2014 r.).
4 The Era of Open Innovation, H. W. Chesbrough, the article available in the electronic version at: http://sloanreview.mit.edu/article/the-era-of-open-innovation/ (access: 4.08.2014).
solutions knowledge-based in an enterprise, since the risk is divided among many business entities. In simple terms, the intellectual property management model which is at present most commonly used by enterprises consists in achieving competitive advantage through obtaining protection of elaborated technical solutions. This protection model provides its beneficiary with exclusive rights to the technological solution elaborated by the entrepreneur. Thus, the entrepreneur who has obtained an exclusive right to a given technical solution may at their full discretion decide on the future of the solution. In particular, they may decide not to disclose the solution outside the enterprise and to allow for its modifications aimed to adjust it to the needs of the market and of the information society. At the expense of the development of knowledge concerning a given solution, they obtain an advantage in the market, since they hinder or prevent other entrepreneurs or participants of the market from using the elaborated solution.

The “open innovation” concept offers a different approach, encouraging enterprises to share individually elaborated knowledge among themselves in order to adjust it to the needs of the market and use, while maintaining mutual gains. Nevertheless, it must be highlighted that the “open innovation” idea has nothing in common with the “open source” concept. The “open source” idea assumes a free-of-charge sharing of elaborated solutions only on the condition that an entity which uses the solution in order to modify it also shares the modified solution free of charge. In turn, the “open innovation” model, although it does not negate the necessity of protection of intellectual property, it shows that, in the era of modern technologies, inhibiting access to elaborated technical solutions, maintaining large R&D departments and conducting expensive litigations regarding patent protection is a waste of time, money and human resources, which could be used to maximise profits obtained thanks to the cooperation related to sharing knowledge with other entrepreneurs⁵.

In centre of the foregoing deliberations is the concept of knowledge, and actually its carrier in the form of intangible goods, as well as the question of their appropriate legal protection. It has to be highlighted that the use of the “open innovation” model in the context of intellectual property goods management in an enterprise does not exclude the necessity to obtain protection provided for by the industrial property law or to use protection based on provisions regulating trade secret.

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PROTECTION OF INTELLECTUAL ASSETS

Effects of the intellectual work of man constitute intangible goods. And the concept of intangible good constitutes the focus of intellectual property law. At the same time, the notion of intangible good is opposed to the notion of things, i.e. such material parts of the nature that, in economic transactions, may be treated as independent goods. As opposed to the concept of “thing”, intangible good represents certain intangible values which, if it constitutes an outcome of intellectual work of man, should be protected due to their aesthetic, practical or useful qualities. The intangible character of the aforementioned goods means that they do not occur in the surrounding reality as physical objects which can be seen. They exist in addition to material goods, i.e. things which are only a substratum allowing to learn about them.

Among intangible goods constituting an outcome of intellectual activity of man, it is possible to distinguish works which are subject to copyright, as well as solutions and labels, which are the subject of the industrial property law.

A work is defined as a manifestation of creative activity of man, of individual character and specified in any manner. As for the term of solution, it covers inventions and other categories determined in provisions of law. However, while works, as intangible goods, are legally protected regardless of their purpose or value, solutions – and especially inventions – obtain protection as intangible goods only after meeting an additional condition – presenting a capacity of industrial use. Moreover, differences between the aforementioned intangible goods are visible in the case of comparison of the subject of their protection. As far as works are concerned, the law protects their expression. In the case of solutions, the protected good is the idea comprised in the manner of their usage.

Both works and solutions, as intangible goods, present a certain monetary value and provide benefits to the entity authorised to exercise rights related to them. The intangible character of the presented goods makes it impossible to physically protect this asset. The lack of possibility to protect an intangible good in a physical manner is accompanied with the ease of other persons to use the good, including the ease to copy and process it. At the same time, creation of an intangible good, such as a work or a solution, is related to considerable financial and intellectual outlays, while costs of using, copying or implementing these goods

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are much lower\textsuperscript{12}. In this context, it is a problem to ensure effective legal protection to the entity which used its own efforts and resources to create a given intangible good.

