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Dr. Nikola Popović*

Nikola.Popovic@hakom.hr

Horizontal approach to network industries in Croatia

Introduction

More than two decades ago in European Union law, competition has begun to be introduced in economic activities organised traditionally under the concept of services of general economic interest. Special and exclusive rights have gradually been abolished in important industries like telecommunications, post, energy or railways. European Union policy has opted to prioritize efficiency over social issues in those industries by adopting liberalisation agendas. Previous monopolies have undertaken long restructuring processes to meet upcoming competition. However, entering and positioning in the market has not proven to be a short process for new-comers either. Although these network industries display differences among themselves, common trans-sector issues exist that allows a horizontal approach. This brings into focus the actual role of different national regulatory and competition authorities and the ways of coordinating their function in multisector patterns in the future.

I. General approach to network industries

In Croatia the market regulatory function in relation to liberalisation processes in network industries is institutionally fragmented. It is organised and split among the national competition authority (*Agencija za zaštitu tržišnog natjecanja, AZTN*¹), and specific national sectoral regulators in electronic communications and post (*Hrvatska agencija za poštu i*

*The author's views expressed in this paper are personal and do not necessarily reflect the views of HAKOM and ARTZU, where the author is employed as Council member. He was formerly also Council member at AZTN.

¹www.Aztn.hr

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elektroničke komunikacije, HAKOM²), energy services (*Hrvatska energetska regulatorna agencija*, HERA³), and railway services (*Agencija za regulaciju tržišta željezničkih usluga*, ARTZU⁴). General competition rules in Croatia are implemented by AZTN. Their orientation is predominantly *ex post* application and they cover prohibited agreements, abuse of dominant position, merger control and in a wider sense state aid control. Regulatory rules are normally part of specific laws implemented by HAKOM, HERA and ARTZU respectively in this case. They mainly cover particular issues related to functioning of these industries like market and network access and services of general economic interest. Their application is predominantly *ex ante*.

Modern societies recognise network industries as vital for social, cultural and economic development. Transport, energy and digital connectivity is seen as a precondition for EU market to grow and is recognised by the term - Connecting Europe Facilities⁵. Organised societies strive to allow to all citizens social inclusion, among other, by access to different transport infrastructures and networks for the provision of services like energy or electronic communications. Thus the building, maintaining and developing of these technical and technological recourses are of public interest. The usage value of networks is higher the larger is the geographical coverage since it is available to greater number of users (network effects).

Generally on the basis of the criteria of special usage it is possible to differentiate between so-called large or primary networks that need important physical space (ground, air) like railways, motorways, power transmission lines on the one side, and narrow or secondary networks like different cables or pipes. The characteristics of the latter are that they can be easily integrated with the former, e.g. laying cables along motorways or railways. Considering the aforementioned, some authors speak of the appearance of a new - Administrative Law of Infrastructure in the future⁶. One particularity of the sector of electronic communications is the legal notion of – right of way⁷. The right of way is a form of property right allowing building networks on public property or private real estate for a yearly regular fee in return. The idea behind planning investment in urban areas and introducing new or replacing existing communal infrastructure (such as gas installation,

² www.Hakom.hr

³ www.Hera.hr

⁴ www.Artzu.hr

⁵ Proposal for a Regulation of the European Parliament and of the Council establishing the Connecting Europe Facility, COM(2011) 665, SEC(2011) 1262, p. 1.

⁶ Hermes, G.: *Foundations and structure of State responsibility for infrastructure*, Journal of Network Industries 1: 2000., p. 223–243.

⁷ Directive 2002/21/EC (Framework Directive) on a common regulatory framework for electronic communications networks and services, as amended by Directive 2009/140/EC and Regulation 544/2009, OJ L 108/33., art. 11.

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water system, sewages, public lighting, etc.) is to link it to new generations of electronic communications networks so as to build - integrated infrastructure, as far as possible⁸.

Network industries are generally technical structures and systems supporting the modern urban social life. They have become an inseparable part of economy and society, so the term – network enterprise is being more and more used. The basic economic unit is not anymore individual (an entrepreneur) nor collective (the capitalist class or the State) but it is the technological network as a circle of economic units with virtual network culture⁹. The network in its technical mean is a group of transport lines and nodes where they intersect. Transport lines may be telecommunications cables, power lines, railways and airline routes or pipelines for different use. Nodes may be telecom switches, electrical substations, railway stations, airports, etc. Network industries are therefore characterised by a net of lines and nodes which the more it is spread the more the network effects are present.

