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Theses

to the PhD dissertation entitled

The development and structural reform of public telecommunications services in the open market

(In market economies with "developed telecommunication" systems, determining the development and liberalisation of telecommunications)

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I.

The purpose of this dissertation

(In a uniform framework with the conclusions and research results directly related to the purposes)

1. Objectives directly associated with the "general section" of Hungarian administrative law

The primary and fundamental purpose of this dissertation relates to the theoretical system of Hungarian administrative law. The reason is that Hungarian administrative law needs to be fundamentally renewed, reviewed and carefully analysed in order to follow the accelerated development of global economic and social processes.
Due to the essential features of administrative law, this need has become quite important at present and has increasingly asserted itself within economic administration. A determining and specific characteristic of administrative law is, on the one hand, that its closely interrelated system is not consummated within the scope of legislation but rather that of theoretical sciences. On the other hand, certain "branches" of public administration also include the theoretical and systematic fundamentals of administrative law, in line with the organisational and professional features of the given branch. Thus, the essential and basic features of public administration can be built on the theoretical foundations carefully elaborated by legal sciences, not only in Hungary but in every country I have studied, and also in a regional integration. Consequently, if we consider the dogmatic, regulatory and law enforcement system of administrative law, it can be seen that the continuous, actual and professional work activities performed by legal sciences in line with the development of economic and social relations are of major significance.
In this context, a chief observation of my research work is that, in the related technical literature of the countries I have studied (see Paragraph 2 Section II of the theses) - extensive efforts have been made in order to systematise and define, clearly and precisely, the theoretical fundamentals of administrative law. Furthermore, it can be generally ascertained that, as opposed to Hungary, the elaboration of the theoretical fundamentals of economic administration in the countries which I have studied is in full swing, and all of its elements are in the spotlight of interest, clearly demonstrated by the long list of literature consulted for this dissertation.
Thus, the first essential objective of this dissertation is to form a stepping-stone for the renewal of the theoretical basis of administrative law. In my view, the review and the clear-cut systematisation of the complex theoretical structure of administrative law should only be commenced (altogether) based on the careful analysis and synthesis of the major branches of public administration. In other words, the scientific elaboration of the individual branches of public administration constitutes an essential basis of the dogmatic relations of administrative law.
Taking into account today's social and economic processes, we should emphasise that the structurally changing system and regulation of economic administration have gained major importance within the field of public administration, mainly due to the development of the global economy and international trade, and, in particular, the changed content, role and impact of services, as well as intensifying globalisation. The economic and social relations forming the fundamentals of economic administration, however, require the use of institutions of law and legal regulation instruments that will gradually call for the comprehensive transformation of the basic institutions and theoretical structures of public administration. Moreover, the major fields in modern economic relations reflect a general shift in view with regard to the classic operation of public administration, its instruments of influence and the structure of administrative activities.

Thus, it can be generally established that the role and emphasis laid on economic administration – similarly to other administrative branches – have changed within the entire theoretical and regulatory system of public administration.

The regulation and complex structure of telecommunications administration is also based on the dogmatic fundamentals and theoretical institutions of public administration all over the world.

(Equally regarding the functions and activities of telecommunications administration, the boundaries and strength of its influence on markets, its methods of law enforcement, types of acts, system of legal relations (etc.))

This means that, on the one hand, the systematic analysis of telecommunications processes and the framework of telecommunications administration require studying the functions and changes of the state and of administrative intervention in the telecommunications market structure. On the other hand reversely – the organic development of the telecommunications market, its intense technical and economic transformation and liberalisation processes exert a general influence on the theoretical fundamentals of public administration, the regulation of its procedures and the entire economic administration.

It is impossible to list all the fundamentals of these peculiar effects here, as they constitute the main subject matter of this dissertation, therefore I only wish to list a few elements as examples: **a)** the sector-specific, asymmetric, ex-ante regulation of competition; **b)** the development process determining the telecommunications market from natural or state monopoly towards liberalisation; **c)** extremely rapid technical development and the relating international impacts and regulatory frameworks; **d)** specific state intervention, guaranteeing the protection of subscribers and public service provision; **e)** special objectives pertaining to telecommunications policy and legal policy, linked to economic development and competitiveness; **f)** characteristics of public service content that remained "unchanged" in the liberalised market and of universal service; **g)** the uniform regulatory framework applied in the European Communities; **h)** "customers" deemed worldwide providers in administrative and official procedures; **i)** the need for unique official and non-official activities, scope of duties and authorities associated with state intervention; **j)** special powers of authorities, in particular, market regulation and market supervision; **k)** official procedures affecting the entire market and the impact pertaining to substantive law, of decisions on the entire market; **l)** the special framework of the administrative organisational mechanism: the "network" of regulatory authorities.

The theoretical basis of administrative law and its relating regulatory structure has been of major importance in each stage of the development of the telecommunications market, but with various contents. Consequently, the order of telecommunications administration in general reflects all the elements and standard features of the relations between the economy and the state, of the organisation of public services and the methods used by the administration when intervening in the economic processes associated with public services.

In the history of telecommunications, elements such as **a)** natural and **b)** state monopoly, **c)** the mixed system of private and public ownership, **d)** exclusive state ownership and service provision, **e)** the regulation of private ownership on the basis of public service provision, **f)** concession, **g)** privatisation, **h)** liberalisation, **i)** the structure of economic and market competition, **j)** certain components of free trade (etc.) can be equally found.

On the one hand, the intricate and complex nature of certain versions of the state's role in telecommunications, and, in many cases, the ground-breaking nature thereof, implemented for the first time within economic administration can form an important basis of the state functions related to public market services and for the public methods of the reform of the public sector, and can serve as an example for them. On the other hand, taking into account the content-related features and types of public services, telecommunications is a field that is clearly the most closely interrelated with the structure of market economy, thus forming a specific, distinguished transitional area between the markets of the "private sector", operating under economic competition, and public services provided in the public sector, organised purely as public or state duties. Thus, the telecommunications service structure, a frontier-zone between the private and the public sectors, and between economic competition and public services to be provided under a state monopoly, possesses features and regulatory contents that provide clear-cut, independent criteria and general principles for the relating scientific analyses.

I had the above primary objectives in mind when preparing the comparative analysis, aimed at identifying the general theoretical basis of the reform of economic administration and market structure of telecommunications services, constituting the most important area of public market service liberalisation. In my view, telecommunications is the most important field of economic administration and liberalisation, and this view is not only supported by my partiality for telecommunications, but also by actual factors discussed in this dissertation, as well as by concepts.

In the general global processes associated with liberalisation, privatisation and the reforms of the public sector, telecommunications: a) developed in a practically unique, independent direction that had an essential impact on other sectors as well. b) On the other hand, of all market-based public services, telecommunications has gone through the most successful liberalisation process until today. c) Thirdly, it is specially interrelated with and constitutes a kind of a precondition for *aa)* the structural reforms of other branches in the public sector, and *ab)* the general processes of liberalisation implemented within the global economy, international trade, the international financial system, other economic relations and public finances. It is a unique consequence of the general impact and the economic and social significance of the structural reforms implemented in the telecommunications market and of the continuous development of telecommunications that practically all types of the generally used administrative solutions, methods, instruments and institutions of law associated with the reform of the public sector and public services, and the introduction of market competition are all involved in the development of telecommunications and its liberalisation and privatisation processes.

(See details in Paragraphs 2 and 3, Section III of the Theses and in this dissertation.)

Owing to the peculiarities of telecommunications, I performed an international comparison, as the aspects discussed in detail in this dissertation - the system of telecommunications administration – can only be analysed on well-established scientific grounds via the comparison of countries with developed market economies and telecommunications, and within the framework of global economic and international trade processes.

Telecommunications administration seems to posses uniform theoretical fundamentals worldwide in a number of respects, largely due to: *a)* the uniform network-based structure of telecommunications service provision, *b)* its contents, related to public services, *c)* the features of the natural monopoly, *d)* its market and technical characteristics.

Consequently, the liberalisation and privatisation of telecommunications and the telecommunications administration system in Hungary comply (or should comply) - in all respects – with the regulatory frameworks, methods, institutions of law and abstract fundamentals elaborated in the countries with developed telecommunications systems and the European Communities.

Initially, we not only followed, but were also active participants in the global development of telecommunications. This is well demonstrated by the various Hungarian innovations and inventions, and by the fact that the first international meeting of experts specifically related to the telephone was convened in Budapest upon the proposal of the Hungarian Post (1908). Based on this initiative and meeting, an international consultant committee (Comité consultatif international) was set up in 1924. The committee later received the more recognised name of "Comité consultatif international téléphonique", or CCIF (International Telephone Consultative Committee). (CCIF formed one of the major pillars in the organisation and operation of the ITU (International Telecommunications Union).

The international scope of telecommunications is self-evident, thus requires no further explanation in the Theses.

Although the international features of telecommunications are analysed in this dissertation in detail, I wish to mention a few examples at this point: a) Frequency management (frequencies are natural resources and, due to their nature, they are not limited by national boundaries), b) ID management (e.g.: international telephone numbers, reconciled telephone number, green numbers, blue numbers, emergency numbers, internet dial-in numbers), c) International network cooperation system (international connection, access, international calls, roaming). d) The international nature of telecommunications services, e) increasing technical development can only grow based on international efforts. (e.g.: global standards (the GSM system can serve as an example), international organisations, widespread activities of international non-governmental organisations aimed at standardisation and the development of telecommunications, their coordinative functions.) f) The functioning of "global operators", transnational companies in the telecommunications markets and the global economic system, g) international trade and liberalisation of services, and the structure of telecommunications services constituting an important and successful field within the. h) The internet network and services. i) The development of telecommunications convergence and NGNs (Next Generation Networks), which can only be interpreted in an international context.

2. Objectives of the analysis of telecommunications administration structure, which lends itself to generalisation on a global scale

The second basic objective of this dissertation is to analyse the history of telecommunications administration and its system transformed via liberalisation in detail. Thus, this dissertation intends to define a theoretical basis for the regulation of telecommunications administration, as well as the correlations and elements of the institutions of law, regulatory principles and main concepts indispensable for it. These are the institutions of law and the dogmatic fundamentals which are vital for the liberalisation of telecommunications, because otherwise liberalisation cannot achieve the public goals constituting the basic statements of this dissertation.

In my view, the liberalisation of public service markets and the "open" structure of market competition can only have a single acceptable goal and result: the more efficient assertion of public interests. That is, market competition must result in: *a)* social welfare, increased "public good", *b)* service provision on a higher quality level, *c)* more efficient improvement of selection and quality, *d)* more efficient utilisation of the economic and social impacts of the service. A structure where the services are provided by the state is more efficient than a structure where social losses are caused by the deadweight of "private monopolies".

In my view, this purpose of the dissertation is important due to the two major features of official administrative intervention in Hungary – which, in my view, can be deemed unavoidable at present:

A) Within the scope of the official activities performed by public administration, with respect to the efficiency of law enforcement, it can be generally ascertained, and in certain branches of public administration, it can be specifically ascertained that within the guaranteed framework of substantive law and formal law in public administration, the special need has arisen for: *a)* A new and modern set of instruments. *b)* Special types of supervisory activities, supervisory powers. *c)* More flexible models of procedural law. *d)* Service provision on the part of authorities. *e)* Dispute resolution and various reconciliation procedures. *f)* Mediation, cooperation consultancy and other mechanisms assisting official intervention.
Administrative functions, law enforcement methods, the relating scopes of duties and authorities, the instruments of law application and acts related to the processes of economic and commercial liberalisation have been going through a transformation on a global scale.

Consequently and as a result of the above, significant changes and reforms have been implemented in the organisation and operation of public state or administrative intervention closely interrelated with the liberalisation of public market services.

Of course, the main reasons for the transformation are social and economic relations, which are going though fundamental changes. The most prominent change in the functions of public administration can be experienced in certain fields of the market economy, in particular in the areas associated with liberalisation.

Within the scope of telecommunications services, the United States of America (hereinafter referred to as: United States) and the United Kingdom serve as classic examples of all the above, but the relating framework of regulations of the European Communities also adds specific, uniform and modern procedural mechanisms, act-types, organisational models, institutions of law as well as significant reforms of the public sector to the public administration systems of member states.

Considering the contents of the economic administrative functions of public administration, we see that administrative legal relations are also going through fundamental changes in certain branches of economic administration and also in relation to widespread liberalisation.

(Examples: industrial administration (electric energy, mining etc.), telecommunications, transportation, digital-electronic programme broadcasting, the audio-visual market, competition law, consumer protection, the administrative branches of area development).

It is quite difficult to find a proper balance in the entire market economy and in particular the liberalisation of public market services, between: *a)* the public interest, still of primary importance, with a unique "public service type" content, and *b)* the freedom of competition in a market economy.

In this respect, it must be emphasized that in terms of economic relations, the "traditional" administrative functions pertaining to economic administration may only involve support for the evolution of economic rationality, in the face of opposing influences that are exerted on the economy. With regard to economic administration, it is still an important duty of public administration to ensure that economic rationality remains within the scope of the market economy and does not spread to other social systems created to fulfil other functions. However, the functions of economic administration have quite different fundamentals and duties of public interest within the scope of the liberalisation of public market services, where, as regards state intervention, *a)* economic rationality will be in a much stronger conflict with community interests, and *b)* the freedom of market competition and the rational aspect of economic interest and efficiency receives much less emphasis compared with other economic sectors. All these tend to exert increased pressure on the traditional framework of public administration.
Thus, the continuously changing and developing economic relations re-evaluate the contents, instruments and organisation of both administrative and official activities aimed at "intervention" and "law enforcement".

With regard to market-based public services, the authority of public administration asserts a number of public, economic and strategic interests that exert a fundamental influence on the regulatory structures of authoritative intervention and official procedures. An example to this is that, in these sectors, public administration will face market players with considerable economic power even on a global scale. What is more, these economic players provide, as regards the structure of market economy, services that are of a public nature in their contents, and make major investments and developments that, in a number of cases, cannot be transferred to other sectors (sunk investments). Furthermore, the guaranteed availability and continuity of public service, as well as the efficient development of competition are fundamental aspects of liberalised markets. It is important to note that the lack of voluntary compliance with the law and possible law infringements may have considerable comprehensive social and economic impacts.

