

## Telecommunications services market in the light of the agency theory and the transaction cost theory under new institutional economics: case for Poland

Piotr Szkudlarek  
*University of Szczecin*  
*Poland*  
*e-mail: tatus@wneiz.pl*

**Abstract.** The main objective of the paper is to evaluate the telecommunications services market in Poland, focusing on its regulation in the context of the Agency Theory and the Transaction Cost Theory under New Institutional Economics (hereinafter NIE). In the following sections of the paper, selected aspects concerning institutional economics, particularly institutions are presented. Next, the key issues related to the Agency Theory and the Transaction Cost Theory under New Institutional Economics are described. The theories are a basis for the evaluation of the telecommunications services market in Poland shown in the final part of the paper.

The aim of the paper is to identify and analyse key aspects of regulation as a means of the state's influence on the economy.

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### INTRODUCTION

The 1990s witnessed a process of political and economic transformations in Poland. In the sphere of economy they concern mostly the increasing relevance of the market mechanism. At the same time, however, it is recognised that market is imperfect and the state may intervene in the market so as to reduce the negative effects of these imperfections. The state's interventionism takes, for instance, the form of sectoral regulation. Arguments in favour of adopting a regulatory policy in an economy include mostly potential market imperfections, both in macro- and microeconomic dimension. It is how the state can improve the efficiency of the market to serve broad public interest (Public Interest Theory, Stigler, 1972, Posner, 1974). This theory holds that regulation is supplied in response to the demand of the public for the correction of inefficient or inequitable market practices (Posner, 1974)

Such a situation concerns, in particular, the telecommunications services market. Market imperfection in this case refers to its monopolist structure, whose protection had been the objective of the economic policy until the early 1990s. Technological changes, however, and the above-mentioned political and economic transformation have forced major changes in this market. As a result, an important role in the functioning of the market is played by an independent regulatory institution – the Office of Electronic Communications

(hereinafter OEC), which shapes the formal institutional environment of this market by means of (mostly ex-ante) regulatory policy measures.

It should be mentioned, however, that the public interest theory has been widely criticised (Hantke-Domas, 2003). It is argued that although in theory regulation seeks protection and benefits for the entire society, in practice it is impossible to achieve it (Stigler, 1972), and it serves the interests of individual groups instead. It is also pointed out that the society is burdened with all the costs related to the introduction and execution of regulatory decisions. Furthermore, asymmetry of information is raised as an issue (Stiglitz, 1961, 2002, Akerlof, Spence, 1973). Companies subject to regulation are information monopolists, and they use this situation to their own advantage. It refers in particular to the level of costs underlying the pricing strategy. All these factors make it impossible to evaluate the efficiency of regulation in any market, including the telecommunications market, in a conclusive way (Laffont, Tirol, 2000, Vogelsang, Bridger, 1997, De Fraja, 1999, De Bijl, Peitz, 2003).

The main objective of the paper is to identify the key aspects concerning the functioning of the telecommunications services market in Poland in the light of the Agency Theory and the Transaction Cost Theory under New Institutional Economics. It is assumed that the problem of institutions in the telecommunications services market in Poland is one of the key factors determining its model, so their thorough exploration seems a justified and relevant topic for study.

## 1. INSTITUTIONS AND INSTITUTIONAL ECONOMICS

Unlike neoclassical economics, institutional economics uses different ways to describe and explain the functioning of markets. It assumes that market order which is supposed to lead to a state of perfect coordination, i.e. balance and Pareto efficiency, does not occur mechanically. It comes down to the assumption concerning limited rationality and opportunism of economic entities (Szapiel, 2009). Neoclassical Economic models become much less abstract. It is interesting that the problems addressed by institutional economics were already observed in the history, e.g. by A. Smith, but they were ignored by neoclassical economists as they required explicitly institutional analysis (North, 2005).