Scheme 1. Networks - lines and nodes

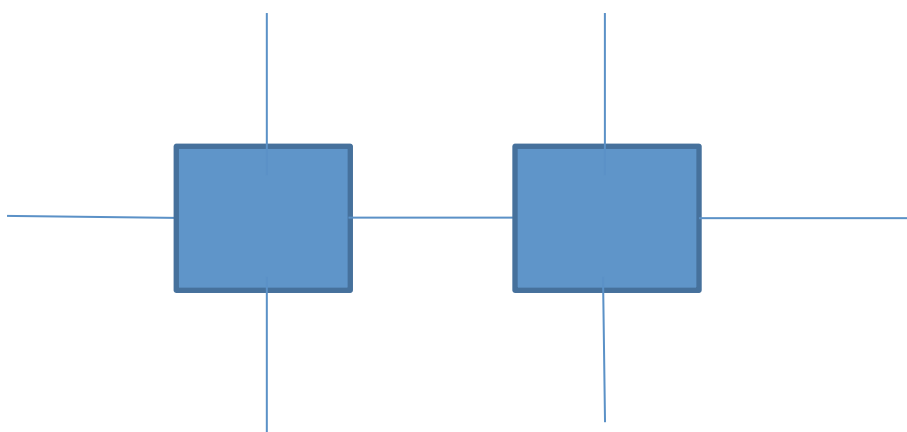


Table 1. Interchangability of networks and services¹⁰

⁸ Uredba o mjerilima razvoja elektroničke komunikacijske infrastrukture i druge povezane opreme NN 131/12, čl. 2.

⁹ Castells, M.: *The rise of the network society*, Blackwell publishing Ltd, Oxford, 2000., p. 214.

¹⁰ Crampes, C.: *Network industries and network goods*, European Economy, n. 4, 1999., str. 98.

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| MAIN FEATURES | one way electricity, gas | trains | two-way telecom, postal service, airlines | local networks water, urban public transport (upt) | Notes |
|----------------------------|---|--|--|---|---|
| 1. Lines | | | | | |
| 1.1. Infrastructure | ■ no duplication | ■ no duplication | ■ duplication possibilities ■ competition (postal service, airlines) ■ imperfect competition (telecom) | ■ no duplication | duplication can be justified by * yardstick competition * differentiation * dynamics * security |
| 1.2. Substitutes | ■ partial substitution | ■ strong substitution | ■ low substitutability for telecom (but Internet...) ■ strong for postal services (fax) | ■ no substitute for water ■ strong substitutes for u.p.t. | pollution and congestion in urban areas. |
| 2. Nodes | ■ gas is storable at nodes ■ electricity not storable ■ competition in production for electricity | ■ stations are monopolies ■ multimodal competition in dispatching | ■ airports are local monopolies ■ multimodal competition | ■ depollution units have Minimal Optimal Scale ■ multimodal competition for u.p.t. | terminal nodes and intermediary nodes can have a very different status with respect to competition |
| 2.1. Upstream | ■ gas storage can be competitive | ■ multimodal competition | ■ telecommunications and postal services are switching from monopoly to multitechnological competition | ■ water : competition in treatment ■ natural monopoly for water distribution | |
| 2.2. Downstream | ■ distribution monopolies | | | | |
| 3. Externalities | ■ Kirchhoff law ■ need for dispatching | ■ congestion ■ need for co-ordination | ■ club externalities in telecom, ■ congestion | ■ congestion, ■ quality variations | * indirect club externalities everywhere * problem of compatibility |

Table 2. Services chain of production and distribution¹¹

| Network Taxonomy | Entry Mode | Lines and Nodes | Exit Mode |
|------------------|--------------------|--|--------------------|
| Electricity | generation | transformation transport transformation (dispatching) | local distribution |
| Gas | generation | storage pipeline storage (dispatching) | local distribution |
| Water | pumping, treatment | distribution/collect (basin regulation) | treatment, dumping |
| Postal Service | clearance | sorting transport sorting (international co-ordination) | local distribution |
| Telecom | local loop | switch long distance switch (allocation of audio-frequencies + co-ordination) | local loop |
| Airlines | intermodal | airport transport airport (traffic control) | intermodal |
| Railways | intermodal | station transport station (traffic control) | intermodal |

Key : competitive activity
mixed activity
monopolistic activity

¹¹ Idem.

