

PERSPECTIVES OF INFORMATION MARKET DEVELOPMENT IN POLAND

Introduction

Information and information systems have always played an important role in social, political and economic processes. Information market research allows better understanding and explanation of mechanisms of socio-economic systems.

In modern economies, the information belongs to the basic economic resources. Information market is the subject of research done by scientists from many disciplines (economists, sociologists). From an economic point of view of information market (market of information) is treated as a specific market in which information (as product or service) is exchanged. Information becomes a commodity when it is traded on the market.

General rules of markets of goods and services also apply to information market, but this market has its specific features. The identification and analysis of them requires the usage of appropriate methods and research tools.

1. The nature of information market

Defining the market in economic science, although very varied³⁶, usually amounts to finding that the market is a collection of interchangeable relations taking place between the participants (actors) of exchange process. In broader meaning, the market presents itself as a overall purchase - sale transactions and the conditions, under which they run. Market means the collection of all buyers and sellers, whose decisions are mutually interdependent and they shape supply and demand, as well determine the

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³⁶ See: W.Wrzošek, *Funkcjonowanie rynku*, PWE, Warszawa 2002, p. 13-15; *Analiza rynku*, pr. zb. pod red. H.Mruka, PWE, Warszawa 2003, p.11-12; *Elementarne zagadnienia ekonomii*, pod red. nauk. R. Milewskiego, Wydawnictwo Naukowe PWN, Warszawa 2003; *Badania rynku – metody zastosowania*, pr. zb. pod red. Z.Kędzior, PWE, Warszawa 2005, p. 9-16; T.Kramer, *Podstawy marketingu*, PWE, Warszawa 1998, p. 30; D.R. Kamerschen, R.B. MacKenzie, C.Nardinelli, *Ekonomia*, Fundacja Gospodarcza NSZZ „Solidarność”, Gdańsk 1992, p. 4.

price level. Market is defined also as the process, in which buyers and sellers determine what they want to sell or buy and on what terms. The explanation of the nature of the market depends largely on the purpose for which it serves.

Relatively recently, information market has become the subject of research. This is due to the tremendous interest in information, information systems and processes, as well as information economy and society. In the literature, more and more often it is written about the end of the industrial era and the beginning of a new era, based on the information (information age), which is a symptom of the transition from industrial society to information society³⁷.

In the literature it is difficult to find a single, compact and universally accepted definition of information market. In publications of English-speaking authors, people, who use it as an instrument for improving their market position, sometimes refer information market to the place for exchange of information³⁸. Independent content (information) providers and users exchange information in places of sale of other goods and services³⁹. Exchange of information is increasingly happening with the use of new technologies, which significantly reduce the costs of preparing and distributing information. Information market is becoming increasingly competitive market, where many suppliers offer similar products, thereby losing the ability to impact on prices⁴⁰.

The specificity of the information market is such, that information - the subject of an exchange on the market - becomes a commodity only, when it is the subject of market transactions (when it appears on the market in the form of supply and has a price)⁴¹. The subject of trading can be information as⁴²:

- product, which is a collection of information recorded on a separate physical media (e.g. copy books, newspapers, CDs, cassette recording),
- information service, which consists of providing the information to the extent and form adapted to individual requirements of the user, at his request (e.g., legal advice, bookkeeping by a specialized company, the

³⁷ See: J.Freiden, R.Goldsmith, S.Takacs, Ch.Hofacker, Marketing Intelligence and Planning, MCB UP Limited, Bradford 1998, vol.16, p. 210

³⁸ See: McGee, L.Prusak, Managing Information Strategically, Jon Wiley and Sons, Nwe York 1993, p.12 i 58

³⁹ See: A.J.Simard, Global Disaster information network [w:] UN World Conference on Disaster, Kobe 2005.

⁴⁰ C.Shapiro, H.R. Varian, Information Rules, Harvard Business School Press, Watertown 1999, p.22.

⁴¹ J. Macias, Nowa rola informacji w społeczeństwie informacyjnym [w:] Przegląd organizacji 2008, nr 2, p.11.

⁴² J.Oleński, Ekonomia informacji – metody, PWE, Warszawa 2003, p.204.

training carried out on a commercial basis or a professional conference, broadcast radio, television, etc.),

- access to information resources - as a particular form of information service, which differs from the other services that the recipient does not receive exact information, but obtains the right of access to information (e.g. subscription cable television, access to information resources available on the Internet, access to specialized databases). This form is specific only for information - on other goods and services markets there are not its equivalents.

Summing up, the notion “information market” can be understood as the sum of interchangeable relationships between the disposers of information (producing/selling/providing information), who represent the supply and notifying buyers reporting the needs for certain information (with the appropriate financial resources), who are representing the demand.