Under Institutional Economics an economic system is understood as a system of interrelated institutions and principles defining the space of behaviours of economic entities (Woźniak, 2005). It may be stated that institutions are certain creations of the social, political and economic life which affect, i.e. limit and/or stimulate the behaviours of individual entities. T. Veblen defines institutions as dominating ways of thinking about certain social relations, specific functions of individuals and the society; the way of living defined by all the institutions existing at a given moment of social development (Veblen, 1994). The emphasis is placed here on the framework shaping an individual's behaviour. J.R. Commons defines institutions as systems and principles of their functioning, from families and corporations to trade unions to economic associations to the state itself (Commons, 1931). According to D.C. North, in turn, institutions are rules of the game, limitations imposed to shape human cooperation (institutions are rules of the game, organisations are the players). As a result they create a structure of stimuli in the sphere of human exchange in the political, social and economic dimension (North, 1990). He distinguishes between the following types of institutions: formal – political, legal and economic principles and contracts, and informal – moral systems, habits, traditions, beliefs. For O.E. Williamson, institutional environment of the market is a certain 'public good' which plays an important part in creating the initial institutional order in the marketplace (Williamson, 1975). L.E. Davis and D.C. North (Davis, North, 1971), in turn, point to institutional environment which defines the rules of the game imposing limits on human behaviour. These rules may be either formal (e.g.

legal systems) or informal (such as social norms). Institutional environment has a direct impact on behaviour of all market players.

In the contemporary economy the functioning of the price mechanism is influenced by various types of institutional solutions. One of such solutions is public regulation, which is the main problem addressed in this paper. It may be defined as a certain institutional framework which aims to ensure government's control and supervision over participants of the business processes. Regulation implies that appropriate institutions established for this purpose need to make decisions concerning certain entities. In many sectors of the global economy, i.e. those socially useful, such as telecommunications, regulation is treated as an institution complementary to the "invisible hand of the market".

## 2. THE AGENCY THEORY AND THE TRANSACTION COST THEORY UNDER NEW INSTITUTIONAL ECONOMICS – KEY METHODOLOGICAL ISSUES

Similarly to traditional Institutional Economics, New Institutional Economics this school emphasises the distance between the Classical and Neoclassical Economics Theory (as employing "the Walrus view" of the economy and an over-simplified model, i.e. fully rational homo oeconomicus) on the one hand and the contemporary economic practice on the other. Whereas T. Veblen's criticism was radical and his followers' – more balanced although still clear, in the case of NIE the main point, according to O.E. Williamson, is to enrich rather than undermine the mainstream economics (Jarmołowicz, Woźniak-Jęchorek, 2009). Historical Institutional Economics is rejected, which is accepted by proponents of the traditional Institutional Economics. Under NIE it is also assumed that individuals and institutions are interrelated through feedback. O.E. Williamson characterises New Institutional Economics as "a boiling cauldron of ideas. Not only are there many institutional research programs in progress, but there are competing ideas within most of them" (Williamson, 2000). At the core of new institutional economics are the following issues: The Property Right Paradigm (H. Demsetz, 1967, A. A. Alchian, 1973), The Transaction Cost Theory (R.H. Coase 1937 and O.E. Williamson, 1979), The Public Choice Theory (J. M. Buchanan, 2003, G. Tullock, (1962) A. Downs, 1957, M. Olson 1965) and The Agency Theory (Fama, Jensen, 1983). Within the constraints of this study, the Agency Theory and the Transaction Cost Theory are only summarised briefly.