Stemming from the above, the following have received growing significance and comprehensive importance in the system of administrative activities: *a)* authorities related to market regulation, *b)* institutions of law performing official supervision, *c)* various procedures of market supervision, and those related to committees, mediation and reconciliation, *d)* service provision activities, *e)* consultative mechanisms and f) administrative organs of a special legal status (with respect to public market services, the regulatory authority, in particular), and *g)* the general law interpretation powers of regulatory authorities, not related to individual official issues, its decisions of a general force, affecting the entire market, specific, normative acts arranged in a guaranteed manner.

B) In close relation to those contained in point A), the following must be emphasized:
The administrative institutions of law, regulatory principles and methods inevitably adapted based on the effects of the continuous development and transformed structure of the global economy and public market services – analysed in detail in my dissertation, were, for the most part, inserted into the Hungarian legal system, while their harmonised relations were not developed with the other components of the legal system (of administrative law, in particular), either with regard to tenets or legislation. This means that Hungary adopted mature institutions of economic administration that evolved in developed market economies as a result of unbroken, organic development, without proper preparations taken by legal sciences. A rather prominent example to this is Act CXL of 2004 on the general rules of administrative official procedures and services (hereinafter referred to as: Administrative Act). With regard to the system and contents of official powers within the scope of economic administration, the Administrative Act - for the most part – presents a framework of procedural law that lacks a scientific basis, is impossible to apply and is inflexible.

In respect of telecommunications administration, it can be generally ascertained that the Administrative Act does not constitute a regulatory structure that is in line with the modern economic and social relations or rests on a well-established theoretical basis. This can be equally established with respect to the initiation and termination of an official legal relation relating to procedures, the rights and obligations constituting the contents of a procedural legal relation, procedural sanctions, official decisions, official instruments of procedural law, the contents of legal remedies, and enforcement as well as the modern institutions of law called "novelties" (e.g.: legal succession, official contract, official mediator, equitable procedures).

In the market of telecommunications, the Administrative Act leaves much to be desired not only in guaranteeing the rights of customers but also in efficiently laying down the foundations for asserting official rights.

A single example: As regards the termination tariffs of network services where, in general, prices are regulated globally (see Paragraph 4, Section IV of this dissertation) – the official decisions taken in this respect applied special procedural methods that do not fit in the framework of Hungarian official procedures and law enforcement on the part of public authorities, largely due to the crude nature of the theoretical fundamentals, of the Administrative Act and of the regulation of particular procedures. On the other hand, none of the official decisions passed on an annual and later on a bi-annual basis (following procedures that required the analysis of the entire market and a two-year deadline for resolving the issue) ended with a judicial review. (There was one exception, but even that was not determined to the merit but via the closing of the case.) However, termination tariffs are important with regard to the price structure in the entire telecommunications market and are directly related to the subscribers' or retail tariffs (that is, with the tariffs paid by subscribers for telecommunications services). If the judicial review changes the genuine content of these official decisions, the tariff component paid by service providers to each other on the basis of each call made by a subscriber will have to be recalculated with retroactive effect to a number of years, which will lead to unpredictable market consequences and to practically unending civil actions, affecting the entire telecommunications market. Of course, this does not mean that it is not important to guarantee the lawful nature of an official decision and to ascertain the contents of an official decision that is possibly infringing the law. Instead, it is emphasised that the scientific structure of the general section and the relating regulation of administrative procedures in force do not present any assistance or constitutional guarantee to this effect (At this point, I would particularly prefer not to present in detail the hopeless battles fought with market players in order to assert the public interest and, on the other hand, the procedural provisions that rightfully test the patience of market players, or the methods that rested on such statutory provisions and that had to be used to facilitate law enforcement.)

The current regulatory model of official procedures would not cause such serious problems in the individual sectors if, on the basis of an authorisation relating to a difference or additional regulation defined within the scope of the Administrative Act, - with regard to substantive, sectoral statutes – legislation created a regulation of procedures that is different from the provisions of the Administrative Act to the merit, and is *a)* actually justified and necessary, *b)* is in line with the peculiarities of the given sector, and *c)* is established by legal sciences – that is, by theory.

This means that in principle, within the framework of particular procedural rules relating to a group of official issues different from their general counterparts (so-called: peculiar issues) requiring specific procedural regulations, the following issues could be resolved *a)* more flexible instruments of procedural law, *b)* special official procedural forms and law enforcement methods, aligned with the given regulation of substantive law, *c)* peculiar procedural guarantees given by customers, *d)* the applicable legal consequences, *e)* the mechanisms pertaining to cooperation and reconciliation procedures with customers and *f)* the procedural institutions of law evoking or supporting official intervention by public authorities.

However, legislation in the administrative sector, in the current accelerated mechanism of preparing statutes and legislation, resting on a basis that is not elaborated adequately with regard to theory, is unable to properly set up procedural rules regarding guarantees, other than those contained in the Administrative Act. What is more, as regards the current structure of legislation, this cannot be implemented and cannot be expected in the individual sectors of public administration.
As regards the renowned work of Gábor Földes, his thoughts on tax law legislation are generally also true in Hungary today, with regard to the creation of all particular procedural rules of administrative law, and are clearly characteristic of the regulatory structure of economic administration. Accordingly "The main reason for the inflation of tax law is the conflict between the preserving nature of law that stabilizes the existing situation and the efforts of financial policy aimed at quickly resolving conflicts. [...] Financial policy endures frequent changes and even the expression, as a prevailing view, of concurrent interests that are in conflict with each other either in part or entirely ... A decision regarding financial policy is often of an ad hoc nature. The legal system and tax law, with their seemingly conflict-free rules, are unable to adapt to this. [...] When creating the new norms of tax law, very often the economic and legal environments are not studied: it is not analysed to what extent the new legislation will change the conditions of operation of the set of norms existing in tax law – and, in a broader sense, in the entire legal system. Due to time constraints and the frequently prevailing ad hoc nature of resolving issues, the main concepts of legislations in tax law – are defined without assessing or analysing in detail the relations, conditions and circumstances to be regulated. The preparation of legislation in state administration is result-oriented and intends to confirm the correctness of the preliminary concepts

and decisions in the drafts elaborated". Thus, the mechanism applied for preparing legislations in the field of state administration will rather hide than explore possible alternative solutions, and decisions on content and form in the preparatory process rarely coincide with each other. Furthermore, the National Assembly will continue to play a limited role in legislation as long as only the completed versions of the selection and assessment process are submitted to the Parliament, and, consequently, only a small portion of alternatives will be presented and even if these are presented, it will be too late.

(Gábor Földes: Financial Law, Volume II, Tax law, Bp., KJK-KERSZÖV Kft, 2000., pages 85 and 86.)

Thus, the second objective of this dissertation is proving that an international outlook and the scientific exploration and comparative analysis of general theoretical fundamentals and processes are of major importance in the various administrative sectors, both in order to substantiate the need for reforms representing real value, as well as for sectoral legislation and law enforcement in the public interest.

For instance, in my view, it is not a real reform in the public interest if, with respect to the merging of administrative organisations, the contents and parallel, reducible functions of administrative tasks are not considered and analysed profoundly. That is, the merger of two or more administrative authorities that do not perform any professionally founded, parallel functions that could be rationalised lacks all rationality of administrative organisation and legal theory, or if specific tasks of state administration are included in the powers of a given authority without professional and theoretical rationalities.
It can be deemed a method lacking all rationality if two authorities possessing separate duties and powers are merged on the exclusive basis of saving additional costs (e.g.: human resource policy, management, etc). This is not an administrative reform or rationalisation but an offence to the performance of administrative duties; what is more, it is the infringement of the principle of constitutionality, established in the general practice of the Constitutional Court. As part of such mergers, the separate professional functions will render incompatible the conducting of official procedures in the public interest, the appropriate regulation, separation, assertion of special procedural rules and powers and the guaranteed operation of the system of legal remedies. Furthermore, the administrative tasks and powers and organisational units that have been merged but that are separate with regard to content will, by all means, "compete", and, as a result, the performance of administrative duties in the public interest will be harmed. It must be emphasized that, in a number of such cases, the operation of the authorities may become badly organised and the practice followed by a judicature may become inconsistent, and the framework for a possible cooperation with market players cannot be ensured, either. (In this dissertation, see as an example *a)* the initial phase of telecommunications in the United States ("Mann-Elkins Act of 1910"), *b)* the "organisation" of telecommunications administration in New Zealand *c)* the problems associated with the merging of functions of telecommunications administration and other administrative functions, etc.)

The third, general objective of this dissertation is closely related to the above.

3. Objectives relating to the of taxonomy and essential content of Hungarian telecommunications law

Another important purpose of the analysis, with an international outlook, of the development of public market services and the history of telecommunications is to present the fundamentals the development of over 100 years, lying behind telecommunications administration in Hungary, among them, the reasons for and the processes of the liberalisation process that today determines the regulation of telecommunications. I intended to present the development of public services and the liberalisation of telecommunications not only because of the importance of the issue itself, but also because I wanted to emphasize the real meaning, underlying essence and importance of Hungarian telecommunications law for the professional administrative sector in Hungary.

With respect to this goal, the international comparative study is of specific and primary importance because the entire regulatory system and all the components of the liberalisation of Hungarian telecommunications are determined by the structure of telecommunications liberalisation implemented on a global scale.

My general experience is that, if we consider the judicial reviews - that should be reconsidered, in my view - of the relating official decisions and the relatively narrow base of Hungarian technical literature on economic administration and telecommunications, the essence, real significance and goal of regulation, that is, the reason for regulating the institutions of law seem to be forgotten. Consequently, the literature on law also contains unnecessary, empty and meaningless systemic arrangements and analyses, and in a number of cases, the application and

interpretation of the law at first instance has sometimes diverged from the theoretical fundamentals, essential contents and international definition of telecommunications law and, what is most important, from the market and economic relations of telecommunications. (The latter, of course, is to be taken in a general, abstract sense.) The biggest problem is that the development of telecommunications does not take into consideration the time needed in court remedial forums for a clarified interpretation of the law. This means that the system of judicial reviews in Hungary is unfit to serve goals in the public interest and needs to be transformed to bring it in line with the economic relations, because in its current form, it takes a very long time to pass final court orders that present an authentic interpretation of the law, imperative for the market.

(There are a number of reasons for this, but the topics of my theses or my dissertation do not include criticism related to the possibilities of learning about issues on the merit and the framework of court procedures, and I prefer not to express such criticism in general.)

All this presents special difficulties in telecommunications, because, first, the immense, so-called "sunk" investment costs (which cannot be converted into other sectors), second, the slow return of investments and thirdly, the essential need for stability, consistent law enforcement and jurisdiction are basic structural characteristics of the telecommunications market.

It should also be mentioned that in the Hungarian literature on law and judicial reviews of decisions made by telecommunications authorities, telecommunications regulations are sometimes interpreted using a method where no theoretical and systemic information applied ("as is").

The third basic objective of the study contained in this dissertation is to identify the reasons and the essential contents and structure of telecommunications regulation. That is, I will strive to present the elements of the complex components constituting the contents of the regulation of Hungarian telecommunications, the "background" of telecommunications administration and telecommunications law in Hungary.

4. Objectives associated with the importance of systematisation and the precise and consequent use of terms in the administrative legal theory

The fourth objective of this dissertation is to emphasize the importance of the precise and clear-cut elaboration and of the systematic use of the concepts forming the theoretical basis of public administration, and the importance of scientific classification. In my view, considering the features of administrative law, the well-founded and systematic nature of the theories of the general section, and its clear-cut structure that facilitates legislation and law enforcement to the merit can be deemed preconditions, and almost exclusively rest upon the profoundly elaborated contents of concepts and the preciseness of the relating classifications.

For instance, the importance of various administrative activities, administrative acts and their legal effects, legal relations prevailing in public administration, direction-supervision-control, the systematisation and the sets of concepts of law enforcement methods.

In this respect, I lay special emphasis on the concepts of economic administration and, within it, in particular, those of the public service system of telecommunications, market structure, administrative structure and the changes in the public sector.
As regards the theses, it can be ascertained not only with respect to the goal of this dissertation but also as major parts of its conclusions that "traditional" telecommunications features a general natural monopoly, predominant state ownership, the direct role of the state in service provision and a public service content. As regards the reform of telecommunications, practically all the basic methods, instruments and sets of concepts serving the structural transformation of public market services will receive more or less significance, thus, in particular, liberalisation, privatisation, decentralisation, the termination of the monopolistic position and, specifically, the structures and concepts of deregulation.
Due to the complex processes of the liberalisation of the telecommunications market and its special role in the globalising world economy, social development and "information society", a number of other concepts other than those mentioned in the previous sentence can also be associated with the development and transformation of the telecommunications market.

(e.g.: the various interpretations of co-regulation, re-regulation, de-regulation, as well as the various meanings of self-regulation or public service regulation.)

In respect of the concepts that determine the structural transformation of the telecommunications market, there are three major factors that need to be mentioned:

1) The large number of complex concepts used is for the most part only suitable for rendering incomprehensible and for overcomplicating the interrelated system of the development and regulation of telecommunications.