Efficient protection may be guaranteed by legal instruments provided for within the framework of provisions of intellectual property law. The Protection is based on the approach putting an emphasis on economic consequences, according to which the intellectual property law is to constitute an incentive for authors and inventors to further creation. The aim of the intellectual property law, which provides authorised entities with exclusive rights to use the object of protection, which in turn allows to gain profits, is also to provide the information society with goods necessary for further progress. That is the reason why legal solutions regarding the protection of intangible goods, adopted also in Poland, are based on the ownership right. Additionally, these rights are of pecuniary nature and occur on the basis of an administrative decision of a state body.

The exclusive character of the described rights means that the authorised entity is provided with a specified scope of monopoly, which includes the right to exclusive use for profit or for professional purposes of the protected good\textsuperscript{13}. The absolute character of industrial property rights makes it possible to effectively exercise the rights with regard to goods constituting the object of the monopoly towards all other participants of legal transactions. Third persons cannot enter the sphere of rights provided for within the monopoly attributed to the authorised entity, subject to exceptions included in the law. However, the fact that intellectual property rights constitute property indicates that they may be effectively disposed of.

**PROTECTION OF INTELLECTUAL PROPERTY ASSETS UNDER POLISH LAW**

In Poland, the concept of protection of intangible goods is implemented on the basis of four Acts:

1. Act of 23 April 1964 – Civil Code (Journal of Laws of 1964, No. 16, item 93);
2. Copyright and Related Rights Act of 4 February 1994, (Journal of Laws of 2006, No. 90, item 631, as amended);
3. Act of 30 June 2000 – Industrial Property Law (Journal of Laws of 2003, No. 119, item 1117, as amended);


Provisions of the Copyright and Related Rights Act protect any creative, artistic and scientific activity which may be significantly distinguished from other existing achievements. The provisions of the foregoing Act protect both moral rights of the author, i.e. the person who created the work to which copyrights apply, and the work itself against violations made by other entities. The protection provided under the copyright law is granted to the author form the moment of the creation of a given work, regardless of the completion of any formalities.

The object of protection under industrial property rights are solutions of technical nature. The said solutions are goods the role and significance of which reveal in the broadly understood industry and which additionally constitute a result of intellectual effort of man. Considering the rapid development of technology, the law does not define particular categories of solutions, but only indicates conditions which must be met by a solution in order for it to benefit from legal protection. One if the rights concerning industrial property goods is a patent, the construction of which is based on the civil law rights. It ensures legal protection of inventions, which are understood as technical solutions which do not clearly result form the current knowledge and which are usable. Polish provisions regulating industrial property issues do not contain any definition of invention. In turn, they indicate features which should be displayed by every invention so that it may be protected by a patent. These features are called conditions for patentability, and their sum is the capacity of a given invention to be subject to a patent\(^\text{14}\). Patentability is displayed by all inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application.

In order to state whether an invention to be patented is of technical character, it is necessary to assess whether it may be classified within the framework of any field of technology. The “technology” should generally be understood as all methods and ways of influencing the matter, aimed to satisfy individual or collective human needs\(^\text{15}\).

Another condition for patentability is an inventive step or level, defined also as a synonym of the term “non-evidence”. In order to meet the foregoing condition, an invention


must not clearly result from the current state of technology, considering the knowledge and skills of an average researcher or engineer. The inventive step condition means also that an invention must solve a problem of technical nature.

The last conditions refers to industrial application, i.e. the possibility to use an invention in a technical way in any industrial activity. The industrial applicability condition is met when an invention guarantees the reproducibility of results and is useful from the perspective of any domain of practical activity of man.

Moreover, it is necessary to emphasise the requirement of novelty of an invention. The novelty is defined as such a feature of an invention thanks to which the latter is not a part of the previous (i.e. up to the moment of “occurrence” of the invention) state of technology. At the same time, the state of technology should be defined on a global scale. Thus, it is impossible to obtain a patent if a given invention has already been somehow revealed.

The patent for invention itself, as a subjective right, enacts a **legal monopoly for the rightholder to use the solution being the subject of a given invention**\(^{16}\). Characteristic features of patents include a legally specified scope, which is determined by their duration, territory of provided protection, objective scope of protection and indications of manners of using a given invention. In addition to the foregoing features, a patent – as a construction of subjective right – may be distinguished also with absolute efficiency, proprietary and formal character. The absolute nature of a subjective right reveals at the moment of infringement of a patent, i.e. an illegal encroaching of the scope of the monopoly attributed to the rightholder which entails certain legal sanctions.