The characteristics of information market include⁴³:

- flexibility (meaning the ease of individualization and personalization of information products,
- globalization (meaning that disposers of information and information users act on cross-border, global market,
- normalization in global scale of information products, which is a prerequisite of economic and technological efficiency of processes and information systems,
- the acquisition by international organizations of a political or economic character regulatory functions, which in the past were the domain of individual states.

On the information market supply is created by disposers of information (also known as autonomous providers - independent content providers). These entities are harvesting, gathering, processing and providing information; therefore they are various types of organizations operating in the country and/or abroad:

- administrative and market institutions (government and governmental agencies, NGOs, chambers of commerce and trade associations, foundations, banks, stock exchanges, market research agencies, consulting agencies, etc.);
- institutes and R&D institutions;
- the media.

The actors on the demand side of the information market consist of all information demand notify bodies (customers, users of information), taking independent decisions, including:

- consumers and their households;
- farms;

⁴³ J.Oleński, *Ekonomika informacji – metody*, PWE, Warszawa 2003, p.206

- manufacturing, trade and services companies;
- market institutions, administrative institutions and local government;
- economic and social organizations of a national and international scope;
- the State and its organs.

A characteristic feature of the information market is, that entities representing the supply side very often the look for information, thereby increasing the demand for information on the market.

2. Methodological assumptions

Perspectives of information market development in Poland in 2015 and stimulants and anti-stimulants of this development were recognized by the method of expert assessments⁴⁴.

Forecast of the direction and magnitude of changes on the information market in Poland was made according to objective criteria, by testing hypotheses and theorems, and subjective assessments, or judgments and opinions based on intuition and experience. The forecast was formulated on the base of expert assessments. It is recognized, that knowledge and experience of experts in the field of information may provide a basis for predicting the future.

The selecting criteria for experts were: their competences, knowledge and experience in the study area. Experts were representatives of the scientific-research area, representatives of the administrative and market institutions, general economic and specialized press journalists, as well as business managers. Research using the method of expert's opinion was conducted in May and June 2010. The following research hypotheses were formulated:

- The number of entities on the supply side of information market in Poland will increase by 2015.
- The development of technology is an important factor in the development of the information market by 2015.

⁴⁴ Research were carried out in 2010 in the frame of the third stage of the statutory research of Department of Market and Consumption (University of Economics in Katowice, Poland) titled "Information market in Upper Silesia region". In the first stage of research (year 2008) the aim was to identify the structure of the present - market information. In the first stage of the research secondary sources of information were used. A review of literature (published in Polish, English, French and German between 2001 and 2008 year) using content analysis was done. In this stage the pilot research in enterprises was also carried out. The aim of the second stage of research (year 2009) was to analyze the behavior of players on the information market in Silesia. Behavior of market actors in the market of information have been identified through research conducted directly among households, businesses and organizations offering information (used techniques: distributed questionnaires, personal interviews, in-depth interviews).

- In 2015 the information offered on the market will be offered primarily in electronic form.
- In 2015 there will be an improvement of information infrastructure in Poland (the increase access to information, increase of Internet skills of businesses and households).
- Households and businesses by 2015 will devote more resources to acquiring information.

In research 36 experts took part. They were representatives of science, media and research agencies. The post sent an expert questionnaire to 436 potential experts (manoeuvrability of the questionnaire was 8.2%). Experts forecasting changes in the market information were mainly represented by science (19 persons). In the sample there were also 11 representatives of research agencies and 4 representatives of the media. Most experts have 11-20 year experience in the industry. Most experts assessed their competence in the outlook for Poland's information market as a high or very high.

3. Information market in Poland in 2015 year – research results

In 2010 year an attempt to look ahead and predict how changes in environment and behaviour of actors in the information market in Poland in 2015 year will look like. The aim of research was primarily to identify the development prospects of the information market as well as stimulants and anti-stimulants of this development. Research conducted by the experts' opinion method enabled to make information market forecast for Poland in 2015 including:

- Opportunities and barriers for the development of businesses offering information;
- Strengths and weaknesses of the providers of information;
- Changes on the market of information (offer and the demand for information);
- Innovations on information market.

In the activity of each market entity, environment plays the specific role. Environmental conditions may create both opportunities and barriers to development. Experts predicted, how the environment would affect the functioning of these entities in Poland. The research results indicate, that the opportunity for information providers in 2015 in Poland will be primarily connected with information and communication technology development and the incensement of international links, the processes of globalization and integration (Table 1). According to experts, strong competition between those, who need the information, as well as the grants from the European Union, will also be factors that help information providers. Among the opportunities for providers of information experts mentioned also increased access to information, increase in demand for information, the change the profile information needs, and development of on-line research.

The studies also made it possible to identify these factors in information environment, which will serve as barriers for information providers operations in Poland in 2015.

Experts predict that the main barriers to business providers of information in Poland will be linked to prices and costs of acquiring information (Table 2).