The extensive use of all types of concepts and their appearance in large numbers is, in general, characteristics of the technical literature on telecommunications but it is especially predominant in the literature on law. However, most of the often undefined concepts introduced in legal analyses, are, in general, inaccurate, or simply meaningless and are totally unjustified as regards the analysis or precise interpretation. Most of the concepts used without any ground in analyses on regulation and the various institutions of law are insignificant, impossible to assess as regards its content or draws attention away from the essential elements and processes.
As regards the proliferation of concepts in telecommunications, we can get to the point where the intricately and "scientifically" devised concepts lacking any content whatsoever are created just for their own sake and for the sake of scientific appearances, when their creation is not related to any intention to prepare a scientific analysis. This becomes clear especially if a given concept is not intended to describe or classify the economic processes and regulatory bases associated with telecommunications, or it merely serves superficial, illogical or unnecessary systematisation. In this regard, two main factors must be emphasised:
On the one hand, as the telecommunications sector encompasses the basic structure of information transmission in the broader sense, telecommunications, especially at present, has become almost incomprehensively and inconceivably interrelated with: *a)* world economy, *b)* international trade *c)* globalisation processes, *d)* technical sciences, *e)* the economic policies of the individual countries, *f)* economic development and competitiveness of individual countries, the network of international relations, and *h)* the sociological fundamentals of an information society.
On the other hand, it should be a fundamental duty of legal sciences and legislation to classify the economic and social processes related to telecommunications, in order to select relations that are relevant with respect to intervention via legal regulations and economic administration and to elaborate efficient statutes and institutions of law that serve efficient, appropriate law enforcement. All these constitute such a complex task, added the significance of legislation and legal policy that basically determines relations in the telecommunications market, the "peculiarities" of law and the fast changes in the field of telecommunications that are almost impossible to follow, that superfluous concepts will inevitably also appear in the fields of science, legislation and jurisprudence. Irrespective of the above, however, it must still be pointed out that the nature and social-economic role of telecommunications by all means justifies the avoidance of overcomplicated, scientifically worthless and unfounded analyses, classification criteria and concepts in the area of legal sciences as well.

(All the more so as the task of science is not overcomplicating and meaningless blurring of the object of analysis but providing clear-cut explanation and systematisation as necessary.)

2) in relation to those contained in the previous paragraph 1), it must be pointed out that the gradually intensifying changes that determine the basic market structure, functioning and administration of telecommunications can be comprehensively described, systematised and analysed with regard to two concepts: a) liberalisation and b) privatisation.
All other concepts existing in economic administration, relating to the transformation of the market structure constitute a part of liberalisation or privatisation or its contents are in a determinant manner and basically interrelated with the concepts of liberalisation and privatisation. (See in detail in Paragraph 2 Section III and Section IV of this dissertation.)

3) The development of telecommunications did not question the role of the state and did not require

the elimination of state intervention in the telecommunications market but called for a qualitative change and a transformed role of the state in telecommunications.

The main economic and technological drivers of progress in telecommunications made it clear that, to facilitate the proper utilisation of opportunities associated with the transmission of information, affecting the societies and economies of all countries as well as international processes:
a) all powers associated with state ownership in telecommunications companies and services should be reduced to the highest possible extent.

b) In addition, in the public telecommunications sector, the following must be transformed fundamentally *a)* the regulatory structure developed in order to artificially maintain monopolies, *b)* the system of exclusive and special rights granted by the state, and *c)* the functioning order of telecommunications, closely related to budgetary management.

Rendering the telecommunications market independent of the public sector, budgetary management, the decision-making mechanism applied in the structures of the public financial system and the state ownership structure will not equal the termination of express state intervention justified by the peculiar content of telecommunications.
With regard to the structure of economic competition in telecommunications, triggered by economic and technological factors, the system of economic administration, that is, the sector-specific telecommunications regulation that guarantees strict and efficient intervention on the part of public authorities inevitably continued to exist, what is more, it even gained importance along with the development of and due to the growing significance of telecommunications. (A legal system that guarantees unique state intervention and law enforcement).
The competition market environment intended to be achieved will require a strong regulatory order resting on professional foundations (the close conformity of technical-, economic-, and legal sciences), because, due to the peculiarities of telecommunications, the evolution of efficient competition in telecommunications further to the driving forces acting in the market, and as a result of a natural, organic economic development is practically impossible.

In lack of a sector-specific regulation, intervention on the part of the state on the basis of strong public authority and law enforcement, the development and functioning of competition in a liberalised telecommunications market will be impossible due to a number of complex and intricate reasons that are analysed in detail in this dissertation.
At this point, the following should be mentioned as an example: if the former state monopoly operating in private ownership is not obliged to ensure, for "new" telecommunications providers entering the market, cooperation and interconnection with or the use of its extensive network in its ownership owing to privatisation, no real competition will function in the telecommunications market and no-one will even come close to even embarking on the road towards the evolution of competition.

Thus, in the history of telecommunications, state intervention has been and is continuously justified and necessary today as well, and the milestones marking the stages in the development of telecommunications led to a comprehensive structural transformation in the method and organising principles of state intervention.

The structural changes pertaining to the elimination of state monopolies in telecommunications equalled, in a general sense, the termination of state ownership and budgetary management order that determined the functioning of services and telecommunications operators; at the same time, the telecommunications market gradually moved out of the scope of the public sector as regards its economic basis and regulation, except for its contents and the features of most services. That is, it was not the public contents and public service nature of basic telecommunications services that went through major changes but the structure, functioning and development direction of the telecommunications market as well as the system of state intervention associated with the structures of the telecommunications market.

5. Objectives associated with the analysis of the system of public service provision in telecommunications and its structural reform

As regards the most important basic objectives of this dissertation, I must point out the most general objective associated with the entire dissertation, which is the analysis and assessment of the system of public telecommunications services and liberalisation. In addition to my interest in and commitment to the subject, taking into account the rather limited scope of the technical literature available in Hungarian on telecommunications law, my view is that I have made a well-founded decision as regards the subject of this dissertation.

(I must add that if we consider the base of foreign technical literature of all the countries that possess developed telecommunications, we'll see that the scope of foreign literature possessing scientific qualities, available on telecommunications law is not too wide, either as regards the liberalisation of telecommunications and public services.)

The lack of scientific interest in the topic outside the field of telecommunications in Hungary is difficult to comprehend, - as, on the basis of the aspects discussed above, - the liberalisation of telecommunications equals the reform of a public sector of major importance or perhaps of most importance as regards public market services. In any case, telecommunications creates an interesting and complex administrative structure that also involves a rather many-sided challenge related to law enforcement and law interpretation, and further requires various international activities related to preparing decisions and coordination. In the second half of the twentieth century, a major technological development commenced in the field of telecommunications, which had a fundamental effect not only on the economic relations related to telecommunications but, in addition, on economic and social development as a whole. We can say that telecommunications forms the basis of modern economy, in which the effects of information technology and telecommunications are often referred to as "revolution", similarly to former industrial revolutions. The technological progress made in the field of electronics, as well as computers, telecommunications equipment and software facilitates the transmission and processing of voice, data and pictures in a manner that is beyond all previous belief, which may fundamentally transform the economic and social relations, and, what is more, even networks of personal relations. Thus, technological development renders possible the processing, storage, retrieval and publication of information in the desired form – oral, written or visual – without any restrictions regarding distance, time or quantity. A further basic element in the development of telecommunications is that platform-neutral functioning will be gradually implemented, which means that service will become independent of the infrastructure that constitutes the physical basis for transmission.

To illustrate the intensive development of telecommunications we should mention as an example that as of the early nineteen-eighties, until the end of the nineties, the computer, telephone and television networks increased their data transmission capacities to over a million-fold. If the production of automobiles had developed in a similar pace, an average vehicle would have cost HUF 1,000-1,500 in the late nineties, and would have covered approximately 100,000 kilometres with one litre of gasoline.

Of course, this change and development, following the changes in social relations also started to affect legal regulation. Thus, technical and economic processes ensured a role of growing importance for the legislation activities of the state and the economic governance functions of public administration.
Telecommunications administration and telecommunications law today play a primary role of functionally changed importance in the operation of the telecommunications market. In addition, however, the regulation of telecommunications has preserved its basic and close relations with the technical and economic development of telecommunications and the former system of public services that can be considered "traditional".

As mentioned before, another major element of telecommunications is that it is fundamentally "international". This means that on the basis of the typical characteristics of the telecommunications infrastructure and services, it is clear that telecommunications administration can only be analysed within the processes of the global economy, international trade and the international development of telecommunications.

In my dissertation, special emphasis is laid on the close correlation between technical, economic and legal sciences. The structure and operation of the market economy, as well as the technical basis and technological development of telecommunications forms a set of basic criteria even in the analysis of telecommunications by legal sciences. It is important, however, to find a correct balance of proportions in the synthesis of the scientific fields. As regards the legal study, in my view, other scientific fields can only be discussed if they serve the legal analysis, are subordinated to the same, and only on the level and to the extent necessary. Furthermore, it must be pointed out that in the legal analysis, the objective of elaborating or assessing the issue on a scientific level cannot be associated with the theoretical fundamentals or results taken from other disciplines of science.

The reason is that a legal paper can only be deemed well-established within the scope of legal sciences. Consequently, in my dissertation, the intention to prepare an assessment, to draw theoretical conclusions or to elaborate or achieve a scientific result is not related, even indirectly, to the theoretical fundamentals of technical and economic sciences.

While strictly keeping in mind the values and significance of technical and economic sciences, with regard to other scientific fields, my dissertation only outlines the theoretical bases that are essential for the topic of this dissertation.

II.

The methodological basis of this dissertation

(In a uniform framework with the conclusions and results directly related to the methodological system of the research)

1. The structure of this dissertation; the fundamentals of the related research and methodological system

This dissertation can be divided into three main sections: 1) The analysis of the development history prior to the unfolding of liberalisation in telecommunications. 2) The detailed discussion of the fundamental reasons determining the general process of liberalisation in telecommunications which has unfolded on a global scale. 3) The discussion, in relation to the structural reform, of the liberalisation and privatisation of the service structure of telecommunications, of theoretical fundamentals, regulatory methods and "essential" institutions of law, which are within the scope of this dissertation and can be rendered universal on an international scale. Furthermore, the complex meanings of convergence in telecommunications and Next Generation Networks (NGNs) that represent a major direction of development are analysed in a separate section but, still relating to liberalisation as regards structure.

1.1. Analysis of the structure and the public service system of the telecommunications monopoly in the market

The period preceding competition in the telecommunications market forms a major part of this dissertation as: *a)* this was the longest period in the development of telecommunications (approximately 100-120 years), *b)* on the other hand, in countries with developed telecommunications it presented uniform frameworks that could be divided on the level of models (the most important exception is the United States), *c)* thirdly, the process of liberalisation cannot be interpreted even superficially, and cannot be understood without any knowledge on the market structure and state service provision in the former public sector, *d)* fourth, it can be pointed out via profound studies that, a number of features of this period *da)* also constitute a key element of the regulatory regime related to liberalisation and the functioning of market competition, or *db)* fully survived in the transformed framework of telecommunications administration as well.

On the basis of their general impact on the entire "traditional" system of telecommunications, on the development of telecommunications preceding the evolvement of liberalisation, on its market structure, international processes, the contents of its regulation and the scope of administrative influence, this dissertation discusses two main elements:

A) The natural monopoly and the preservation and protection thereof by the state.

However, in order to comprehend the concept of natural monopoly and its features with regard to market structure, it is essential to outline the basic characteristics, regularity and operation of market economy. Therefore, this dissertation briefly discusses the general fundamentals of perfect competition, the failures of market economy (imperfect competition, public goods, external economic effects, market inequalities, etc.) and of a mixed economy.

B) The public service contents of telecommunications.

To provide a basis for the analysis of the public service structure in telecommunications, this dissertation discusses in detail. e.g. the relations between: *a)* public services and public goods, *b)* public service and state ownership, *c)* public market services and the natural monopoly, *d)* the concepts, types and system of public services, *e)* a the concepts and uniform bases of public market services, *f)* the structure of network public services, *g)* the relating features of substitutability, and *h)* the essence of regulating the fees of service provision (according to today's concepts: of retail prices).

In general, it can be ascertained that an analysis of any type, based on any criteria, of the development of telecommunications services and the international evolution of liberalisation in telecommunications can only be based on the following essential basic points: a) the structure, functioning and regulation of telecommunications monopolies and b) the concept and content of public services and their relations with the regularities of market economy. (See the reasons for applying this method for the analysis in Paragraph 2 Section I of this dissertation.)

(In relation to the analysis of market economy, it must be pointed out that the general theoretical fundamentals of other types of economic development that have spread outside market economy, particularly the model of a controlled market as in Eastern Asia, the economic model of socialism and the soviet type of planned economy will not be discussed. Certain basic elements of the "alternative" economic models will be pointed out, to the extent necessary, in relation to the analysis of the telecommunications of countries that apply a given peculiar economic model.)

1.1.1. The methodology applied in the model-like analysis of countries that possess a developed system of public telecommunications service provision

As regards methodology, to provide a basis for the analysis of the telecommunications monopoly and the system of public services, I organise and discuss the telecommunications systems of countries possessing developed telecommunications on the basis of various models.
As regards the development, operation and regulation of telecommunications, the contents of state intervention, the system of public service provision and ownership rights, the following models can be distinguished on the level of countries (prior to liberalisation: a) the telecommunications system of the United States, based on private ownership, following an ideal model-like development path, b) the telecommunications system of the United Kingdom, c) The German-Austrian-French model, d) the Southern-European model, and particularly the telecommunications structure of Italy. e) The Scandinavian model and, particularly the Finnish telecommunications system that is practically unique on a global level. (See in Paragraph 1, Section III of the Theses and, in detail, in Section II of this dissertation.)

Another model that must be mentioned is: f) the telecommunication systems of Japan and certain newly industrialised Far-Eastern countries that implemented major telecommunications investments.
(The development of telecommunications in Japan is not discussed as a separate historic model due to the dimensions of this paper. The history of telecommunications in Japan becomes significant in this dissertation in the comprehensive analysis of the liberalisation of telecommunications in Japan (dissertation, Paragraph 1.3 Section IV.), and, second, as a basis for comprehensive and model-type studies, and, thirdly, as a reference in relating general analyses.)

(As regards the topic of this dissertation, see details on the countries that are of key importance as regards the development of telecommunications, possess a developed telecommunications system and constitute the basis of the analysis in Paragraph 2 of the theses, below).