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What is in common to network industries are not the technical characteristics of individual networks, but rather the economic - rules of use, like the economies of scope and scale and the comparable legal framework governing, i.e. issues as the - access to the networks. Therefore the horizontal approach to network industries may be looked for more in the economic and legal domain and less on the technical side. From the technical side networks normally satisfy four functions. These are interconnection, interoperability, capacity management and system management. Interconnection stands for physical connection of different networks with the same or similar function. Interoperability refers to organised interaction and use of different elements of the network. Capacity management has to ensure efficient and impartial distribution of scarce network resources (i.e. network neutrality), particularly for services used in real time as is in some electronic communications services. System management ensures free and secure flow of traffic particularly through congestion points respecting relevant quality standards¹².

On the economic side, the rather high size of investment needed may be a factor limiting the potential number of investors ready to enter markets where the network is an essential resource. This is particularly noticeable in the case where new entrants attempt to build their own network on a large scale. Hence the economics of network industries are based on building network parts and connecting them on points of connection to existing networks usually owned by incumbent operators. This makes the investment less risky and allows entering the market step by step. A related issue is the cost and other conditions under which the new entrants have right of access to the legacy network of former monopolists. This concerns in particular the distribution part of the network where the costs of replication are the highest (i.e. local loop in telecoms)¹³. The risk with one-off large scale investments may be that in case of exiting the market, investments might be hard to recover (sunk costs) since the facilities build have in principle no alternative use. The same goes for stranded costs, where it was not possible to amortize the stocks (power plants, trains, plains, etc.) as planned under the regime of exclusive rights due to i.e. liberalisation processes, or by reason of fast change of technology i.e. fibre line instead of copper line and accompanying facilities in electronic communications. Besides, doing business in network industries requires important maintenance costs of the network, billing systems, customer care, high marketing costs, etc.

Therefore in general, networks businesses starts with higher costs and continue with lower marginal costs. The average costs of doing business diminish proportionally to the rise of

¹² Finger, M., Kunneke R.: The need for coherence between institutions and technology in liberalized infrastructures; the case of network unbundling in electricity and railways, Management of Network Industries – Report 2006-009, p. 4.

¹³ Sabolić, D.: Tržišna snaga u telekomunikacijama, Kigen, Zagreb, 2007., str. 8.

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services usage according to the economy of scope and scale. This can be noticed in electronic communications where several services are offered through the same network. Liberalisation processes naturally lead to the change of the market structure from monopoly to duopoly or oligopoly. Developing sustainable competition may be a challenging task for regulatory authorities. Vertical integration is another characteristic of the network industries and relates to the situation where one and the same operator manages two or more level of the chain of distribution. It can be that the same undertaking produces the good or services, does the transport over a particular infrastructure and does the distribution to the users¹⁴.

Dynamic technological developments may change the perception of particular industries as natural monopolies, as is the situation with fixed electronic communications where mobile communications over time are likely to take the lead and change the historical set up. However, in other network industries developments are scares as in water procurement or railway freight transport. Therefore such industries are - technologically static. As long as full infrastructure substitution is not financially viable or achievable, the access of competitors to the legacy infrastructure is ensured through a set of rules widely known in the electronic communications sector as – open network provision (ONP)¹⁵. Network access conditions need to ensure equality of business for the historical operator and its competitors. Regulation of the scares parts of infrastructure (i.e. bottleneck) is done by account separation of the infrastructure part form the service provision part. In other words wholesale and retail businesses of vertically integrated operators are separated in order to avoid unlawful cross-subsidisation among them. Financing of potential losses of retail business from the wholesale part is not allowed (i.e. cross-subsidising) as this puts competitors on an unequal footing. The most efficient way seems to be the structural division of the infrastructure under a separate legal entity as this is done i.e. railway sector in Croatia, where the former monopolist was divided into four companies under a holding company umbrella at the outset of the liberalisation (infrastructure, traction, freight and passenger transport)¹⁶.

The main value of the networks and services offered over them is the large number of users and geographical destinations thus connected. This influence the intrinsic value of the network since all of its users are technically connected (positive externality). However, if a large number of users overload the network, this can have detrimental effects on the quality

¹⁴ Owen, B. M: Antitrust and Vertical Integration in „New economy“ industries with application to broadband access, *Review of Industrial Organization* (2011), vol. 38, no. 4, p. 365.

¹⁵ Directive 90/387/EC on the establishment of the internal market for telecommunications services through the implementation of open network provision, OJ L 192.

¹⁶ Zakon o podjeli trgovačkog društva HŽ – Hrvatske željeznice d.o.o., NN 153/05, 57/12.