Table 1
Opportunities for information providers in Poland in 2015 - the experts' opinions (N = 33, number of responses)*

Specification	Number
The development of ICT, IT, Internet development, the development of technology to collect information by observing and recording, the modernization of the country in the field of IT	12
Increase in international relations, globalization, integration, development of international markets, increase the Polish role in the EU and the global economy, the location of Poland in Europe, international cooperation	12
Strong competition between operators in need of information, increasing number of market participants	6
EU grants, EU funds	5
Increase access to information, access to information at the international level, increasing access to global services paid	4
Increasing demand for information	4

**Responses given by at least 4 experts are covered*

According to experts, the price of information and information technology will increase, and increasing costs of research will result in rising prices of information services. Another factor limiting the functioning of the information providers will be related to strong competition between entities offering information (including foreign competition and price). Experts also predict, that the barrier for information providers there will be insufficient awareness and attitudes of managers to the importance of information for the operation, which may result in a low propensity to use information services, low interest in information market offer and low demand.

Table 2
Barriers for information providers in Poland in 2015 - the experts' opinions (N = 32, number of responses) *

Specification	Number
The increase in prices of information and information technology, increase in research costs, high prices of information services	8
Strong competition among those offering information, foreign competition, price competition	5
Mentality and awareness of managers and policy makers in the field of the importance of information	5
Differentiated access to information, poor information infrastructure	5

**Responses given by at least 5 experts are covered*

Besides factors of environment, for the functioning of providers of information resources at their disposal are very important. Therefore, the primary research attempted to identify the strengths and weaknesses of information providers. Experts predict that the strengths of information providers will be primarily a good team (human resources), highlighting their expertise, experience and professionalism (Table 3).

Table 3
Strengths of the information providers in Poland in 2015 - the experts' opinions (N = 29, number of responses)*

Specification	Number
Good human resources (skills, knowledge, experience, professionalism, integrity, creativity, innovation, dynamism)	15
The multiplicity of information sources used, the full range of information, much of the detail, a comprehensive offer of information	5
Low operational costs of information providers	4

**Responses given by at least 4 experts are covered*

Experts also suggest, that information providers will have comprehensive offer of information (providing information from multiple sources, the full range of information, detailed data). Experts also predict that the cost of providers of information will be low.

Experts have also attempted to determine the weaknesses of the information suppliers in Poland. (Table 4). Experts pointed primarily the weakness of the underlying technologies (low technologies, difficulties in access to information, poor access to technological innovations). Experts also believe that the offer of entities will be incomplete (incomplete databases, data integration low, narrow specialization). The weaknesses mentioned by experts were also related to the limitations of staff.

Table 4
Weaknesses of information providers in Poland in 2015 – experts' opinions (N = 25, number of responses) *

Specification	Number
The weakness of the underlying technologies, the difficulty of access to information, lack of technological capacity, poor access to technological innovations	5
Offering incomplete databases, limited scope of information offered, poor data integrity, narrow specialization, selection of information	5
Staff constraints, reduced teamwork (individualism), poor experience, lack of human resources, underdevelopment of human resources in the area of methods	4

**Responses given by at least 4 experts are covered*

In the study, an attempt to determine the specific characteristics of the information market in Poland in 2015 was made. The experts were asked to

comment on the statements regarding information market, which were produced by the investigators (Table 5).

Table 5
Information market in Poland in 2015 - the experts' opinions
(Number of responses)

Specification	Opinions*		
	Positive	Neutral	Negative
Increasing competition in the market of information will prompt information providers to innovate	33	2	1
The number of information providers will increase	31	3	2
Information will be offered primarily on electronic vehicles	31	4	1
The information infrastructure will improve (increased access to information and databases, increase in information society indicators)	30	3	3
Individualization of customer needs will bring changes in the offer of information providers	28	7	1
There will be rapid development of technology used for data acquisition and processing	28	6	2
Competition among operators offering information will increase	28	6	2
The importance of information available on the Internet will increase	27	2	7
Integration processes of information providers will increase	26	6	4
The amount of paid information will increase	26	6	4
The number of operators who specialize in advising information (selection, selection, assessment of the usefulness of the information) will increase	26	6	4
Companies will spend more money on acquiring information	23	10	3
The importance of research agencies on information market will increase	19	20	7

**Positive opinions result from a combination of response "totally agree" and "somewhat agree", and the negative opinions result from a combination of answers "rather disagree" and "completely disagree".*

The research results indicate that the majority of experts share the views on the specificity of the information market in 2015. According to most experts, increasing competition in the market of information will prompt suppliers to innovate. Information and data will be offered primarily on electronic vehicles. The information infrastructure will improve (there

will be an increased access to information and databases and higher information society indicators). The individualization of customer needs will bring changes in the offer in supply. Experts predict, that the rapid development of technology will be used for acquiring and processing information, and will increase competition between those offering information. The experts are more sceptical with regard to the growing importance of research agencies in the information market and with the fact that companies will spend more and more resources to acquiring information.