**Agency Theory.** Since the first-best solution cannot be arrived at in the economic reality, efforts are made so as to develop mechanisms which are the best imitation of the perfect competition – i.e. second-best solutions. Such an opportunity is provided by the public regulation promoting competition. It forms an agency relationship between the regulatory institution and entities subject to regulation. It is a situation when one entity is dependent on another, or in other words, one entity relies on the services provided by another in order to complete a task. Such an (explicit or implicit) contract implies delegation of authority from the principal to the agent (Ratajczak, 2007). There are two reasons for forming agency relationships. The first one is information asymmetry. It is assumed that the agent has more or better information about the tasks to be performed than the principal. Three aspects of information asymmetry are revealed here: moral hazard, adverse selection and a situation when the principal and agent both have the same information but it is unavailable to a third party, e.g. a court (Laffont, Martimort, 2002). Information asymmetry leads, in general, to a situation when the principal is unable to define the actual status quo or behaviour of the agent, based on the observable variables. The key issue is, therefore, for the principal (regulator) to develop an efficient incentive system, which would minimise the information advantage enjoyed by the operator, promote efficiency in business and offer an effective way to encourage companies to comply with the regulatory obligations.

The second reason behind the establishment of this relationship is the discrepancies between the agent's and principal's goal functions. In this case stimulation, i.e. proper incentives encouraging the agent to reveal the actual and true information, is of key significance. It would imply that the agent desists from manipulating the information and undertakes activities expected by the principal instead (Kraft, Ravis, 1998). In this light the agency problem comes down to defining an optimal contract defining the relationship between the principal and the agent. It is related, however, to certain costs, known in the literature as agency costs. They include, in particular, the following types:

- a) monitoring costs,
- b) costs borne by the agent to prove its reliability to the principal,
- c) costs incurred when the principal cannot induce the agent to act according to its goals,
- d) costs of lost opportunities (unreal) which denote the principal's loss of utility in relation to the differences between the interests of the agent and the principal.

Minimisation of these costs becomes a challenge which should promote efficiency in economic activity.

**Transaction Cost Theory.** Assuming that an economic system is a set of interrelated institutions which define the framework and principles of economic activity, K. Arrow's remark seems accurate that transactions costs are all the costs related to the functioning of an economic system (Williamson, 1998). In other words, transaction costs represent the part of the total costs of the socio-economic system which represents resources used in all types of transactions (Stankiewicz, 2012). It is assumed – although not unanimously (Klaes, 2000) – that transaction costs as a concept of costs related to collaboration and significance of institutions to the economy was first introduced by Ronald Coase. In his paper "The Nature of Firm" he indicated that it was essential to introduce a concept of "the costs of using the price mechanism, costs of carrying out the exchange transaction in the open market, or simply marketing costs (Coase, 1937). They have become known in the literature as transaction costs.

Transaction costs are an ambiguous and unquantifiable notion. It may refer to the costs of hierarchical management in a company or costs of transactions in the marketplace. Transaction costs also include political costs of transactions as well as costs of creating and maintaining institutional and financial infrastructure financed by the state budget. Transaction costs may also be broken down into ex ante costs incurred before the contract is closed and ex post costs which are incurred in relation to the transaction carried out (Williamson, 1998). This breakdown overlaps with the concepts of D.C. North, J.J. Wallis (North, Wallis 1986) who distinguish between quantifiable and unquantifiable costs. Classification of individual costs to either group is extremely difficult as it depends on whether the company is able to separate the costs directly related to an individual contract.

Among the costs of functioning of the market mechanism, incurred directly by the parties involved in a market exchange, other costs may be distinguished such as costs related to information, negotiation, standardisation, insurance, and enforcement of the terms and conditions set out in agreements. According to the new institutional economics, all these costs should be accounted for in their total amount in production costs, which include not only the costs of production factors but also the cost of acquiring information about the market and product, costs of protecting the market (including property rights) or the cost of executing agreements. The market would be an optimum solution if there were no market transaction costs. If transaction costs occur, it is always possible that the costs of negotiating contracts are higher than the gains obtained in the process of negotiation hence in such cases state regulation becomes a more efficient solution. It is expected that the improvement in the institutional environment should reduce total transaction costs (Hicks, 1935a, Coase, 1937, Alchian and Demsetz 1972).