A) To facilitate comparison with European countries, this dissertation contains a more focused and detailed analysis of the initial structure and development of the telecommunications system of the United States.

(See the reasons for this in Paragraph 1 Section III of the theses and, in detail, Paragraphs 1, 2 nd 3 Section II of this dissertation.)

B) The European countries that can be considered of key importance in terms of the development, market relations and public service provision of telecommunications will be discussed according to the models, along unique characteristics that can be generally pointed out and that should receive more focus with respect to laying down the foundations of liberalisation. (See Section II of this dissertation.)

The European countries that operate in a market economy and possess developed telecommunications demonstrate a relatively uniform structure as regards the history of the operation of national network-based public services (other than local or regional levels), and within this, in particular, with regard to: *a)* the organisation of telecommunications, *b)* the development of telecommunications, *c)* the structure of services provided, *d)* the fundamentals and principles of the regulation of service provision, *e)* state intervention, economic administration, corporate governance and state ownership.

1.2. The methodology applied in the analysis of the reasons that determine the processes and international system of the global structural reform of telecommunications

The following reasons contributed to the elimination of the natural telecommunications monopolies protected by the state, to the practically inevitable occurrence and general

evolvement of telecommunications privatisation and market liberalisation: A) internal (telecommunications-related) reasons conforming to the features of telecommunications (stemming from the characteristics of telecommunications), according to technological and economic criteria, and

(as regards the internal reasons for telecommunications liberalisation, *a)* this dissertation analyses, though only to the extent absolutely necessary, the technological development of telecommunications, which served as perhaps the most significant basis for the evolvement of liberalisation, *b)* and discusses in detail the particulars of the changes to the characteristics that constituted the foundations of the "traditional" structure of telecommunications and constituted key factors related to the market, the economy, regulation and public service content).

B) external reasons of general significance as regards liberalisation (the world economy, the international financial system, international trade and the development processes of trade policies).

As regards the external reasons discussed and analysed, the following were the most important processes, in particular:
a) The basics of the international economic order following the second world war and its changes in relation to economic liberalisation; within it, in particular *aa)* the framework of the gold-exchange standard, the organisation and operation of the World Bank and the IMF – their effect on the general processes of market liberalisation, and *ab)* the structural balance of the world economy and the structural and institutional crisis of the world economy that deepened in the 1970s, ac) the development of the telecommunications policy of the European Communities. b) the "Washington Consensus", c) the fundamental institutions, framework and development of international trade and trade policy, and within it, in particular: *ca)* the system of the General Agreement on Tariffs and Trade (GATT), and *eb)* the institutional framework and operation of the World Trade Organisation (WTO) and its role in the processes of liberalisation. d) the international liberalisation of trade in services and within it, *da)* the structure and content of the General Agreement on Trade in Services (GATS), its effect on telecommunications liberalisation, and the positioning of telecommunications services in the intricate and complex structure of GATS, and *db)* the analysis of the annex on telecommunications of GATS, relating to "basic telecommunications networks and services" with respect to the international trade in services.

1.3. The research and analysis methodology applied in the theoretical basis, regulatory methods and "essential" institutions of law of administrative intervention, occurring on a global level and pertaining to the structural reform, privatisation and liberalisation of the telecommunications service structure

The basic considerations and the research method applied in this dissertation, most closely related to the objectives defined in Section I are aimed at identifying, analysing in detail and qualifying the sector-specific regulatory principles of the institutions of law globally necessary and "essential" in the liberalisation and privatisation of telecommunications.

Criteria for generalisation: If, in accordance with its public policy, a given state decides to commence the liberalisation and privatisation of telecommunications, in lack of the "essential" bases of regulation and institutions of law in telecommunications, analysed in Section IV of the dissertation, liberalisation will not be able to achieve its most important goal: the functioning of market competition in a manner that is appropriate according to public interests. (Section IV discusses the general fundamentals of the liberalisation and privatisation of telecommunications.)

The complex process, structure and regulation of telecommunications liberalisation and privatisation are analysed using the following methods, also in consideration of the length of this dissertation:

A) Analysis of the general theoretical fundamentals and content elements of telecommunications liberalisation and privatisation and of the administrative and legal framework necessary for the evolvement of telecommunications liberalisation and privatisation that is efficient and successful with respect to public interests, in particular:

a) The discussion of the concept, basic content elements and the effects on market structure of telecommunications liberalisation and privatisation. The division of liberalisation and privatisation in telecommunications; the analysis of their relations.
b) The analysis of liberalisation and the liberalised telecommunications market as regards public service content. The classification of the public service structure that can be defined in telecommunications market competition.
c) The brief description of major inter-governmental, international and international non-governmental organisations that contribute to the uniform technological development, standardisation,

comprehensive development and coordination of telecommunications.
d) The concept of universal service and its features generally existing in international comparison.
e) The so-called basic instruments and bottlenecks, of special significance and having a special role in the process and regulation of liberalisation and the functioning of competition on a liberalised market. With regard to basic instruments, we must emphasise the role of frequency trading that has become widely used at present.

It is important to analyse the unique changes and reforms of frequency of use, also with regard to the concept and structure of liberalisation and privatisation. (On the basis of profound studies, it can be ascertained that, with respect to the spectrum, the reforms pertaining to regulation, the public sector and public property cannot be considered liberalisation even in a broader sense.)

f) The detailed analysis of the regulation of network cooperation, within it, in particular: of network access, interconnection, local loop unbundling and local bit stream access.
Considering its special significance, this dissertation discusses the telecommunications regulation of network cooperation according to (generally prevailing) models that can be systematised according to uniform characteristics in international comparison.
g) The features of the administrative institutions of telecommunications administration, the general theoretical fundamentals and basic principles of its organisation and activities, in particular:
The detailed analysis of the regulatory authority with regard to its *a)* concept, *b)* organisational structure, *c)* "independence" within the organisation of the state, *d)* "regulatory nature, *e)* its activities, with special regard to market regulation and supervision, *f)* the mechanism prevailing with respect to its duties and authorities, *g)* its market role, *h)* its major administrative functions fulfilled in the process of liberalisation.

It is an essential element of the liberalisation of market–based public services, that is, of telecommunications that the state functions, duties and authorities that fall within corporate governance must be separated from the structure and operation of the market and from market players.

h) The efficient fundamentals pertaining to market competition of the regulation of a liberalised telecommunications market structure are as follows: a sector-specific, sector-neutral, asymmetric and ex ante regulatory method.
i) It is a feature of telecommunications liberalisation that, in its general processes and theoretical fundamentals, the liberalisation of network infrastructure and service provision were not separated.

This means that telecommunications liberalisation and privatisation is a process that involves both the network and the service.

j) The relation of certain sub-areas or sectors of telecommunications, even forming independent sub-markets, within the process of telecommunications liberalisation considered uniform.
On a general level, with regard to the evolvement of telecommunications liberalisation, the sub-sectors of and sub-markets within telecommunications that can be defined on the basis of the special features of the network and services are not significant on their own. This means that the liberalisation of telecommunications proceeds in a uniform framework and along unified processes on a global level.

The meaning and methodological content of the "general level" is as follows: the "sub-areas" are not significant on their own, only with regard to regulatory policy and the main principles and concept of regulation.

However, compared to the general level, taking the details in consideration, we find that the liberalisation and possible privatisation of certain telecommunications sectors or sub-areas that can be identified on the basis of technology, infrastructure or services show major differences and peculiarities as regards *a)* time, *b)* content *c)* structure, and *d)* processes and also require special institutions of law in certain respect.
Further to the above, this dissertation analyses, classifies and identifies the sub-areas of telecommunications and also discusses the peculiarities of liberalisation in such sub-areas. The "sub-areas" identified in this dissertation on the basis of detailed reasons (landline telephone services) constituting a major structure of this dissertation are as follows:

a) Wireless telecommunications and within it: *aa)* satellite telecommunications, *ab)* Public terrestrial (analogue and digital) cellular radio telephone systems (referred to as: mobile telecommunications in this dissertation), *ac)* Radio data-communication systems – terrestrial wireless data transmission systems, *b)* Landline data transmission network

and service systems, *c)* as a special field of landline data network and computer network system, due to its social significance and special importance in the structure of the telecommunications market, as an independent sub-area: the internet, *d)* With regard to transmission systems relating to the electronic media and media management, that is, platforms for programme transmission, in particular, landline programme distribution, that is, cable television networks and the relating telecommunications services.

Programme transmission does not form the subject of this dissertation. Taking into account its essential relations with the topic, Section V of this dissertation briefly discusses the network and service system of cable television, with regard to telecommunications convergence. (As regards methodology, the following paragraph 2 of these theses discusses programme transmission and the platform of cable television.)

k) The effect of telecommunications liberalisation, a liberalised market structure and convergence on the concept and content of telecommunications.
Although with somewhat different features and in different points in time, the liberalisation process had significant influence on the concept of telecommunications all over the world.
As regards methodology, the concept of telecommunications should be defined in a manner that, on the basis of the concept elements, we should be able to clearly determine whether a given service can be deemed a telecommunications service or not, irrespective of the often occasional, inaccurate terms difficult to interpret, used to refer to such service.

The uniform use of concepts becomes especially important with respect to the widespread convergence of telecommunications and the development of telecommunications that is becoming unified on a global economic level (infrastructure, services, standardisation etc.).

Consequently, as regards the operation and regulation of a liberalised telecommunications market, a general, uniform base of concepts should be elaborated that clearly and definitely identifies the contents and borders of telecommunications with respect to practically each country and telecommunications market structure.

B) As regards methodological considerations, it is important to analyse the unique liberalisation structure of countries that are of major significance and possess model-like features with regard to the process and contents of telecommunications liberalisation. The basic features, relating to liberalisation, of countries that determine and set examples for the worldwide processes of telecommunications liberalisation are the following:
a) They decided on opening the telecommunications markets at a much earlier time than other countries.

As a result, they had a major, often decisive effect on the processes, contents and concept frameworks of the telecommunications process of other countries.

b) Another point is that, in these countries, liberalisation evolved in a framework that was interlinked with and conform to those of privatisation, as opposed to countries where these processes, typical of the reform of the public sector were only remotely related in terms of time and content, and liberalisation preceded privatisation or vice versa.

E.g. the United States is an important model of the relations of liberalisation and privatisation, because its telecommunications liberalisation, in terms of its effects, and model-like or exemplary features, resulted in a market opening system that is of major importance internationally. However, privatisation did not play a role in the structure of telecommunications liberalisation in the U.S. as public telecommunications services had been provided on the basis of private ownership.

Thus, on the basis of the features of the liberalisation process that could serve as a model or an example, the *Unites States,* the *United Kingdom* and *Japan* should be mentioned, and, as a negative example, *New Zealand*, as regards the process aimed at the reorganisation of the structure of the telecommunications market.

The analysis of the telecommunications liberalisation processes of the *Unites States,* the *United Kingdom* and *Japan* are discussed in the brief summary (Paragraph 1.3, Section IV) and in the relevant general theoretical parts of this dissertation, where they are mentioned in relation to the given subject matter as elements or examples of key importance.

The liberalisation of telecommunications in New Zealand is not discussed in this dissertation because of its minor importance and also as it presents a negative example, but most of all, due to the length constraints of this dissertation.

The liberalisation of telecommunications in New Zealand must be mentioned with regard to methodology because it demonstrates a rather negative example and model of the need for and importance of the institutions of law and the regulatory methods that constitute the fundamentals of telecommunications liberalisation (see Section IV of this dissertation).

As regards the relations between a) telecommunications administration and b) the administration of economic competition, New Zealand was practically the only country to open the telecommunications market with a structure of "full competition", without elaborating regulations specific to the telecommunications sector, in line with market conditions, or an independent official structure to supervise the telecommunications market as well as the relevant authorities.
The model followed by New Zealand comprehensively demonstrated that, in the telecommunications market, in terms of state intervention required by community interests, it is unreasonable and unsuitable in itself to apply the *a)* instruments and institutions of law, *b)* law enforcement method, *c)* scopes of authorities relevant to jurisdiction and supervision, *d)* order of procedure of the general symmetric regulation of competition law as regards the administration of the functioning of telecommunications competition. Telecommunications in New Zealand, considering the entire telecommunications market is in an initial, undeveloped phase where the incumbent ("formerly state-owned") service provider was able to maintain its monopolistic position despite the opening of the market and private ownership. In this market structure and regulatory regime, the development of telecommunications in New Zealand lagged far behind that of the developed countries, causing serious economic problems, general disturbances in service provision that conflicts with community interests, as well as quality problems.

C) The historic relations, process and telecommunications policy of telecommunications liberalisation in the European Communities are not discussed separately in this dissertation due to the length of this dissertation and to conceptual reasons as well. (See details in Paragraph 2, Section II and Paragraph 6, Section III of this dissertation.)
This means that the integration, liberalisation and harmonisation of the internal telecommunications market of the European Communities are only analysed in detail in the relating general theoretical sections of this dissertation, in relation to the given subject, either as a component or an example of major importance.

D) As the features of telecommunications privatisation can be definitely distinguished, as opposed to liberalisation, the major foundations of the concept elements, structure and process of telecommunications privatisation are discussed separately in this dissertation (Paragraph 1, Section IV).

As regards the general foundation of telecommunications privatisation, the most important privatisation processes and general features of Latin-American countries are discussed briefly, because the initial basis, implementation framework, contents and effects of telecommunications privatisation in Latin-American countries show great similarity with telecommunications privatisation in Central and Eastern Europe, and in Hungary, in particular.

Furthermore, in relation to telecommunications privatisation, the telecommunications privatisation processes of a few European countries possessing developed market economies, classified according to separate models, are also discussed briefly.