The object of protection under industrial property rights are also intangible goods of market and marketing character, including trademarks and industrial designs. Like in the case of technical solutions, in order to obtain protection under industrial property rights, the said intangible goods must meet conditions specified by the law. Inventions, trademarks and industrial designs are subjected to protection after the conduct of appropriate procedure (e.g. patent procedure).

The protection under industrial property rights occurs pursuant to an administrative decision issued in Poland by a central administrative body – the Patent Office of the Republic of Poland – or by an competent international office or body after the conduct of a complex procedure and payment by the applicant of an appropriate administration fee.

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\(^{16}\) W. Kotarba, *Ochrona własności przemysłowej w gospodarce polskiej*, Warsaw 2000, p. 64.
Copyright law and industrial property rights do not constitute one branch of law within the framework of which an entrepreneurs may seek for their interests to be protected. The Polish legislator adopted a model of cumulative protection of intangible goods. As a result, a situation in which one intangible good is protected under copyright, under industrial property right and under regulations concerning unfair competition, e.g. in terms of trade secret, is thus possible. Moreover, with regard to the scope which is not protected by any of the aforementioned acts, protection should be searched for under the Civil Code.

INTELLECTUAL PROPERTY MANAGEMENT MODELS IN THE SME SECTOR
The foregoing considerations explain the rules for intangible goods protection adopted within the Polish legislation and constitute an introduction to the analysis of the way of managing intellectual property in an enterprise on the basis of the “open innovation” model, compared to the commonly used “closed innovation” model.

The latter, using the construction of rights protecting intangible goods based on the right of property and of monopoly to use the results of one’s intellectual activity, is not adjusted to the modern, dynamically developing market which forces the introduction of newer and newer solutions based on changing preferences of consumers. In order to base one’s innovation management system on the “closed innovation” model with the aim of obtaining a competitive advantage according to the “first come, first served” principle, it is necessary to invest significant financial means and human resources. It is the only way to use the knowledge of those people to elaborate new solutions. At the same time, due to the engagement of those means and resources, the entrepreneur does not want to share the elaborated knowledge with other entities operating in the market, even if the knowledge is temporarily not practically used in a way allowing for profit maximisation. Under legal instruments provided to protect intangible goods, the entrepreneur is authorised to hide such knowledge for a defined period and to make it inaccessible for other enterprises.

Consequences of such a behaviour of the entrepreneur impinge directly on consumers, who do not obtain a better product due to the fear of the entrepreneur possessing an innovative solution of the actions of competitors, as after having obtained the knowledge of the innovative entrepreneur the competitors could use it in the market without having to incur high costs of its elaboration. However, it is not the construction of intellectual property rights which provide entrepreneurs with the exclusive right to use the effects of their or their employees’ intellectual work, including the monopoly to decide on leaving the innovation
unrevealed to the detriment of consumers that is to blame, but the lack of trust to other enterprises operating in the market. They are considered as competitors, not as potential trading partners.

According to the objectives of the “closed innovation” model, an enterprise should operate alone in the market and concentrate only on making profits. To this end, an entrepreneur should individually search for and hire the most talented employees and prevent competitors from taking over the employees by providing the latter with high remuneration. In order to be able to pay high remuneration to the employees, it is necessary for the enterprise to generate considerable income. The income may be obtained only when the enterprise is the most competitive in the market, i.e. offers better products for a lower price. To make it possible, the enterprise must always have the most current knowledge at its disposal and, based on that knowledge, place newer and newer innovative solution on the market before its competitors. However, a simpler solution is to obtain protection of elaborated innovative solutions and, with the use of the monopoly received by these means, maintain the elaborated knowledge and solutions within the enterprise, preventing competitors from the possibility to use the knowledge and the solutions. It allows to generate the same profits without having to market a new product and, at the same times, makes it harder of impossible for other entrepreneurs to conduct R&D with regard to the product.