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of the service concerned like the (negative externality). Network industries besides having individually an important social role, are an unavoidable input for all other industries and undertakings. The cost of services like energy, electronic communications, postal or other transport services influence the overall competitiveness of the economy. Often investments in network industries are taken as a correlation to the expected growth of GDP.

A synonym for convergence nowadays is the – Internet. It has a hybrid nature and connects electronic communications with electronic media (networks based on the Internet protocol, IP). Besides network convergences other convergences happen between technical appliances, industries and institutions¹⁷. Thus is created a new level for multisectoral approach in the sense that i.e. electronic communications operators are offering TV services. Convergence of this type is – deep, and can be noticed in telecoms, audio-visual services and information-communication technologies. On the other hand - loose convergence, can be found in the sectors of electronic communications and electricity where there may be occurrence of common infrastructure, but with clear distinction between services. Such undertakings are named – teleelectric companies. The postal sector shows as well some innovation, i.e. hybrid mail¹⁸, but also new commercial offer of bundled postal and TV services, as is the case in Croatia. It is worth mentioning as well the business cooperation among different transport sectors which is not convergent in the technological sense, but is based on the benefits of intermodal transport. Road and railway transport are a classic example but not the only one. Cooperation may be found between air carriers and railway companies where airports are being connected with railway lines in order to better serve the needs of passengers in a way that they use airlines for longer distance and rail for shorter distance. Common reservation systems and logistical coordination help save time and costs to passengers, as well as are raising incomes of transporters. Large companies with a portfolio of network services (multi-utilities) and the building of smart grids¹⁹ enables the bundling of commercial services for final users. A company of that type is the French Vivendi active in electronic communications, energy, water supply, multimedia and construction²⁰. This may lead us to rethink the classic regulation of a single network industry by a single national regulatory authority and explore the ways of multisectoral regulation and integration of existing national regulatory authorities in the future.

II. Overview of individual sectors

¹⁷ OECD, Convergence and next generation networks, Seoul, 2008, DSTI/ICCP/CISP (2007)2/final, p. 7.

¹⁸ Geradin, D., Regulatory issues raised by network convergence: the case of multi-utilities, Journal of Network Industries 2, 2001, p. 115.

¹⁹ www.smartmeters.com/the-news/1377-deutsche-telekom-planning-to-expand-into-smart-metering-.html.

²⁰ www.Vivendi.fr.

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A) Market context

i) electronic communications

Historically the provision of voice, data or TV services was organized over different network platforms to reach the customers. Technological progress has made it possible to offer all these services through one and the same network (next generation network, NGN) based on IP protocol. The construction of such networks is mainly linked to the issue of return on investment. In principle building fibre to the home (FTTH) taking into account the profit expectation of operators make the investment viable in the mid-term only in highly urbanised areas²¹. In parallel, convergence takes place in the mobile networks where voice and data traffic are accompanied by video and TV content. This is possible due to the greater bandwidth in mobile communications named - long term evolution (LTE). Technological improvements make possible cutting costs, raising speed of data transfer (fibre lines), and development of information technology that creates new services for users. However, one of the central questions in electronic communications still remains the access to the last mile of the network (local loop), owned mostly by the historical operator. In order to reach the final user, new telecom operators need, except when they own a particular distribution network, access to the network of the infrastructure of the (usually) historical operator. Conditions of access, technical and financial, are publicized by the incumbent operator and available to potential competitors. This document, legally binding on the infrastructure operator is called in electronic communications – the reference offer (RIO – reference interconnection offer, RUO – reference unbundling offer, etc.)²². Depending on the level of network interconnection in electronic communications, the alternative operators may offer own services based on the so called unbundled local loop, bitstream or simple resale of incumbent services. The deeper the interconnection takes place in the incumbent network the more costly is the investment required, and the higher is the potential margin for the new entrant.

In case of problems in getting a fair access deal with the former monopolist, the new entrants may turn to the sectoral regulatory authority and initiate necessary proceedings for the protection of their legal rights. Since potential abuses of market power has to be prevented in advance, in order for competition to grow, regulation of significant market

²¹ Lovrek, I., Pecur, D: FTTH technologies and access to USO, Proceedings ITS 17th Regional Conference – Amsterdam, Netherlands, ITS, Europe, 2006., p. 6.

²² As a comparison a similar document in the railways sector, published by the railway infrastructure manager is titled – the network statement.