The reason for the such classification according to separate models is that, further to the principles and regulatory framework of the European Communities, related to the neutrality of ownership (the neutrality of public or private ownership), the fundamentals and structure of privatisation that are closely interwoven with telecommunications liberalisation need to be analysed on the level of member states. The structure and contents of public policy-related decisions of member states taken in relation to privatisation, as well as their privatisation processes related to telecommunications are outside the scope of the telecommunications policy of the European Communities, just as the structure and regulation of its telecommunications liberalisation. (See in Paragraph 5.4 Section I of this dissertation and the methodology in Paragraph 2, Section II and Paragraph 6, Section III.)

Telecommunications privatisation in the United Kingdom and Japan are discussed in a uniform framework in the comprehensive analyses of liberalisation in these countries. (Paragraph 1.3 Section IV of this dissertation)

It must be emphasised that telecommunications reform in the United States did not involve general privatisation or privatisation process – due to the (practically) "comprehensive"

private ownership.

In the United States, the reform (privatisation), pertaining to public property, of a number of local public utility telecommunications systems in public ownership do not at all constitute major privatisation that could be deemed a process.

Thus, the liberalisation of telecommunications and the development of a competition market cannot be deemed privatisation in the United States even in the broader sense. Consequently, the United States was not discussed with regard to telecommunications privatisation for conceptual reasons.

E) The concept of telecommunications convergence that has become a basic feature of the accelerated development process of increasing economic and social significance in the liberalised telecommunications market is discussed in this dissertation independently, applying specific methodology.
In relation to convergence, Next Generation Networks (NGN - "new generation network"), that represent one of the most significant directions relating to the future and constitute a peculiar result of telecommunications liberalisation are also mentioned

As regards the evaluation of liberalisation and the analysis of its results, it must be pointed out that, on the one hand, this dissertation cannot evaluate telecommunications liberalisation comprehensively due to its subject and length constraints. On the other hand, only a short time has passed since the evolvement of liberalisation to date, which, in my view, does not facilitate the clear and comprehensive assessment of the long-term public role, effect and success of liberalisation models in social and economic processes.
Thus, the results and successes of liberalisation with regard to public interest are evaluated on the basis of specific criteria, directions and subjects, closely linked to the relating theoretical basis.

(The last section of this dissertation - Section V discusses telecommunications convergence and the NGN system).

2. The methodological basis of the subject matter of this dissertation

1) In order to clearly set the bounds of the subject of this dissertation, it must be emphasised that the history, development of state intervention in telecommunications as well as the structure and contents of telecommunications administration and telecommunications law form a precisely separable, uniform part of public administration and administrative law, in intricately interwoven with other fields of regulation pertaining to telecommunications. Thus, according to the structure of Hungarian law:
a) In addition to the rules on telecommunications administration contained in administrative law, the regulation of social relations relating to telecommunications is closely related to constitutional law, because, on the one hand, the basis of the contents transmitted by telecommunications is the freedom of expressing one's opinion, deemed a basic constitutional right (and, in a broader sense, basic communications rights). On the other hand, telecommunications is a major, continuously developing sector of the economy and of economic administration, which means that economic constitutionality, the basic constitutional rights and principles affecting the economy and also set the fundamental bounds of the administrative regulation of and intervention into telecommunications. As regards the links of telecommunications with constitutional law, the basic right to a healthy environment should be mentioned, which will become significant in relation to the health and environmental requirements set for telecommunications terminal equipment.

It is important to draw special attention to environmental aspects as, today, along with the expansion of telecommunications services, and the growing importance of its social role (e.g.: the numerical ratio of radio telephone service subscribers in Europe), almost all members of society are affected, either directly or indirectly by the environmental impacts of the telecommunications equipment used by radio telephone users. (the radiation impact of radio telephone systems constitute the most important environmental aspect associated with telecommunications and the related global research has not yet been completed.)

Furthermore, due to the unique content of telecommunications services, the regulation and assertion of the rules of data protection and data handling in relation to basic rights is also within the scope of telecommunications regulation.
b) Telecommunications law is also related to the area of private law in several respects.

Within private law, the contents of ownership and its aspects related to the constitutional protection of institutions must be emphasised, as on the one hand, telecommunications providers were in state ownership until the 1990s worldwide, and the radio frequencies and identifiers that form the basis of a major part of telecommunications services today are also in state ownership. On the other hand, following liberalisation and privatisation, telecommunications networks and services became the private property of telecommunications service providers. To facilitate the evolvement and safeguarding of competition, the specific regulation of the telecommunications sector sets strict restrictions of public law to such private ownership. As regards private law, a basic and complex borderland intertwined with telecommunications, also affecting the separation of civil law and the authorities of public administration, the right and institutions of obligation should be mentioned. The telecommunications network agreements entered into by telecommunications service providers in the so-called wholesale market and, subscribers' contracts concluded by subscribers and telecommunications service providers in the retail market fall within the scope of private law, but telecommunications law restricts all the elements of contractual freedom. The facts that telecommunications requires huge capital investments, constitutes so-called "sunk" investment costs and has a slow rate of return further strengthen its relations with private law. Consequently, in addition to the neutrality of public and private ownership in telecommunications, the regulation of the safeguarding of investments is of key importance. The extensive restrictions, limitations and conditions imposed by telecommunications law, pertaining to the relations, transformations and legal succession of economic organisations must also be mentioned as an important major factor, not to mention the strong state intervention, on the part of telecommunications administration with regard to the transparency of economic organisations.

c) In the introduction, it is important to emphasise, according to separate aspects, the relations of telecommunications with international law.

d) Within administrative law, telecommunications administration in the most general sense da) is closely related to the administration of the electronic media, as programmes are transmitted to the consumers via telecommunications infrastructure (telecommunications networks) that are within the scope of telecommunications administration (programme transmission platforms). In addition, radio frequencies that are within the scope of telecommunications law also form an inseparable basis of a number of media areas. What is more, due to the intensifying convergence processes that have evolved between telecommunications and the media, as well as the digital cutover in the electronic media, the relatively sharp line that had separated the two sectors until now (contents and transmission) is becoming increasingly blurred, which also significantly affects the contents of legal regulation. As regards the aspects of convergence, the spreading of data transmission services must be emphasised (on the network platform on the Internet, in particular), which is of major importance in the market structure of telecommunications and the media. The technological and economic development of the media is also continuous at present. The most important aspect of this development is the spreading of the almost revolutionary digital technology, which is gradually replacing the previous analogue programme provision. The digital cutover in the media will transform the clear-cut concept of programme transmission that is within the scope of media administration, and, due to the neutrality of network platforms, a major part of programme transmission will be brought within the scope of telecommunications administration. This trend will be relatively slow but steady. Telecommunications administration is db) also related to the law of economic competition. Within the scope of telecommunications law and the administration of competition, administrative law also intervenes in telecommunications economic processes to facilitate the efficient functioning of competition and uses other methods of enforcing administrative law to intervene in the relating social relations, that is, according to administrative activities based on totally different foundations and scopes of public authority .

In telecommunications administration, the prevailing regulation is a so-called ex-ante regulation, a sector-specific, asymmetric regulation which can be clearly separated from the law of economic competition and that facilitates and guarantees the evolvement and functioning of economic competition, where special institutions of law only typical of telecommunications operate.

Although, in lack of a more detailed analysis, it may seem that the scopes of authorities in media administration have more definite bounds than in economic competition law and are in more remote relations with telecommunications administration. However, more thorough studies will generally ascertain that, as regards administrative intervention and law enforcement, the administrative, official and non-official authorities in telecommunications administration are in much closer relation with the administration of the media than with the administration of economic competition.

de) The administration of consumer protection should be mentioned as regards important, theoretically assessable direct links with telecommunications. Individual subscribers' complaints related to telecommunications services, quality assurance and other aspects basically require state intervention of a consumer protection type in the telecommunications market. Consequently, the legal regulation of telecommunications also includes provisions on guarantee, pertaining to consumer protection and quality, in line with the features of telecommunications services. In general, the authorities and the legal regulation of consumer protection apply to telecommunications services, just as they apply to all services,

As regards the complexity and widespread nature of telecommunications services, the intricate contents of the applications of subscribers for official intervention and official procedures led to major conflicts of competences between authorities responsible for consumer protection and telecommunications worldwide.

e) Telecommunications has close relations with the concept of e-government and its intensifying development. The reason for this is that, as regards the transmission of signals, the network platform of e-government falls within telecommunications infrastructure, but it must be noted that, basically, this network platform forms part of non-public, closed purpose telecommunications.

Electronic government equals some sort of technological change, which, further to the development of information technology and the economy, facilitates the qualitative transformation of government and fundamental changes to governmental activities via electronic instruments, using the possibilities lying therein. E-government, with respect to the relating government programmes of strategic significance, includes the following: *a)* the comprehensive reform of public administration based on the development of information technology, *b)* the technological modernisation of public administration, *c)* the efficient accessibility of public services via electronic channels and networks, and *d)* the development of a cooperation, partnership and consultations between the government and the members of society. The government will further ensure: *e)* public access to information pertaining to government and *J)* efficient electronic transaction of official affairs.

f) As regards social sciences, telecommunications is the most closely related to the concepts and theories of communications and "information society".

g) The administration of telecommunications and the services falling within the scope of telecommunications are also determined by technical, technological and economic processes.

None of the structural forms of the telecommunications market could have formed without a technological development. Vice versa: technical and technological development was always of key importance in the structure and development of the telecommunications market, and it seems that this mode of action has become rather strong by today. Thus, technological changes are of major significance with regard to telecommunications services and products, and, obviously, these changes directly affect, via the telecommunications market, the development and change of legal regulation, Similarly, telecommunications has been a field of major economic importance from the commencement of its development and has a basic and major impact on the economic development, the commercial systems and international competitiveness of the individual countries, and, today, on all the processes and the development of the world economy and international commerce as well. Consequently, it has become an area of primary importance in the system and regulation of economic administration.

As regards methodology, the above was discussed with the aim of clearly identifying the subject of this dissertation.

Of the complex and intricate relations of telecommunications and state intervention, the dissertation comprises the following, in particular:

a) the development of the structure of the public telecommunications market, *b)* the contents and public service-system of telecommunications services, *c)* the theoretical fundamentals of state and administrative intervention directly related to market structure and the contents of public services, *d)* the structure of state ownership in telecommunications, *e)* the state monopoly in the telecommunications market, *f)* the changes in and the transformation of the structure of the telecommunications market, the scope of the reform of the public

telecommunications sector, g) the processes of liberalisation and privatisation, their general theoretical fundamentals, *h)* the regulation of liberalisation, privatisation and the structural reform of the entire telecommunications market, *i)* the fundamentals of state intervention, telecommunications policy, telecommunications administration and regulation transformed in line with the reforms, *j)* the transformation of the structure of state-governance of companies and administrative ownership and authority, as well as the prevalence, methods and theoretical fundamentals of administrative public power in the telecommunications market, *k)* regulatory and law enforcement methods, institutions of law and administrative organisational framework affecting the evolvement of competition in the telecommunications market, *1)* the relating theoretical fundamentals and structure of economic administration, *tn)* athe relations between telecommunications administration and the administration of economic competition *n)* the fundamentals the structure and liberalisation of the telecommunications market related to the world economy, international trade and economic diplomacy, *o)* the comparative study of telecommunications liberalisation and other sectors of public service *p)* the functioning of the liberalised telecommunications market and its public service contents that remain or are unchanged in certain respects, *r)* the contents and institutions of law of the ex ante, sector-specific, sector-neutral, asymmetric regulation of telecommunications, promoting competition (constituting, by all means, the most important sub-area of telecommunications law that can be defined only in a unique manner and not the entire telecommunications law), and *s)* the development processes and trends of the liberalised market structure.

2) Certain aspects and sub-areas not falling within the subject matter of this dissertation must be mentioned, indicating and expressly emphasising their close relations. (attaching, in part, to those contained in point 1) above.) That is, the following are not within the scope of this dissertation in their entirety:

A) Non-public, closed purpose, special purpose and all other non-public purpose telecommunications networks and service structure (thus, e-government).

B) Telegraphy infrastructure and services.

C) The relations and fundamentals of telecommunications law with constitutional law, private law, consumer protection, quality assurance, information society, electronic government.

D) The general administration and regulation of, telecommunications economic competition in terms of competition law, its institutions of law and law enforcement methods (with the exception of comparisons with the sector-specific regulation of telecommunications competition).

E) Within the scope of telecommunications law: *ea)* telecommunications data handling, data provision and data protection, *eb)* the structure and regulation of subscribers' or retail market (except aspects of price regulation and universal service, closely related to public services, and relations with the wholesale market), *ec)* subscribers' legal relations, *ed) the* scope and regulation of telecommunications terminal equipment.

F) Programme transmission, not even in respect of its infrastructure and service system. In part, due to the length of this dissertation, and also because, due to its special features, it would exceed the process of telecommunications liberalisation and consequently, the subject of this dissertation.

The close economic, technological and regulatory relations between programme transmission, programme content and the structure of the media market are outside the concept of telecommunications and telecommunications liberalisation. Furthermore, on the basis of its technological development, market operation and peculiar services, programme transmission, in essence, was not at all significant or did not have a major, assessable significance in the process and regulation of telecommunications liberalisation. Not even the United States or Japan are exceptions to this statement. Although in the United States and Japan, the convergence of programme transmission and telecommunications commenced earlier than in any other country, and in the US, even the convergence of the broadband platform of cable television, but these countries also commenced the liberalisation of telecommunications earlier than any other country. Consequently, in the United States and Japan, the system of programme transmission did not receive a major role due to the earlier commencement, process and results of telecommunications liberalisation.

Programme transmission is only mentioned in this dissertation at a few places, considering its essential relations with the topic or as a reference, e.g.: *a)* in the system of public services, in the analysis of *b)* GATS, *c)* the concept of telecommunications, *d)* the sub-areas of telecommunications, *e)* telecommunications convergence and *j)* NGNs.