The transaction cost theory is used in a variety of research fields, e.g. to describe the relationship between the provider and user, define the limits of the company's operations, analyse the structure of company's operations and to achieve various other objectives (Mueller, Aust, 2011). In spite of this, however, there are many researchers questioning this approach, criticising – among others – the insufficient operationalisation of this concept (Fischer, 1977). As a consequence, there is no standard approach to the measures of transaction costs since every researcher adapts this category to their own needs (Mueller, Aust, 2011).

### 3. TELECOMMUNICATIONS SERVICES MARKET IN POLAND – CASE STUDY IN THE LIGHT OF NEW INSTITUTIONAL ECONOMICS

Technological changes affecting the way people communicate, an increasing demand for telecommunication services and globalisation thereof as well as political changes have all forced the creation of a new institutional framework in the telecommunications market in Poland. During economic transformation emphasis was put on the role of sectoral regulation which is complementary to the horizontal regulation. It has become the domain of an independent regulatory institution – at the moment the President of the Office of Electronic Communications (hereinafter OEC). It is a “hard” and formal institution. The measures introduced by the regulator aim to develop a second-best solution, i.e. provide a stimulating framework for the telecommunications market – as close as possible to perfect competition. The Agency Theory and the Transaction Cost Theory are of particular usefulness in explaining institutional changes.

There are several aspects of the agency relationships which can be observed in the telecommunications services market in Poland. The study focuses on those between the President of OEC and operators. The contacts between the two parties are primarily of formal nature, with a single principal – regulator on the one hand, and multiple agents on the other. In the hierarchical structure a chain of procedural relationships is formed where the state's interests are converted into operators' activities. The major aim of the regulatory policy, i.e. providing a framework for competition, requires agreement between the interests of market leaders and new entrants in the context of consumers' and public interests. The legal regulations enable the President of OEC to achieve this objective, among others, through: defining appropriate markets in line with the recommendations of the European Commission, analysing them in the light of potential problems, identifying entrepreneurs being market leaders (which means that the market is not efficiently competitive), and imposing certain regulatory obligations. They are the key institutions of the regulatory policy affecting market efficiency (Szkudlarek, 2010). What is important, they are able to ensure adaptation efficiency, which is reflected in the flexible institutional structure that promotes development of the telecommunications market in response to technological development, consumers' needs and the EU policy. The agency relationships between the regulator and operators are burdened with information asymmetry, yet the principal is able to obtain the required information, among others, through audits, inspections or reports. The agent is motivated to share the information by a set of incentives promoting cooperation and ventures in line with the principal's goals, i.e. publication of indicators describing the quality of services provided thus contributing to a better image or greater trust in the market. Nevertheless, the principal may also lose control over an agent to a certain extent in relation to a conflict or the principal's power to act on behalf of a certain interest group.

Naturally, the creation of a new institutional order in the telecommunications services market in Poland generates certain transaction costs. They refer to individual market participants, mostly the regulator of the market and operators. In the first case they are related to the functioning of the Office of Electronic Communications, i.e. setting, introducing and enforcing regulations, conducting market research, expert

opinions, meetings, conferences, employment costs or building maintenance costs. For instance, in 2013 the Ministry of Finance transferred PLN 93.4 million to the account of the Office of Electronic Communications (of which 1.83 million was not spent). Most of this money was earmarked for salaries of the Office's staff. On the other hand, however, the Office's budget income (mostly from licences and concessions) was estimated for that year at PLN 2.9 billion. It follows that the cost of the functioning of this regulatory office in relation to its income is very low (Information on the results of control of 2013 budget execution..., Supreme Audit Office, Department of Infrastructure, 2014).