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power operators (SMP) needs to be done in advance²³. National regulation is coordinated on the European Union level through BEREC (Body of European Regulators for Electronic Communications) where the European Commission is also represented. Current issue dealt in electronic communications is primarily how to boost investment in the sector in relation to new generation networks²⁴. Linked is the subject of developing fixed broadband fibre networks, the costs and prices of NGN whether fixed or mobile²⁵. For the later one, what matters is the freeing-up of the digital dividend due to digitalization of TV and use of this spectrum for mobile communications services²⁶. In Croatia, initiatives for extending broadband in rural and scarcely populated areas have been prepared with the goal of balanced development of so called broadband ecosystem²⁷. The electronic communications are a liberalized sector with leading experience in the transition from monopoly to competitive market. Several regulatory frameworks passed in the EU have served this purpose from 1998 and the opening of the market onward. Since then, legal and economic regulatory technics and methodologies have been developed, that can serve in other network industries facing liberalisation processes.

ii) Postal services

The postal sector is a classic example of gradual market opening to competition. Universal postal service, accessible to everyone, has been traditionally financed through the reserved postal area (parcels under 50 grams at the final stage) for the incumbent operator. Liberalisation of the market started with the first EU postal directive²⁸, and the final opening and levying of exclusive rights was set by the third EU postal directive²⁹. Programed market liberalisation had the essential aim of allowing sufficient time to the historical operator to restructure and lower down its operation costs³⁰.

²³ Commission recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation C(2007) 5406, OJ L 344/65.

²⁴ I want half of EU citizens to have very fast Internet of 100 MB/s by 2020, says Nellie Kroes, commissioner for information society in a speech titled „Giving Europe a mobile broadband boost, speech 12/124.

²⁵ Falch, M., Markendahl J.: Promoting new telecom infrastructures – market, policies and pricing, EEP, 2010.

²⁶ www.itu.int.

²⁷ Carić A., Mileta D., Šajnović J.: Broadband Ecosystem for Rural Areas in The Republic of Croatia, Proceedings SoftCOM, 2011, 19th International Conference on Software, Telecommunications, and Computer Networks, Croatia.

²⁸ Directive 97/67/EC on the common rules for the development of the internal market of Community postal services and the improvement of quality of service, OJ L 15, p. 14.

²⁹ Directive 2008/6/EC amending Directive 97/67/EC with regard to the full accomplishment of the internal market of Community postal services, OJ L 52, p. 3.

³⁰ Geradin, D., Humpe, C.: the liberalisation of postal services in the European Union: An analysis of Directive 97/67. The Liberalisation of postal service in the European Union, Geradin, ed., Kluwer Law International, 2002, p. 91-109.

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The postal service in its technical aspect consists of several phases, collection, sorting, transport and delivery of parcels. Collection is organised at postal access points, at the premises of the sender by personnel of the postal operator and through other means set in the general contract provisions of the operator. Sorting refers to grouping mail according to destination areas and recipients addresses. Transport is necessary to physically move postal items (except in cases of hybrid mail where electronic communications are used at a certain extent). Mail delivery happens at the addressee's place of residence or premises or at the postal box. Natural monopoly is considered the latest phase, i.e. delivery which is labour intensive and bound to quality standards no matter the geographical location. A potential competitor will find it hardly viable to duplicate the delivery part of the postal network on larger geographical scale. Therefore competitors will normally have an interest in accessing at a particular point the network of the historical operator. The distribution part of the postal network is comprised, as a difference to electronic communications, of human workforce. It is estimated that the labour force participate with up to eighty per cent in overall fixed costs of an average historical operator. Economies of scope are hence easily discernible with postal services as well and have a predominant role in price setting. However, technological developments like e-invoicing, e-banking, or e-mail, present a strong competitive constraint on the traditional postal service.

In the postal sector, competitors are mostly active in providing services to business clients with large postal requirements like banks, insurance firms, telecom companies and others generating thousands of individualised postal items. This can easily lead to concentrating on the most lucrative segment of the market (cream skimming) which renders the fulfilment of the postal universal service obligation (USO) more demanding for the incumbent operator. To compensate for the USO net cost, competitors are usually required by regulations to participate in a fund dedicated to USO services. This is necessary after exclusive rights of the incumbent operator in the reserved area elapse, since State budgets are normally not able to cover postal USO costs. One of the essential parts of organizing USO financing is transparency of accounts of the USO operator. He has to prove that USO is a burden to his business activities and entails net cost which would be avoided if he had no USO.