On the other hand certain typical features of the cable television network and service system (hereinafter referred to as: CTV) must be discussed in a bit more detail with respect to telecommunications convergence (Paragraph 1. Section V of this dissertation), namely, due to its:

a) significance with respect to convergence and the NGN concept, *b)* its intensifying role in future development directions, and *c)* its features that determine its separation from telecommunications liberalisation. (See the detailed reasons for the emphasis those contained in Paragraph 6, Section III and Paragraph 1, Section V of this dissertation.)

3) As regards public telecommunications services and liberalisation, this dissertation is based on extensive comparative research that is also important with respect to the analyses and conclusions contained in Sections II and IV, in particular. The five main direction of comparative research are as follows:

a) The studying of the relations between telecommunications and other public network services.

b) The comparative and systematic analysis of the histories, systems, regulations and administrations of telecommunications in countries that possess developed telecommunications and determine the development and liberalisation of telecommunications. In my classification, the countries that possess developed telecommunications, determining the development and liberalisation of telecommunications are those that *a)* have always been in the forefront in the development of telecommunications from its beginnings until today, and *b*) were of a major significance *ba)* in the economic and technological development of telecommunications, and *bb)* the evolvement of liberalisation on a widening scale worldwide, and *c)* their economic system is a market economy or mixed economy. These countries, in my view, could be deemed "well-known" or "well-known fact" but, in the theses of a scientific dissertation, I cannot leave this concept "open", either. Therefore, the countries studied, and analysed within the scope of this dissertation, listed in the theoretical fundamentals of this dissertation are as follows: the United States of America, Japan, the United Kingdom, Germany (in the historical sections: the German Federal Republic), Austria, France, Italy, Holland, Switzerland, Sweden, Finland (and New Zealand serving as a specifically negative example.)

c) In addition to the country-level comparative study, within the scope of this dissertation, the European Communities are also analysed on a general basis.

d) In my view, the following are not considered countries possessing developed telecommunications, and determining the development and liberalisation of telecommunications, but were still analysed in certain sections of this dissertation or were included in the fundamentals of the comparative study: *da)* in a narrow scope, only with respect to the history of telecommunications – the mixed model of Southern Europe (see Section II), in relation to NGNs, on the basis of the characteristics of the administrative organisation and the concession system: Spain, Greece, *db)* Only within the scope of the mixed model of Southern-Europe, with respect to relations: South-Korea, *de)* In a narrow scope, only in relation to the description of NGNs: Canada and China. *dd)* Only as regards the impacts of the Anglo-Saxon system, universal service and the processes of the world economy: Australia, *de)* As regards possess developed telecommunications, determining the development and liberalisation of telecommunications privatisation and the administrative organisation: Portugal, *di)* With regard to the analysis on the administrative organisation of telecommunications administration: Belgium, Norway, Denmark, Ireland, *dg)* Only with regard to the external reasons of telecommunications privatisation and liberalisation and the structural balance of the world economy: Chile, Argentina, Venezuela, Mexico, Brazil, Thailand.

e) As regards telecommunications liberalisation, the analysis and comparison of the operations, roles, impacts and activities aimed at coordination and the development of telecommunications of international organisations.

Irrespective of the above, the comparative method does not play an important role and is only mentioned in the theoretical structure of this dissertation, just as in the systems set up and the concepts defined in it.

III.

The results of the research and the conclusions drawn by this dissertation

The research results, major systemic assertions and theoretical conclusions of this dissertation are as follows:

(The research results already discussed in Sections I and II of the theses, in a uniform framework with the objectives and methodological fundamentals of this dissertation are not repeatedly discussed here.)

1. The history and development of telecommunications

1) For almost one hundred years, thus after the Second World War as well, in the countries of the world, telecommunications service providers operated in a monopolistic structure and telecommunications services were provided as public market services as regards the scope of the telecommunications market and the content elements of the service.

At the end of the nineteenth century, and early in the twentieth century, both network-building and service-provision started to operate under market competition and a private economy, further to the rules of the market structure of a natural monopoly. Thus, in the initial stage of the evolvement of the telecommunications market, the natural monopoly marked the main development direction of market structure and the service system.

2) Along with the technological development and the increased need for telecommunications services, larger and larger networks gad to be built, which commenced, both economically and technologically the concentration and centralisation of capital in the telecommunications market. The development of telecommunications, the growth of networks, the enormous development costs and the realisation of the strategic and public service content of the service system in the countries under review and also led to acquisition by the state and widespread nationalisation in Europe of the independent, separately operating telephone companies already in the initial stages of telecommunications development.

Exception: North.-America, where all this left the structure of private ownership, thus telecommunications in the United States in particular developed in a rather unique direction that provided major lessons from a theoretical aspect as well and institutions that served as a model or example until the evolvement of a telecommunications market that was standardised by liberalisation, privatisation and global economic processes.

In a number or countries, telecommunications was set up within the scope of state duties and state ownership from the outset, which, became a generally followed method for organising the public sector and a model in countries where the development of telecommunications commenced at a later point in time, e.g. in Japan.

One of the most important reasons and also the basis of extensive nationalisation or the regulation of public service content is that, in the initial phase of telecommunications development, the economic and social relations the structure of the telecommunications market, the technological system of telecommunications and economic administration were not on a development level globally that was required for the elaboration of the sector-specific, asymmetric regulation of telecommunications competition.

3) Thus, in countries other than the United States, the structure of public property and state ownership became predominant in respect of public telecommunications service systems and natural monopolies. Closely related to this structure, state intervention, economic administration and regulation were largely based on: *a)* state ownership and power, the predominant influence of the state, *b)* the structure and methods established in a regime with sectoral and corporate direction, and *c)* public financial authority and the budgetary administrative order.

It must be emphasised, however, that, in the area of telecommunications services, the structure of state ownership and service provision were based on uniform fundamentals but were definitely varied in nature. Also, state ownership did not prevail comprehensively in every country. Consequently, various types of

operation developed in the public telecommunications sector, depending on the unique structures of the individual countries.

4) As regards the general uniform and common fundamentals (prevailing in all telecommunications structure and model) of all the models that evolved based on the provision and operation of telecommunications services and on the prevalence and structure of state ownership, the following must be emphasised: a) the exclusion of market competition (in a peculiar manner, in the U.S.), b) telecommunications was deemed ba) a state duty and a public service, bb) state monopoly or natural monopoly protected by regulation, and be) part of the public sector, i.e. one of the primary state functions.

In close relation with state ownership and services provided under a state monopoly, the state also protected the market by way of regulation: competition was prevented by legal regulation and exclusive rights (administrative restriction). In the U.S., market competition was prevented by the natural monopoly that developed under market conditions acknowledged and protected by regulation. The result seems similar but there are major differences as regards the functioning, structure and administration of telecommunications.

5) In the initial stage and over the course of the development of the telecommunications service structure, several models of service provision evolved: a) the state directly operates the service structure and provides the service directly (in a budgetary system or via state-.owned companies), b) A model not used too often: the state authorises or designates certain private companies and organisations to perform telecommunications services within the scope of engagements, administrative contracts, concessions or various alternative solutions (thus, mainly in the form of co-ordinated co-operative legal relations), c) state intervention introduces detailed and guaranteed regulations, comprehensive community control and pricing restrictions in the telecommunications market and service structure operating under private ownership and via private entities.

6) As regards the most important organisational forms of telecommunications service provision, the following need to be mentioned in terms of legal status: *a)* budgetary organisation, *b)* state administration organisation, *c)* public company, *d)* private company (generally in the form of a corporation), *e)* cooperative society, *f)* social organisation, and *g)* economic organisation in mixed (public and private) ownership.

7) In general we can say that, until the spreading of liberalisation, the most widely used structures in the telecommunications sector (together) were the following: *a)* the organisational, economic and operational union of telecommunications and the post, *b)* the structure of state monopoly and state ownership, *c)* as regards international relations, telecommunications relations between the states and network cooperation between the states and state-owner service providers. The generally accepted and used name of this structure and concept is the "PTT model" (PTT - Post, Telegraph and Telephone).

Within the various unique methods and principles that evolved and were applied over the development of telecommunications in individual countries, certain types or models can be also definitely identified within the PTT structure that facilitate the uniform systematisation of the institutional forms of telecommunications service provision.

8) As regards the development, operation and regulation of telecommunications, the contents and administrative service structure of state intervention and the ownership structure, the following models can be identified in the individual countries (prior to liberalisation): a) the telecommunications of the U.S., under private ownership, the development of which can serve as a model or example, b) the telecommunications of the United Kingdom, c) the German-Austrian-French model, d) the Southern-European model, within it, in particular, the telecommunications of Italy, e) The Scandinavian model and, within it, the Finnish telecommunications system, quasi unique in the world.

Another model that needs to be mentioned is: f) the telecommunications of Japan and certain newly industrialised Far-Eastern countries that implement enormous telecommunications developments.

9) On the then prevailing technical and economic quality level, the natural state monopoly of telephone (or: fixed) service was clear-cut and easy to protect, and, for a long time it seemed that this is the most efficient market situation in telecommunications. Thus, monopolies prevailed in the telecommunications markets of almost all the countries, and, in most countries, it was the only existing market structure. What is more, in the majority of the countries, no market structure other than a

monopolistic structure existed until liberalisation commenced.

One of the most definite exceptions is the United States, where the evolvement of the monopoly was preceded by a lengthy competition that lasted for almost 40 years and that was much more intensive and fierce than today's competition.

10) However, the telecommunications monopoly and the mechanism of public service provision became inoperational, obsolete and unreasonable both from the aspect of technology and the economy and thus required fundamental market and structural changes. Also, along with the fast growth of telecommunications demand on the part of the economic and society, the public telecommunications system no longer generated considerable sources for the central budget and, instead, it required enormous investments and was in need of considerable external financing.

From this it follows that (with the exception of the countries possessing developed telecommunications systems) the worse the situation of the state budget was, the more accommodating the government was in respect of the state ownership of telecommunications. - (e.g.: Latin-America.)

11) The fast-paced technical and technological development of telecommunications, and its gradually increasing influence on the development of the entire economy simply rendered inevitable the commencement of processes aimed at the elimination of natural and state monopolies in the telecommunications market.

In general, we can ascertain that a) the necessity of the occurrence of telecommunications liberalisation can, in part, be separated from the interests of certain countries to maintain the state monopolies in telecommunications, b) The commencement and the entire process of the opening of the telecommunications market possesses independent, identifiable features as opposed to the general reform of the public sector and waves of liberalisation associated with the reduction of public spending, usually of a short term and of sporadic nature.

12) As of the 1970s, the significance of the monopolistic market structure has gradually diminished in the field of telecommunications and was replaced in a growing number of telecommunications market segments by a form of competition that is generally rather unsatisfactory. (A definite process that can be deemed telecommunications liberalisation first commenced in the United States.) The diminishing of the role of monopolies, market opening and the transformation of the market structure became global phenomena in the 1980s.

2. The fundamentals of public market services; telecommunications as a public service

1) An element of primary importance of telecommunications administration and its economic administrative structure is the public nature of telecommunications services. This is so because telecommunications was always clearly considered a service, and, within the category of services, it was always a public service, and was also within the scope of public goods, in a certain respect.

2) The most general and perhaps most important classification of public services is based on a market-related criteria, according to which public services are either market-based or non-market-based. The common feature of market-based public services (or core economic services) is that they generally serve public needs and community interests, via the so-called public utility companies.

As regards economic and market-based public services, in my view, it is not o major importance to identify public utilities on their own. That is, public utilities and market-based, economic public services can also be considered synonyms on a general level of concepts and with respect to the functions of economic administration.

The most typical market-based public services are: electric energy, heating service, gas service, drinking water supply, sewer system, railroad, public road transportation, aviation, forwarding, other public transportation, postal and telecommunications services (programme provision and transmission).

Market-based public services can be provided via the market but they are typically deemed goods that can be consumed collectively and their typical feature is that anyone can be excluded from their consumption.

The market based public sector, *in general,* is inseparable from the infrastructure that provides the fundamentals for the provision of the service, and the quality, extent and operation of this infrastructure are major factors in terms of the entire national economy.

3) Complete geographical penetration and full service provision are not the conceptual elements or

requirements of economic public services as the comprehensive service often cannot be provided due to the social and economic development of a given country (or another e.g. geographical factor).
As regards the content of public services, the main aspect is that the state, using various methods, directly intervenes in the order of service provision, thus transforming certain market processes.
In the case of public services, there are two main types and two main sets of instruments of direct state influence: A) The state provides the service itself, that is, the state operates the system, a) the service is provided by separate companies or according to direct budgetary allowances, b) with the exclusion of market processes or in a restricted market structure, c) Furthermore *ca)* free of charge or *eb)* on a non-profit basis or *cc)* against a consideration, fee payment or a under market-related pricing. B) The state engages market processes and private entities to provide the service but strictly regulates the entire mechanism of service provision via economic restrictions resting on public law, affecting almost all market segments, introduced as regulations with public service content.

4) As regards the concepts that determine the basic contents of public market services and that differentiate the same from the services of the private sector, the following must be noted:

a) Depending on the type of service, the state applies various regulation-based guarantees and obligations to ensure a penetration that is as complete as possible if the service cannot be replaced. In this respect: b) an obligation of service provision defined in legal regulation prevails, of which the service provider can only be exempted upon the existence of well-grounded technical and economic reasons that are regulated with guarantees, c) an applicant cannot be excluded from a service upon the existence of all the conditions applicable to the use of such service, set forth by law, which must also be ensured in statutes, d) In general, the service provider must provide the service at a reasonable price, free from discrimination, on a continuous basis and this is usually guaranteed by extensive price regulation, e) the service is, in general, closely based on the basic needs of a community, the assertion of certain basic constitutional rights or human rights (in line with the regime existing in the given country) and the operation and development of the economy. f) A unique structure of responsibility, qualitative and other requirements, security and strategic elements must prevail as regards the service.

5) As regards the theoretical basis, it is of primary importance that, within the scope of the services, the type and quality of the ownership structure is not deemed a major feature that serves differentiation purposes in respect of the contents of public services and the fulfilment of state duties.