The “open innovation” model is a response to imperfections of the “closed innovation” model, allowing at the same time to maintain the construction of regulations protecting intellectual property by means of property right and legal monopoly to use elaborated innovative solutions. However, contrarily to the “closed innovation” model, the “open innovation” model is founded principally on trust as a basic element of success in the market and establishment of cooperation with trading partners. In fact, cooperation with trading partners constitutes the central notion of the “open innovation” model. For example, within the framework of the cooperation, trading partners exchange their knowledge concerning a given product and provide each other with licenses to use the possessed patents in order to modify the product and, on the basis of a jointly elaborated solution, to sell it in the market for the benefit of both partners. Within the framework of the “open innovation” model, two entrepreneurs do not need to engage individually considerable financial means and human resources in order to obtain the same solution – an innovative product. However, at the expense of unsure higher profits and competitive advantage, they establish cooperation with
the aim of elaborating an innovative product with the use of jointly possessed knowledge and in order to jointly benefit from the collaboration.

The aforementioned model allows to invest saved funds in other actions determining the competitiveness of a given enterprise. At the same time, it makes it possible to make profits thanks to the elaborated knowledge, which was not one of the strengths of the “closed innovation” model. In the “open innovation” model, the elaborated technical solutions which, at a given stage of development, are not needed by a given entrepreneur to be used in practice and which, in the “closed innovation” model, had to remain unrevealed should be shared with other entities operating in the market in exchange for a licence fee or share in profits made thanks to the use of a given solution by these entities, the latter having an idea of industrial application of the solution, or in exchange for sharing the modified solution elaborated on the basis of knowledge provided by the first entrepreneur for further modification and sharing.

It must be highlighted that the choice of the SME intellectual property management model does not influence the validity of legal protection of the property under applicable provisions. Intangible goods, which are often worth more than tangible goods, should be protected both within the framework of the “closed innovation” model and, above all, of the “open innovation” model. The latter requires even more emphasis to be put on the legal protection of intellectual property under concluded agreements or licence agreements, which regulate principles of cooperation between at least two enterprises willing to share their knowledge and, thus, to make additional profits.

CONCLUSION

The choice of an intellectual property management model in the SME sector is not a legal problem but only a question of choice of an effective model of conducting business activity focused on knowledge and its use in the information society, i.e. a society open to innovation. While implementing business solutions implied by the “open innovation” model, an entrepreneur should still use instruments of legal protection of their intellectual resources in the form of know-how, inventions or industrial designs under solutions provided for by the provisions of intellectual property law. As for intellectual resources which temporarily cannot be used in practice by a given enterprise, they should be made available to other entities operating in the market under licence agreements, cooperation agreements or consortium agreements.
At the same time, considering the experiences of highly developed countries, practices should be elaborated with the participation of the national regulator with the aim to optimise the collaboration between academia and business. The practices should take into account factors which favour the strengthening of contact between scientific centres and enterprises, such as regulatory environment supporting the cooperation of the two milieus, precise regulation of the protection and management of intellectual property, creation of an incentive scheme addressed to researchers conducting studies on issues the solution of which could be applied in practice, creation of organisational units attached to scientific centres which would maintain contact with entrepreneurs, identify their needs, find solutions through commercialisation of scientific research results and manage intellectual property of researchers\textsuperscript{17}.

Taking the foregoing factors into consideration accompanied by building social trust both between business entities from the SME sector and between those entities and scientific units, as well as the use of innovation management model based on the “open innovation” methodology, will contribute to the development of the information society.

**LITERATURE**

1. Regional Innovation Strategy for the Lodzkie Region LORIS 2030, p. 17.

ABSTRACT

The article concerns the question of legal protection of intellectual property within the framework of the “open innovation” model of management of innovative solutions in the SME sector. The intellectual property management model founded of the “open innovation” concept seems to be a beneficial solution for entrepreneurs not having sufficient funds for research and development.

The aim of the present paper is to explain the notion of intellectual property and its significance for the development of SMEs, as well as to characterise instruments for legal protection of the property applicable in Poland. A detailed analysis of provisions protecting innovative solutions makes it possible to state that entrepreneur’s choice of the “open innovation” model as a way to manage intellectual property in the enterprise may be favourable to the development of the knowledge-based society.

Key words:
“open innovation”, intellectual property, innovation management, society.