The main issue in postal liberalisation remains the financial stability of the historical operator which is not possible without vast restructuring, reducing fixed costs (labour) which entail social consequences and problems to the State who is most often the owner of the national post company.

iii) Energy services

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Electricity can be on the one hand produced in different ways (water, tide, coal, wind, sun, etc.), but on the other hand it cannot be stored. That points to the fact that competition might rather simply arise in the production phase. Thus produced, the electrical energy needs to be transported over long distance power lines and finally distributed to the industrial and residential users. Hence several phases of production-distribution chain exist. The historical operator has full vertical integration, and the transport and distribution phases are seen as natural monopolies to which competitors should have access. As in other network industries where there is no functional or structural separation of the infrastructure operator, accounting separation needs to be implemented in order to ensure fair and non-discriminatory treatment between competitors and the own production branch.

EU member states when starting liberalisation choose between two models with regard to access to the transportation and distribution infrastructure. The first is – third party access, and the second – single buyer system. In the first model, the producer and the buyer may negotiate directly the terms of access to the network and the provision of electricity. Another way is that the producer and the buyer (large one) are standing directly in business relation but cannot negotiate the terms of access since these are defined and published in advance. The first is referred as negotiated third party access and the second regulated third party access. The second model mentioned above is the single buyer model, where on legal person is responsible for running the transportation system and secure continuous provision. The single buyer buys the electricity for the price agreed between the producer and the user less the fee for the use of the network. This system is in place in Croatia where the Croatian operator of the energy market (HROTE)³¹ has the role of a single buyer. The European commission has highlighted few reasons hampering the common market for electricity. The first is an insufficient integration among the national markets due to lack of infrastructure limitations and interconnections capacities creating saturation. The second is the high concentration of national industry of electricity, low switch of residential customers and small participation of competitors. The third is the application of different models of separation of production, transport and distribution that entails different ownership over the network. It is noticed as well the lack of correlation between demand and supply reflected in the ill-developed price formation process³². As regards provision of gas, in short, the system is similar as on the one side stand large buyers and on the other one are suppliers. It requires a central coordination point as well. Gas pipelines are natural monopolies where construction costs are high and amortization may take long considering the low marginal value of gas transportation. An advantage of gas is that it is storable.

³¹ www.hrote.hr

³² Morgan, T. et al: Assessing the long-term outlook for business models in electricity infrastructure and services, Infrastructure to 2030, OECD 2007, p. 220-221.

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iv) Railways services

Railways consist in general terms of infrastructure (steel rails, switches, signals, bridges, building and structures, electric traction equipment, etc.) and operating assets (locomotives, freight wagons, passenger coaches, etc.). When railways began, customer options and competition in both freight and passenger markets were limited, and a monolithic model (infrastructure and operating services under unified control) was possible. As competition has grown it has become harder for unitary management on the rail side to compete with cars, buses and air in the passenger markets and with trucks and barges in the freight markets. Generally, rail vs. rail competition (intra - as opposed to intermodal competition) can be a significant mechanism in limiting the potential market power of railways especially in the freight market³³. Furthermore, railways are historically of strategic interest to every State. This may explain somewhat slower liberalisation processes and the existence of five different systems of electrification in Europe³⁴.

Interoperability is a prerequisite for further development of common EU railway system. Railways are seen as a way to reduce land transportation and as ecologically more acceptable. Besides, introducing competition in railways means reducing workforce in the former monopolist, what may bring social tensions between the trade unions and the government. Competition is feasible in the cargo and passenger railway services. In three states, the UK, Romania and Estonia, market shares of alternative operators in cargo transportation are more than 40% at the end of 2008³⁵. Competitors may be confronted to various discrimination practices, when attempting to access the network of the former monopolist. Therefore, the infrastructure part of the incumbent can be structurally separated as a legal person within or outside the historical national railway company. In the coming 20 years it is expected that demand for railway services will grow, but will mainly still be depending on the national transport policy and chosen priorities³⁶.

B) Access to the market

³³ Idem, p. 354-356.

³⁴ Radionov, N. et al: *Europsko prometno pravo*, Sveučilište u Zagrebu, Pravni fakultet Zagreb, 2011.

³⁵ Communication from the Commission concerning the development of a Single European Railway Area, COM/2010/0474 final, pt. 1.1.

³⁶ Thompson, L.S., et al: *Key trends and implications for policy change in long-term rail freight traffic and infrastructure, infrastructure to 2030.*, OECD 2007., p. 402.