Transaction costs concern also the operators. Their costs, for instance, are related to uncertainty as to regulatory decisions and delays in their implementation, or negotiations. They are naturally individual for every telecommunication company. Transaction costs include also fees imposed, or costs related to litigations. In 2013, for instance, the President of the Office of Electronic Communications initiated 134 administrative procedures concerning cooperation among operators on request of telecom entrepreneurs. Moreover, in 2013, additional 86 such administrative procedures which had been initiated in earlier years were still ongoing. In 2013 also 95 post-control recommendations were issued, where the President of OEC requested telecom entrepreneurs to remove the breach of the Telecommunications Law. Furthermore, in 2013 the regulator acted as mediator in 2,877 cases, of which 1,370 (47.62 per cent) were ruled in favour of the consumer. The Office heard also more than 6,519 cases where the President's intervention was requested, of which 4,207 (64.53 per cent) were ruled in favour of the consumer. In the interventions and mediations handled by the President of the Office in 2013, PLN 1.35 million in total were reclaimed in favour of the consumers.

Transaction costs also result from the above-mentioned information asymmetry. It refers in particular to the information relationship between the former monopolist (former Polish Telecom – hereinafter PT, at present Orange Poland – hereinafter OP) and the regulatory office and alternative operators. When discussing transaction costs of the regulatory policy, one should also point to the problems concerning redistribution of earnings. An example can be the regulatory decision on decreasing the Mobile Termination Rates (hereinafter MTR) for voicemail or using asymmetric call rates. MTRs, for instance, were still set at 0.0826 PLN/minute in January 2013 whereas on 1 July they were reduced to 0.0429 PLN/minute. They had already been decreased in the years 2010-2013, with reductions ranging from 65 per cent to 85 per cent, depending on the mobile network operator. It translated into price reductions in the retail market, which decreased operators' income while improving the situation of consumers. According to the report developed by the Audytel company, the decisions regulating MTRs made in the years 2006-2010 generated profits for consumers, totaling more than PLN 19.4 billion. Service providers, in turn, lost in total approx. PLN 6.7 billion following the implementation of those regulations. The losses of operators were directly related to lower prices both in the wholesale and retail markets.

### **3.1. "Agreement" between the President of the Office of Electronic Communications and Polish Telecom.**

When analyzing the issues related to forming agency relationships and influencing transaction costs by means of regulatory policy measures in the telecommunications market in Poland, the so-called "Agreement" between the President of the Office of Electronic Communications and Polish Telecom, signed in 2009, can be given as an example<sup>1</sup>. In the past there used to exist significant information asymmetry between the two parties. Owing to its market position, Polish Telecom was more informed than its principal on the market situation. The operator had incentives so as not to reveal the information it had obtained and

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<sup>1</sup> [http://www.uk.gov.pl/files/?id\\_plik=6296](http://www.uk.gov.pl/files/?id_plik=6296), 19.05.2014.



there were opportunities to succumb to the moral hazard or adverse selection. There were also significant differences between the goals of the two parties. Whereas the President of OEC was interested in raising the degree of competitiveness, Polish Telecom, in turn, was interested to maximize its utility while maintaining the strongest market position possible. It is the signing of the "Agreement" that has become a new regulatory instrument to reduce these discrepancies. It enabled the President of OEC to start a new era in the regulator-entrepreneur relationships, an era of dialogue, which enabled an efficient, effective and relatively harmless way to impose new regulatory obligations on entrepreneurs. What is important, not only has the "Agreement" become an example of forming agency relationships between the President of OEC and Polish Telecom, but it has also affected other market participants, mostly alternative operators (hereinafter AOs). The solution was universal and has been copied in regulatory relationships with mobile network operators. It may also be used in regulating other areas of the Polish economy, not only the telecommunications market (The Report of President..., 2009).

It should be pointed out that the main reason for implementing this agreement was the discrimination practices used by the operator, which also affected the competition in the market for landline telecommunications and data transmission. The main reasons behind signing the "Agreement" were two-fold: the President's of OEC decision to discontinue functional separation of Polish Telecom and further reductions in wholesale prices of telecommunication services.