(That is, the public service contents of services cannot be qualified purely on the basis whether the given service operates in a structure of state, public, private or mixed ownership.)

Thus, state ownership is not an explicit conceptual element or requirement with respect to the public service content of an activity or service.

6) In my view, it is essential as regards taxonomy that, in the ownership structure of public services, the ownership structures of: a) the activity, the service, and b) the organisation providing the service can be distinguished.

A a) state-owned company, state economic or other organisation, and *b)* the state duty and the public service itself can be privatised on their own, independent of the other. What is more, the privatisation of one does not require the concurrent privatisation of the other.

This means that the a) state ownership (public service content, the service provision obligation of the state: thus the public scope of the service) of a given activity or service and b) the ownership form of the organisation performing the public service can be separated from each other.
In close relation to the above, it can be generally ascertained that the essence and identification criteria of public service structure and public service content lie within: state ownership, state monopoly, public service regulation and the exclusion or restriction of market competition and not within the organisation that provides the service.

7) Thus, in the long term, fundamental structural changes to the public sector, the market of public market services can only be achieved via the concurrent, uniform and interrelated implementation of liberalisation and privatisation in a narrower sense. The concurrent implementation of liberalisation and privatisation requires profound and prudent consideration on the part of the government of community interests and public interest, as in a number of sectors, the

opening of the market to competition and the reduction of state ownership did not turn out to be a more efficient solution or one that increases the well-being of the community. We can also generally state that: a) Extensive liberalisation and privatisation will not change – in general – the public service or "basic need" content of a given public service or the public nature of is provision. b) The only rational, justifiable and real purpose and significance (practically the only basis of their necessity) of liberalisation and privatisation is the improved service of public needs, increased social well-being, laying down the foundations of economic and social development (and, in a narrow sense, increasing the efficiency of the system of public finances, the budget and the public sector).

8) If we consider natural monopoly from the aspect of public services, we can state that a major part of network public market services have a background infrastructure that involves the development of a natural monopoly from the outset.

Consequently, in the market mechanism of a natural monopoly of public network market services, structural changes to the function of public service (liberalisation, privatisation and perhaps the termination of a public service function or content) would not lead to the complete termination of the monopolistic position in the market (e.g.: motorways, railroads, airports, electric energy networks, the so-called local network or local loop in telecommunications).

In this case, due to the impossibility or economic irrationality of building a parallel network in a manner appropriate for the public interest: a) a monopoly cannot be eliminated via regulatory methods, or b) the commencement of market competition can only be ensured as part of detailed sector-specific regulation.

Thus, as regards the liberalisation of networks that can be specifically shared (e.g. railroad, airports, motorways), but that cannot be replaced by the building of alternative networks, the liberalisation and privatisation of the infrastructure and the service built on the same are, in general, separated: that is, privatisation and the opening of the market before competition only relates to the service built on the infrastructure. The infrastructure remains in the ownership of the public sector and, in a number of cases, the in full state ownership and the market is not opened for competition.

9) To facilitate the accuracy in the use of terms, it must be noted that we can state only under the economic conditions of today that the concepts of natural monopolies and public economic services are identical.

In developed market economies, the national monopolies that possible developed in the course of market-based processes (the mechanism of market competition) in the production sector (e.g. car manufacturing), were actually terminated and transformed by the development of the world economy, international economic and commercial relations, and the competitive situation brought about by trade and globalisation.

10) Due to the increasing divisibility and stratification of economic activities, no entire sector or industry can be clearly deemed a natural monopoly or a public economic service, even if a part of its activities is considered a natural monopoly or a public economic service. Currently, in the overwhelming majority of the sectors deemed natural monopolies or public services, the market structure of a national monopoly only exists in certain economic segments or given sub-areas.

11) As regards natural monopolies, the fundamental basis and scope of state intervention are determined by:

a) the structure of direct state ownership and the maintenance thereof.

As regards natural monopolies, the most important reason and the purpose of direct state ownership as well is that the state may set the price of a service or product on a level that, in principle, can efficiently ensures the balance of well-being and public interest against the generation of the highest possible level of profits.

b) and, on the other hand, the methods of a price regulating state intervention ensuring efficiency and the proper provision of public service, as well as the resolution of economic and social relations connected with pricing.

12) In the telecommunications sector, with regard to telecommunications services, until the technical, technological and economic development got to a level where it induced brought about liberalisation, the content and nature of public service, mainly equalling landline telephone service (or fixed

telephone service), fully prevailed. The process of telecommunications liberalisation also equalled the liberalisation of the mainly landline telephone service, in line with the characteristics of the various sub-areas of telecommunications. Thus, public services in the telecommunications market, in general, can be identified with landline telephone service and the infrastructure of the landline telephone network.

Until the last third of the twentieth century, on the basis of technological development, the telephone network, telephone switches that constituted the fundamentals of landline telephone service, as well as the operation and management of the network were deemed a public utility network with no possibilities for sharing, due to the impossibility of building a parallel network and the rather restricted capacities facilitated by bandwidth and technical possibilities.
Consequently, both *a)* the building of an alternative, parallel replacement infrastructure, and *b)* the implementation of an infrastructure-based competition and *c)* the sharing of the network, that is ensuring access to the network for other service providers (the provision of parallel services in a network) was impossible from the outset (thus it was never raised). Thus, there was no other service that would have been equal to and could have replaced landline telephone services.

Thus, the infrastructure of the landline telephone network and landline telecommunications service (including telematic, additional value-added services that were considered novelties at that time) was clearly deemed natural monopoly that operated in almost all countries as an exclusive, primary public market and economic service provided by the state, protected by special rights, specifically regulated and separated from the relations of market economy.

3. General conclusions elaborated in relation to telecommunications liberalisation and privatisation

1) As regards the reasons that led to the elimination of natural telecommunications monopolies protected by the state, the structure of privatisation that has become general and the commencement and emerging of market liberalisation, the following can be mentioned:
a) Internal (telecommunications) reasons in line with the features of telecommunications (stemming from the characteristics of telecommunications) that can be divided according to technological and economic aspects, and
b) External reasons that generally determine liberalisation with respect to the development of the world economy, the international financial system, international trade and trade policy.

2) It can be generally ascertained that the process of the liberalisation and privatisation of telecommunications are directly related in both time and content, and the realisation of the need of privatisation and liberalisation and the requirement of their evolvement coincided with the external reasons affecting liberalisation and their general mechanism of operation.

However, as regards market-based public services outside the telecommunications sector – liberalisation was only generally popular for a short period of time. The wave of liberalisation that presented itself in the public sector, public policy, economic policy and legal policy was rather a general “flare” in the individual countries.

Thus, within a short time, the initial comprehensive, large-scale reform and liberalisation process that developed with regard to public services outside the telecommunications market and that was seriously desired by the individual states came to a stop, slowed down, (with the exception of a number of primarily “Anglo-Saxon” countries) or completely stalled.

3) Telecommunications liberalisation, as regards its concrete implementation, the actual comprehensive elimination of market restrictions, the development of market competition and the privatisation process, taking into account its content, impact and periods shows significant differences from other sectors of market-based public services and the scope, features and comprehensive processes of liberalisation, generally spreading on a global or international level.

4) We can also generally ascertain that telecommunications liberalisation would have commenced irrespective of the external reasons, that is, from the extensive, initially general liberalisation process and reform of the public sector and market services.

5) In the global, general processes of liberalisation, privatisation and the reform of the public sector telecommunications: a) set-off in a unique, independent direction that also had a fundamental impact on other sectors. b) On the other hand, telecommunications developed a liberalisation process that evolved the most successfully among market-based public services – until now. c) Thirdly, it indicates rather special relations with and constitutes a certain precondition ca) of the structural reform of the public sector in other industries, and cb) the general processes of liberalisation within the framework of the world economy, international trade, the international financial system and other economic relations and those of public finances.

4. Fundamentals of the reform, liberalisation and privatisation of the public telecommunications sector and their features related to public service content.

1) In terms of market-based public services, it is a fundamental characteristic of telecommunications liberalisation and privatisation that, apart from a few exceptions, they have been fully implemented in countries possessing developed market economies and telecommunications.

We must emphasise, however, that restricted telecommunications resources remained in state ownership and in the public sector.

This means that, on the basis of economic and technical development, in terms of the public telecommunications system, a) liberalisation fully opened up the structure of market and economic competition, strengthened the extent of market freedom and involved private interests on a larger scale, b) With regard to extensive telecommunications privatisation, the transfer of ownership has become general worldwide, as opposed to the initially applied various contract-based versions (administrative contracts, concessions, etc.).

2) One of the key fundamentals of the features pertaining to public services is that liberalisation and privatisation does not change the public content and public significance, economic and social impact of a given service(of special significance in telecommunications.)
Thus, we must note that the continuously expanding and developing service structure of telecommunications possesses general and uniform features typical of public services in a privatised and liberalised market mechanism as well.

If the market mechanism, the structure of market competition is unable to efficiently operate the entire service structure of telecommunications or its sub-area possibly indispensable on a given economic and social development level, the assertion and regulation of the guarantees of public services becomes inevitable.

3) On a global level, a unique establishment, related to the concept of public services, of a telecommunications service structure operating under market conditions is universal service.

4) Apart from the universal service, with respect to the functioning of the telecommunications market, network services regulated within the scope of network cooperation between service providers possess a unique public market content (cooperation where the obligation of concluding a network contract prevails, in particular.)

Thus, a network service system can be considered a public market service both in a broader sense and in particular, on the basis of a) its structure constituting a basic condition in the operation of the telecommunications market, b) its features determining the relations between service providers c) its indirect impacts affecting consumers, and d) the content of regulation.

5) As regards the regulatory structure of the public service content of telecommunications following liberalisation, we must further note: a) On the one hand, an element or type of regulation of public service content continues to exist in all the branches of telecommunications, b) on the other hand, features constituting major sub-elements of public service content (not constituting a conceptual condition), such as the obligation of service provision, social aspects and fundamental needs only continue to exist within the scope of universal services.

6) In terms of natural monopolies, the processes of liberalisation and privatisation will not be able to change the fundamental basis and functioning of market structure. The monopolistic structure of public service markets functioning as natural monopolies will not change following liberalisation and privatisation. The reason is that, within the scope of natural monopolies, market competition is unable to evolve on the basis of its own drivers, that is, economic rules.

In general, we can say that, on the basis of the enormous technical and economic development of telecommunications and the considerably reduced costs related to service provision and the infrastructure, the telecommunications market and service structure was not deemed a natural monopoly at the initial stages of liberalisation (apart from a few exceptions, such as.: certain areas of the local network - local (subscribers) loop, satellite telecommunications).

7) Increased social and economic efficiency is the fundamental and evident advantage of market and economic competition, as a functional competition: *a)* ensures more efficient management and economic discipline than any regulatory method, and *b)* on the other hand, ensures a more successful economic operation than any planning or organisation that can be deemed "artificial" (e.g.: state or public policy).
However, market competition and private ownership structure on their own do not guarantee the achievement and successes of social and economic efficiency.

8) As the success of the reform of the public sector was initially rather incalculable from several respects, and involved a number of hazards, the liberalisation of public market services and the opening of the market before competition are basically less risky, and, as regards the organisation of public services, represent a process that is of more significance than privatisation.

It must be noted, however, that as regards a liberation structure lacking the parallel process of privatisation, that is, an extensive state ownership that has remained in the structure of market competition, the neutrality of public and private ownership, guaranteed by regulation constitutes a fundamental condition of the operation of market competition.

9) In the liberalised telecommunications market, the main types of sector-specific institutions of law, and within their scope, those associated with public goods and services and the functioning of market competition are as follows:
A) As regards consumers and social impact, universal service is an institution of law with guaranteed and distinguished public service features, directly related to service provision to consumers and the social and information society related impacts of telecommunications.
B) As regards market competition: the rules and institutions of law that ensure the essential content of liberalisation, that is, the development of market competition and its functioning that is more efficient than the public sector and more appropriate with respect to community interests are as follows: a) the regulation of basic telecommunications tools and public goods that remained in telecommunications to date, that is, of limited resources, b) the asymmetric counterbalancing of the market power of telecommunications, c) the scope of network cooperation, network relations and network services, in particular: interconnection, access, local loop unbundling and local bit stream access, d) As a specific institution of law in the retail market: the selection of an intermediary, e) General institution facilitating competition: number portability. "Technical regulation".

10) Network infrastructure and the service structure were not separated over the course of telecommunications liberalisation, that is, privatisation and the process of market opening equally affected both.

(Not including the transitional methods used in the initial phases of special liberalisation processes that preceded the liberalisation in the individual countries.)

This must be emphasised as, in terms of network services, the liberalisation of the infrastructure and the service based on it can be separated. Upon the separation of the infrastructure and the service, the market will generally open with regard to services, but the network structure remains within the scope of the public sector.
The criteria used for separating the infrastructure and the related services will largely determine the fundamentals, process and evolution of liberalisation and privatisation, the results and impacts of market opening and the functioning and development of the liberalised market structure.

It follows from the unified liberalisation of the infrastructure and the service structure that telecommunications liberalisation, most of all, rests upon the factors and structures that create a

secure balance between a*)* the infrastructure and *b)* the service-based competition.
In the process of telecommunications liberalisation, the infrastructure and a service-based competition will only facilitate the functioning and development of market competition and service provision in the public interest in a uniform manner, in proportion to and in consideration of the other. This means that, in the long term, neither will guarantee the success of liberalisation on an exclusive basis or if too much emphasis is laid on either of the two. Thus, it is a basic requirement with regard to the sector-specific regulation of a liberalised telecommunications market that is must facilitate a balance between the infrastructure and the service structure in line with the conditions of the telecommunications market.

5. Structure of telecommunications administration, and, within its scope, the issue of the regulatory authority

1) With regard to telecommunications administration, the former institutions lacking structure were closed down, under which, in the telecommunications market, the state had four key functions or roles in a uniform framework:

a) owner *(in general,* the service provider that provides the service and also the owner of the service or telecommunications task), *b)* governs the branch and the company, *c)* exercises official state duties and functions that relate to telecommunications, and *d)* perhaps the subject of the concession legal relation.