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One of the first steps undertaken by investors is the assessment of the conditions for starting the business. Do they need to get an individual licence or a general authorisation (registration) suffices?

When it comes to electronic communications, in Croatia, the difference is generally whether the operator is engaging in activities that need radio spectrum or not. In the latter case, according to the relevant EU Directive³⁷, a general authorisation is required for most of electronic communications services. It relates to setting up, using, leasing and offering electronic communications services. A company needs to notify the regulatory authority before starting his business³⁸. The regulator issues a confirmation of receipt within 8 days of receipt of the notification. In the former case, since the spectrum is a scarce resource, the operator needs to get an individual licence with a spectrum band he is allowed to use according to the regulations³⁹. The award of spectrum is usually organised through auction procedures where the price is a dominant criterion, beauty contest where other criteria are assessed as well, and a random choice in the lottery system. Auction is favoured by governments as it raises most funds to the *fiscus*.

In the postal sector in Croatia, the historical operator has the obligation to provide universal services in the next 15 years⁴⁰. Competitors may provide so-called exchangeable service and additional services⁴¹. Universal services refer to collection, sorting, transport and distribution of defined postal services⁴². Exchangeable are those services which fulfil the same purpose of a universal service from the position of users, but may deviate at a certain extent as well. The regulatory authority confirms the status of exchangeable services by a decision after consulting the national competition authority. In case of providing exchangeable services, competitors have to contribute to a universal service fund proportionally to their incomes.

In the energy sector in Croatia, if an undertaking is to run an energy business it needs to obtain a licence from the national regulatory authority (HERA). The undertaking has to have a legal registration for the relevant energy activity, be technically qualified, employ a sufficient number of competent employees, have adequate financial resources, and fulfil

³⁷ Directive 2002/20/EC (Authorisation Directive) on the authorisation of electronic communications networks and services, OJ L 108/21.

³⁸ Pravilnik o načinu i uvjetima obavljanja djelatnosti elektroničkih komunikacijskih mreža i usluga, čl. 2, NN 154/11.

³⁹ Pravilnik o uvjetima dodjele i uporabe RF spektra, čl. 11-38, NN 45/11, 50/12.

⁴⁰ Zakon o poštanskim uslugama (ZPU), čl. 67., NN 144/12.

⁴¹ Idem, čl. 16.

⁴² Idem, čl. 15.

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other listed conditions⁴³. The duration of a particular licence is defined by Minister's decree. The licence can be withdrawn in itemised situations⁴⁴.

In railways in order to operate a public transportation service, an undertaking has to seek a licence from the Croatian line Ministry and fulfil a number of conditions, i.e. legal registration and seat in Croatia, financial capability, necessary rolling stock, qualified crew, insurance policy, etc⁴⁵. As from the date of accession of Croatia to the European Union, licences awarded to railway operators from other relevant authorities in EU are valid. The licence however does not give the right of access to the railways network. This is a separate procedure conducted before the infrastructure operator which results in an accession contract. As a final prerequisite, the prospective undertaking needs to fulfil particular transportation security conditions and receive a security authorisation from the Railway Security Agency⁴⁶.

C) Access to the network

Essential facilities refer to anything necessary to run a particular economic activity. In case of network industries, infrastructure and network components are *condition sine qua non* for operators. Generally two legal frameworks deal with the right to use essential facilities. One is competition law and the other one is sectoral regulatory law. The first one ensures in certain cases the right of the weaker market player to access the facilities of the dominant market player. It concerns the situation of the so called - refusal to deal, where the competition authority decides on a case by case approach. The second one is based on - *a priori* access rules, where technical and financial conditions of access are defined in advance by a regulatory authority. The first framework is usually referred as *ex post* since the law applies after the situation of refusal to deal occurs, and the second one as *ex ante*, since the framework for access is set in advance.

A typical example of competition law case with regard to essential facilities is *Sealink/B&I*⁴⁷, where the European commission has decided that *Sealink* has abused its dominant position as owner of the maritime port facilities, by giving access to it on less favourable terms to its competitor. Namely, *Sealink* had to align its departures hours in order to allow equal and fair treatment of its competitor. Thereby, *Sealink* was not allowed to pass its market power on

⁴³ Zakon o energiji (ZE), čl. 17, NN 120/12

⁴⁴ Idem, čl. 18.

⁴⁵ Zakon o željeznici (ZŽ), čl. 6., NN 123/03, 194/03, 79/07, 75/09,

⁴⁶ Zakon o agenciji za sigurnost željezničkog prometa, čl. 9, NN 120/08.