The measures within the "Agreement" can be grouped in the following main areas:

- a) Cooperation among operators – the cooperation among operators is regulated by introduction of principles and procedures enhancing contacts in the AOs – PT relationship. It includes three major areas: Model of cooperation among operators, Time-to-Market, and margin squeeze and price squeeze tests;
- b) organisational changes - Polish Telecom separated three units in its organisation: retail unit, wholesale unit and management (corporation) unit;
- c) prevention of unauthorised flow of information – one of the major focuses of the "Agreement" was on the introduction of the so-called Chinese Walls, i.e. procedures and ventures implementing the principle of equal treatment for PT competitors, which form an actual and procedural barrier between individual units of Polish Telecom, Polish Mobile Phone Centertel and Contact Centre (CC). The Chinese Walls aim to prevent unauthorized flow of information between the wholesale and retail units of TP, which – when used – can create competitive advantage. Moreover, TP undertook major reorganisation, and even construction of new IT systems so as to ensure both physical separation of IT systems of the retail and wholesale units, and monitoring of the information flow;
- d) the non-discrimination rule concerning subsidiaries and other partners – most of the requirements defined in the "Agreement" referred solely to Polish Telecom. Others, however, addressed also subsidiary companies or specified directly the addressee,
- e) training and communications – to ensure an appropriate level of understanding of the obligations imposed on Polish Telecom in the "Agreement", special trainings were organised for employees to raise the knowledge of the agreement's contents, with emphasis on the non-discrimination rules. Most of the trainings were also attended by employees of subsidiaries and companies cooperating with PT;
- f) obligations concerning sharing or publication of information – the implementation of the "Agreement" was public, and at the same time there were a variety of obligations imposed on Polish Telecom related to informing the market or the President of OEC. The basic information obligation involved reports developed regularly by the Board of Management Representative for the Agreement, which included in particular the current phase of implementation, evaluation of the risk of failing to meet the schedule of implementation of individual solutions, information on delays.

Apart from forming agency relationships, the “Agreement” has also become an instrument contributing to the reduction of transaction costs related to the operation of the telecommunications market in Poland. The “Agreement” has put an end to many legal and administrative procedures. As its consequence, Polish Telecom withdrew also its appeal against certain decisions of the President of OEC. The “Agreement” raised also the predictability of the terms and conditions for wholesale prices and asymmetry of FTRs (fixed termination rates). Moreover, the “Agreement” laid foundations for an electronic contract acceptance system, which in turn translated into much faster acceptance of documents. As a result of the “Agreement” prohibited provisions were also removed from contracts, and access to TP infrastructure has become easier. The operators pointed to a significant improvement in the flow of information, which in turn reduced the rejection level for orders placed by AOs. These positive changes were reflected in better Key Performance Indicators. KPI are a set of key measures describing the quality of business processes provided by the wholesale unit of PT to AOs. The greatest surge in terms of quality was observed in the first period following the signing of the “Agreement”, i.e. between November 2009 and September 2010, when the average level of selected KPI6 improved by 4 percentage points, to become stable at 96 per cent. At the moment the average level of these indicators oscillates around 97 per cent (The Report of President..., 2009). Furthermore, within the first two years the “Agreement” enabled alternative operators to increase their total market share in voice services from 30 per cent in 2008 to approx. 33 per cent in 2010, whereas in Internet services – from 58 per cent to approx. 65 per cent, respectively. The “Agreement” has also contributed to stability while reducing uncertainty in the market, which translated into higher infrastructural investments, which in turn is a huge contribution to reducing digital exclusion. Based on the provisions of the “Agreement”, Polish Telecom reported having built approx. 1.29 million broadband lines at the end of March 2013 as related to the target of 1.2 million (Audit of the implementation..., 2013). Polish Telecom succeeded in meeting the requirement of building 220,000 lines with bandwidth above 30 Mbps by the end of March 2013. The company failed, however, to meet the requirements concerning the investment target in the segment of small and medium-sized cities (shortage of 49.3 thousand lines, which accounts for 10% of the target). It should be noted, however, that this underinvestment was offset with the excess investment in rural areas (34 thousand lines) and a significant excess in agglomerations (106 thousand lines), above-target number of investments in the FTTx technology, and exceeding the general investment target set at 1.2 million lines. Moreover, further development of local loop unbundling was observed – in this service the operator makes the local loop or sub-loop available to another entity so as to enable them to provide telecom services to end users. It has become an important element in developing infrastructural competitiveness by means of the so-called investment ladder.