In view of the growing importance of information in electronic form, experts were asked to identify the share of information in printed and electronic shape on information market in Poland. Experts consistently predict that the share of information in the electronic version will be more than double to the share of information in the printed version.

The study also made an attempt to determine changes that will occur in obtaining information in 2015 (changes in the sources, methods and techniques for collecting information). Experts predict again the growing importance of the digitization of information (Table 6). They also predict the development of knowledge sources and methods and techniques of gathering information. They also point out the development of a mobile means of collecting information and passive forms of measurement (observation, recording). Experts expect the development of automated data collection and analysis of data in real time. According to experts, information providers will specialize in gathering the specific information (the focus on specific topics).

Table 6
Changes in obtaining the information in the perspective of 2015 -
the experts' opinions (N = 34, number of responses)*

Specification	Number
The growing importance of electronic information, information on the web, digitization of information gathering techniques, the growing importance of online research	13
Development of sources of knowledge, methods and techniques of acquiring information (precision, accuracy), the development of mobile means of acquiring information, developing a passive measurement (registration, observation), automatic data collection and analysis in real-time	9
The increase in orientation towards selectivity of information, increased specialization	3

**Responses given by at least 3 experts are covered*

The experts also predicted the changes in information providers' offer in 2015 (Table 7). Research results indicate that, in the future the offer (information) will be better adapted to the needs of customers. The scope of

offered information will also increase the range of information facilities will be more diverse. In addition, experts predict increasing importance of specialized studies (industry).

Table 7
Changes in the offer of information providers in 2015 - the experts' opinions (N = 34, number of responses)*

Specification	Number
Adapting to the needs, individualization, the opportunity to prepare information on any subject, offered to adapt it to the needs of those	11
Wider and more diverse offer, broader and deeper range of information offered, complexity of the offer	7
The growing importance of sector studies, industry specialization	5

**Responses given by at least 5 experts are covered*

In the study also an attempt to anticipate changes that will occur in the information infrastructure in 2015 was made (Table 8). Experts predict, that major changes will occur in developing new technologies, they foreseen emerging new media and the development of mobile media. They predict dissemination of wireless information industry and inventing a new phone features. Again they point the growing importance of information obtained electronically.

Table 8
Changes in the information infrastructure in 2015 – the experts' opinions (N = 28, number of responses)

Specification	Number
Development of new technologies, increased access to the Internet, the emergence of new media, the emergence of new mobile media, the expansion of new technologies of information delivery, tele-transmission, wireless information industry, new features of telephone	16
Increased role of information obtained electronically, the dominance of electronic sources (including open sources), the development of message in electronic form	5

**Responses given by at least 5 experts are covered*

Experts also tried to predict innovations, which will come to information market in the 2015 year (tab.9). Experts believe, that innovation in the market will be the increase of the importance of universities as providers of information (increasing importance of consultation points on Colleges and institutions for scientific research).

Table 9
Innovation in the information market in 2015 – the experts' opinions
(N = 29, number of responses)

Specification	Number
The growing importance of consultation points in universities, the rise of universities, the rise of institutions engaged in research	4
Reach collections of information, comprehensiveness of information, creation of central sites that offer comprehensive information and data warehouses	4
The increase in customization and personalization of information	3
Development of methods of registration, the development of passive measurement (smaller role of the interviewer)	3
The increased accessibility and relevance of information on-line	3

**Responses given by at least 3 experts are covered*

Experts also foresee the creation of rich sets of information, news and a central data warehouse. This process will be accompanied by the development of customization and personalization of media. According to experts, methods of registration (passive measurement) will also develop.

Conclusions

The research results indicate that most of the hypotheses regarding the information market in Poland in 2015 are confirmed. Information providers are expected to increase the supply side of the market and technology development will be an important factor in the development of information market. Improved information infrastructure will increase the degree households and businesses information access. The market will be dominated by information in electronic form, and this version of the information will be preferred by the market.

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SUMMARY

Information and information systems have always played an important role in social processes and in modern economies information has become a part of crucial economical resources. When the information is the subject of market transactions it becomes the “product” on the market. Information market is researched by scientists representing different fields (economists, sociologists). From economic point of view information market is treated as specified market, where the information is the subject of an exchange. The aim of the article is to present perspectives of market information development in Poland. Research using expert opinion method (heuristic evaluation) enabled the prognosis of information market in Poland in 2015 year including:

- Opportunities and threats for entities offering information on the market;
- Strengths and weaknesses of these entities;
- Changes on information market with respect to an information offer and demand for information;
- Innovations on information market.