2) As regards the organisational structure of telecommunications administration, there are a number of models, of which only the telecommunications regulatory authority can be deemed a generally applied organisational solution in the world. Of major organisational models (other than a regulatory authority), we must mention the following: a) state telecommunications tasks are exclusively performed within the structure of ministries, b) the administrative organisation that also controls economic competition in general (economic competition authority etc.) also performs public authority and other state functions in telecommunications.

3) As regards the organisational models, we must emphasise in a general sense that, in respect of the public operation of the telecommunications market and the liberalisation process, the positioning of telecommunications administration functions within the state organisation is of no major significance, with three exceptions to be noted:

A) It is not advisable to engage an administrative organisation that manages state property possibly maintained in the telecommunications market to perform or to hierarchically control telecommunications administration and enforcement functions even if secure guarantees are provided regarding the equality of public and private ownership. B) Further to the development and peculiar operation of a liberalised telecommunications market and the typical features of market competition, it is of primary importance to separate, both on an organisational and a professional basis: *a)* activities associated with legislation, the taking of strategic decisions pertaining to telecommunications policy, international coordination functions, fundamental state duties related to the public service content of telecommunications, social aspects, telecommunications development and support functions *b)* from individual jurisprudence, official supervision (from performing individual authoritative and official competences and duties). C) In principle, the functions of telecommunications administration can be positioned, but cannot be operated efficiently within the scope of a state organisation that governs economic competition or in a so-called multi-sector authority.

However, it can be generally and clearly stated that it lacks all rationality, public guarantees and efficient performance of tasks by the state in all respects, if, due to the lack of the sector-specific regulation of telecommunications, telecommunications administration becomes part of the organisation of the competition authority that, in general, regulates economic competition (e.g.: New Zealand).

4) The most generally used state functions, duties and competences of public authority and law enforcement as well as non-official tasks related to telecommunications are most frequently performed within the organisational model and framework of the telecommunications authority. The difference of the regulatory authority from other types of authorities does not lie within organisational independence or legislative power. In a number of cases, such authorities cannot even be deemed independent administrative organs, only their name is “authority”.

In part, it is due to the origin and to the peculiar international processes that although regulatory authorities exist all over the world but, in many cases, only in their names, which means that the name of their organisational type

is simply "translated". In most of the countries where the regulatory authorities operate within the organisational structure of the state, the concept of regulatory authority equals an organisational model or category that is not elaborated in legal theory, is foreign to the practice of jurisprudence and cannot be interpreted, as regard its legal status, within the scope of a "traditional", organically developed state institutional structure that reflects national characteristics. Thus, apart from their names, regulatory authorities cannot be deemed independent organs and their name does constitute distinguished, acknowledged terminology in a number of countries.

5) As regards regulatory authorities, only the activity can be deemed, in a national comparison, a uniform and general feature, because market-based network public services globally operate in a uniform manner as regards a number of their features.

This means that the only real, globally used, typical feature of the regulatory authorities that generally regulate liberalised public market services is their unique activity that, largely irrespective of state structures and legal systems, differentiates them from other types of administrative organisations.

Their unique activities do not, even in part, involve legislative activities, but, in particular, the following:

a) market regulation, *b)* market supervision, *c)* dispute resolution, *d)* market protection, *e)* the "operation" and maintenance of market competition in the public interest, facilitating its efficient operation, *f)* the unique safeguarding of consumers' rights and interests, *g)* preparing scientific, statistic and strategic decisions, *h)* guaranteeing the public interest and public content existing in the competition of services*)* developing efficient cooperation with market players, *j)* preparing legislation, *k)* preparing or performing, within a certain scope, international cooperation and coordination duties, *1)* non-official market analysing-assessing functions, service provision activities.

6) Currently, the most generally applied model that also constitutes the development direction of regulatory authorities is as follows:, a regulatory authority that operates as a uniform organisational structure of administrative functions pertaining to the electronic-digital media, media management, frequency management and telecommunications (in certain cases, to information technology and the Post) in line with the development of telecommunications and the extensive convergence.

7) As regards the fundamentals of the independence of telecommunications regulatory authorities, the following structures pertaining to independence can be distinguished:
a) one that needs to be ensured with regard to the organisation and activities of the authority, b) one that is within the state organisation, and c) one that needs to be asserted in respect of market players and market relations.

8) In relation to the legislative power, it needs to be noted that, in a number of countries, even in those where the regulatory authority is considered a relatively "foreign" institution, regulatory authorities possess, within the function of market regulation, extensive normative decision-.making power of a "general force". Furthermore, they are extensively authorised to authentically interpret the relevant statutes outside the scope of individual cases, using various normative methods (e.g.: recommendation, guideline, announcement, decision of principle).

The issue related to the introduction or the scope of the powers of regulatory authorities, that are a) of a normative nature, generally containing recommendations or guidelines, or b) general regulatory decision-making powers of principle, of a wider scope than the individual assertion of rights are permanent "agenda items" in almost all the countries where liberalisation is under way.

6. Analyses and assessments pertaining to the specific liberalisation of telecommunications sub-areas within the uniform structure of telecommunications liberalisation

1) The telecommunications sub-areas, sub-markets and services that can be distinguished on a technological basis, or on the basis of other specific features interwoven with the network or services are not significant on their own with respect to telecommunications liberalisation, on a general level (the contents of the regulatory policy, the principles and concepts and basic structure of regulation.

2) One of the most important and essential features of the contents of uniform telecommunications

liberalisation is that the liberalisation of sub-areas *a)* was based on the liberalisation process of the telephone service that became general on a global scale, and *b)* was closely related with and inseparable from the liberalisation of the telephone service, constituting a basic structure of some sort. This means that the liberalisation of the sub-areas of assessable importance as regards liberalisation, defined in this dissertation (listed in Paragraph 1.3 Section II of the theses) were based on the commencement and evolution of the liberalisation of the (fixed) landline telephone network and service system, practically as a precondition.

On the basis of the above, the liberalisation or, privatisation, as necessary, of the infrastructures and services of telecommunications sub-areas can be analysed profoundly, either theoretically or in terms of regulation, only by reason of its specific features and relations distinguishing it from the liberalisation of the telephone service markets.

3) Satellite and mobile telecommunications - by virtue of their specific features – are rather different fields of wireless telecommunications; irrespective of the former, their significant similarities can also be identified as regards the content of liberalisation.
Thus, the regulation and liberalisation of the two wireless markets of key importance within the scope of telecommunications liberalisation can be divided into main sections: a) principles and institutions of law of regulatory policy that were equally asserted in both fields (theoretical conformities), b) principles and institutions of law of regulatory policy, where the two wireless fields show different characteristics.
Furthermore, the liberalisation of both fields can be comprehensively divided according to the same classification. The processes, contents and, most of all, the institutions of law of the liberalisation and privatisation of satellite and mobile telecommunications can be equally divided in two groups on an international level:

a) Within the generally uniform liberalisation structure of telecommunications, the liberalisation establishments that, taking into account the features of these two fields are expressly and specifically related to the successful opening of the markets in these fields. Thus, they were elaborated in order to lay the foundations for the liberalisation of the mobile telecommunications and satellite service markets.
b) The establishments and institutions of law that are related to the specific features of these fields but their only regulatory goal is the promotion of the entire liberalisation and development of the telephone service (and, peculiarly, of the internet) – via these fields.

4) The development and opening, with market-related and commercial purposes, of the internet, analysed in more detail in this dissertation, does not fall within the concept of liberalisation and can only be deemed privatisation in a rather broad sense, either.
It should be noted, however, that the freedom and unregulated nature of the internet are, in general, overly emphasised, just as its generally applied “self-regulation”.

7. The concept of telecommunications assessed in relation to the impacts of telecommunications liberalisation

1) In my view, the uniform concept of telecommunications that clearly and explicitly define the contents and bounds of telecommunications in practically all the countries and telecommunications market structures (see Paragraph 7, Section IV of this dissertation on the specific features and additions): a) The service content of signal transmission that equals transmission in the form of electro-magnetic signals, b) the telecommunications network that serves as the framework for and facilitates the transmission of the signal, c) The telecommunications infrastructure that comprehensively ensures the transmission of signals and comprehends the concept of the telecommunications network. As regards the telecommunications infrastructure and signal transmission, the radio frequency that constitutes a special section of the telecommunications infrastructure and signal transmission should be mentioned d) The transmission of signals can be directed or undirected. e) Signal transmission without changing the form and content of the transmitted information, f) The content of the signal transmission is “neutral”, g) As regards the number of end points, any combination is deemed telecommunications if it is based on the signal transmission system, h) the identifiers that constitute the basis of the telecommunications infrastructure and signal transmission service, i) Publicly available service structure. (This latter concept element is difficult to identify and there may be major differences in countries and regional integrations.)

The infrastructure and service structures defined by the above concept elements (services) fall within the concept of telecommunications and the bounds of the telecommunications market. This conceptual framework determines the regulatory structure, extent, functions, scope of activities and the competence and procedure-related mechanisms of telecommunications administration that can be distinguished on the basis of state intervention.

2) It must be noted that, from a scientific point of view, two basic concepts are widely used in respect of telecommunications structures and services: telecommunications and communications.

The concepts of telecommunications and communications are used parallel today as well, thus it is not a well-founded statement that telecommunications is the traditional whereas communications is the modern concept of the signal transmission services defined above.

8. Theoretical aspects defined in relation to the development directions of the liberalised telecommunications

1) In the field of telecommunications, convergence mainly prevails according to its meaning defined in economics, but tailored to the peculiarities of telecommunications and, in particular, "adapted" to the technological development of telecommunications.

Convergence is a concept applied and elaborated in a number of scientific fields, the meaning of which (bending towards each other) is basically and spectacularly expressive with regard to the unique technological and market development of the telecommunications infrastructure and service system.

On the other hand, it can be generally ascertained that the theory of convergence in the field of telecommunications cannot be deemed a scientifically founded theoretical system. The reason for this is that, by virtue of the internal characteristics of the concept of convergence and the methods used for its analysis, telecommunications convergence cannot achieve or present assessable scientific results.

As regards independent telecommunications convergence theories, we can state that, in addition to a properly spectacular classification and a simplified terminology, they refer to a theoretical system that is basically unsuitable for evoking scientific, market, regulatory, or technological impacts.

Thus, telecommunications convergence is theoretically important in two major respects: *a)* in the field of telecommunications, it serves as a really expressive concept and a comprehensive term, and *b)* ensures major classifications, determining its real value, which can be efficiently used in scientific fields interwoven with telecommunications and within the framework of international comparative studies of primary significance.

2) As regards the main areas of convergence that can be distinguished (the areas of convergence also comply with the process of liberalisation in a number of respects) the following should be mentioned: a) convergence within the areas of telecommunications that can be deemed traditional, b) the "convergence" of telecommunications and information technology: telematics, c) On the strength of the digital technological development, the convergence of telecommunications, information technology, the electronic media and the internet, of special importance.
Currently, by virtue of the fast-paced development in digital technology, the concept of convergence in the general sense is used with regard to the latter type of convergence, defined in point c).

(Within this scope, the convergence-related phenomena and impacts of programme transmission, the market of the electronic media, media management and audio-visual, bi-directional, interactive content framework may create, due to their characteristics, an independent, distinct area within the system of telecommunications and info-communications convergence.)

3) As regards today's unbelievably fast development processes of convergence that are strengthening within the scope of telecommunications liberalisation, the most important development system and concept is the uniform concept of Next Generation Networks (NGNs), on the basis of their key impact on the entire telecommunications market, comprehensive on an international scale as well.

IV. Major publications on the subject

1; *A hatósági ellenőrzés.* In.: A közigazgatási hatósági eljárások joga, Patyi András (editor), Győr, UNIVERSITAS-GYŐR Kht, 2005, pp. 217-229;
2; *Az elektronikus hírközlésről szóló törvény magyarázata.* Complex Kiadó, Bp., 2006.; (Szerkesztette: Rozgonyi Krisztina, Aranyosné dr. Börcs Janka, Spakievics Sándor, Bánkúti Erzsébet, Misák Piroska Tünde), pp. 54-96, 112-117, 133-143, 154-173, 188-190, 210-247, 309-311, 361-362, 400-408
3; *A hatósági döntések.* In.: Közigazgatási jog II., Patyi András (editor), Bp., Dialóg Campus Kiadó, 2006, pp. 311-361;
A hatósági ellenőrzés. In.: Közigazgatási jog II., Patyi András (editor), Bp., Dialóg Campus Kiadó, 2006, pp. 395-431;
Az elektronikus ügyintézés. In.: Közigazgatási jog II., Patyi András (editor), Bp., Dialóg Campus Kiadó, 2006, pp. 639-670;
4; *Hírközlési Igazgatás I. A hírközlés fogalma, fejlődése, a hírközlési piac működésének nemzetközi folyamatai, szabályozása az Európai Unióban.* In.: Közigazgatási jog III., Gyurita Rita (editor), Győr, UNIVERSITAS-GYŐR Kht, 2007, pp. 176-212;
Hírközlési Igazgatás II. A magyar hírközlési piac sajátosságai, fejlődése, a hírközlés igazgatás szabályozási rendszere hazánkban. In.: Közigazgatási jog III., Gyurita Rita (editor), Győr, UNIVERSITAS-GYŐR Kht, 2007, pp. 213-253;
A médiaigazgatás. In.: Közigazgatási jog III., Gyurita Rita (editor), Győr, UNIVERSITAS-GYŐR Kht, 2007, pp. 471-514;
5; *Some Relevant Aspects of the Legal Dispute in Public Administration Communications Law in Hungary.* In.: Days of Public Law, Valdhans, Jiri - Sehnalek, Dávid (editor), Brno, Masaryk University Faculty of Law, 2007