The “Agreement” as an element of the institutional environment has thus had a generally positive impact on the level of competitiveness in the market through reduction of transactions costs related to the market’s operation. Unfortunately, certain problems still remained unsolved while they could have been solved in a more effective way. First and foremost, AOs accused PT of employing mechanisms squeezing their wholesale margins. AOs claimed also that the process of negotiating contracts with Polish Telecom did not improve at all. It is, therefore, essential to constantly improve the regulation of the telecommunications market in Poland, i.e. meeting the condition of adaptation efficiency.

## CONCLUSION

Institutional environment is a major determinant of the telecommunications services market in Poland. Formal institutions, including the regulatory policy, are of particular relevance to its functioning. The policy is a responsibility of the President of the Office of Electronic Communications, who has become one of the



most influential architects of the market order in this sector of the economy. Of particular relevance are the issues concerning promotion of competition and decision making in the cases of employment of discrimination practices.

Theories which are useful when evaluating the condition of the telecommunications market in Poland are, beyond doubt, the Agency Theory and the Transaction Cost Theory under New Institutional Economics. In the paper it is shown that the agency relationship between the President of the OEC and operators is of key relevance to the development of the telecommunications services market in Poland. The regulatory policy aims to reduce information asymmetry and to motivate operators by introduction of certain incentives, to act in line with the principal's objectives. The policy, however, is not identical for all the agents. The differences are related, among others, to the agent's position in the market. Special types of agency relationships are formed between the regulator of the market and major market players.

The creation of the new institutional order in the telecommunications services market in Poland is an important determinant of transaction costs. They concern all the market participants: regulator, operators and end-users. For instance, the costs concerning the President of the OEC are related to the functioning of the office as such, i.e. employment costs such as salaries, costs of external market analyses and above all – costs of introducing and enforcing regulatory decisions. In the latter aspect it is important for the regulator to perform its function in a predictable way, i.e. the expectations of other entities concerning the future need to be clear and transparent. Any risk and uncertainty introduced by the regulator, given the very high costs of market entry, may discourage potential investors willing to enter the market. We should be aware, however, that this market is exposed to a higher risk of regulatory mistakes related to extremely fast changes and growing technological convergence.

Any improvements in the institution of regulation promote construction of more efficient agency relationships and reduction of transaction costs. An example thereof is the "Agreement" signed between the regulator and the former national monopolist, i.e. between the President of the OEC and Polish Telecom, respectively. It has become one of the most innovative regulatory solutions introduced to this market. To a large extent it has solved two key problems of the agency relationship, namely information asymmetry and diversity of objectives, and has contributed to reducing transaction costs. Employment of specific incentives promoting certain activities has proved useful. The "Agreement" has brought mostly positive effects concerning the cooperation among operators and has contributed to higher investments in telecommunications infrastructure, which is a key to creating an information society.

The problem to be solved in the future is to define the extent of regulation and its instruments shaping the environment of the telecommunications services market in Poland. The increasing complexity of processes occurring in the telecommunications services market, requires, naturally, employment of more complex formal institutions in the framework of the regulatory policy adopted. It is also essential to improve and enrich them, i.e. ensure efficiency of the adaptation process, so as to form more efficient relationships among market participants, which at the same reduces costs of regulation. The ongoing globalisation in telecommunications markets will pose a challenge both to the development of agency relationships between the national regulatory institution and operators, and to identification of transaction costs. This globalisation is a result of technical, technological, market and regulatory convergence.

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