⁴⁷ *Sealink/B&I – Holyhead*, IV/34/174, 11 June 1992., *Sea Containers – Stena Sealink* OJ L 15/((1994).

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one market (port) to the other (ferry service). This is a situation of vertical integration where the same undertaking operates both on upstream and downstream market and is able to drive out of the market its competitors by setting abusive prices and other conditions on the wholesale or/and retail market. The following statement is instructive "If one competitor possess something necessary to other competitors to run their business, what they cannot procure on their own or elsewhere, the EU law obliges one who controls essential facilities to allow access to third parties under fair terms"⁴⁸.

In a network industry as electronic communications, if investments carried by operators are to be profitable their network has to be connected to similar existing networks to allow users from all networks to exchange communications. This is called interconnection. It is possible to differentiate between parallel, vertical and horizontal interconnection. The first one is a situation where two operators dominant on their own market in different territories connect their networks. The second one is a situation where a dominant operator allows a third party the access upstream necessary for its operations downstream. The third one is a situation where operators compete on the same market due to convergence of technologies, as is the case of fixed telecommunications and cable television⁴⁹. Due to positive network externalities, connection between operators is a standard in this industry. However, when there is a visible difference in market power among competitors, this may not be so evident. Interconnection is covered by agreements between operators. If they cannot agree, they may bring the matter before the relevant regulatory authority. In Croatia HAKOM has competence to solve any dispute arising out of the Electronic Communications Act⁵⁰.

It is necessary to make the difference between symmetrical and asymmetrical access. The first relates to the obligation to mutually interconnect as of reason of transaction cost rational. The second is in function of market competition protection. In the symmetrical case the economics of cost of transportation of communications impose interconnection without difference to the market power. The asymmetrical one is concerned with ensuring sustainable competition considering the risks of abuse by significant market power operators (SMP). Asymmetrical regulation relies on a set of legal regulatory instruments known as regulatory obligations. The first is access and use of parts of networks. The object of the access may as well be the local loop connecting the final user to the network. This process is

⁴⁸ Temple, L.G.: Defining legitimate competition: companies' duties to supply competitors and access to essential facilities, Fordham International Law Journal, vol. 18, 1994, p. 439.

⁴⁹ Cave, E.M. et al.: Handbook of Telecommunications Economics – structure, regulation and competition, Elsevier Science B.V., Amsterdam 2002, p. 387-388.

⁵⁰ Zakon o elektroničkim komunikacijama (ZEK), čl. 20., NN 73/08, 90/11, 133/12.

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known as unbundling of the local loop, where the competitor rents it fully or partially from the incumbent. Along, the incumbent or the infrastructure operator has to guarantee wholesale services of a set quality by entering a service level agreement with the access seeker. The second is transparency. It means that the regulated operator has to publish a reference offer in relation to access and interconnection on upstream markets, with relevant accountancy data, technical specifications, network details, prices, etc. The third one is non-discrimination. This obligation is in principle complementary to other ones and address possible failures when the SMP operator is not treating competitors on equal terms with its one retail arm. The fourth is separation of accounts, where the vertically integrated operator has to make transparent its wholesale prices and internal transfer prices in order to prevent cross subsidisation among different services. This should eliminate the risk that SMP offer for example prices on the competitive market at very low level, and then recovers it on the other non-competitive market by high price. The fifth regulatory obligation is price control and cost account obligation. This measure applies to situations where the SMP operator might attempt various price abuses like excessive prices, predatory prices or margin squeezes. The SMP operator has the burden of proof that its prices are cost based. The sixth regulatory obligation is retail price control. In principle this measure applies only when previous wholesale measures are not effective. The regulatory authority may price cap the retail prices of the SMP operator, control the cost orientation, etc. The seventh regulatory measure is functional separation of vertically integrated operators. This is a last resort measure in case there are sever obstacles to develop sustainable competition. It consists of separating the wholesale services of the vertically integrated operator into a separate business unit. This business unit must provide wholesale services to every operator on equal terms including the retail arm of the company it belongs to. The management and employees have to be independent of the rest of the company and have separated assets and payroll policy⁵¹.

When deciding what set of regulatory measures the regulatory authority will impose on the SMP operator, it will have to observe certain guidelines⁵². The first guidelines requires the regulator to argument properly the motives of its decision. The regulatory measures have to be proportioned to the obstacles existing on the market. That means defining the relevant market in advance and find out whether an SMP operator exists. A public consultation procedure on draft measures is hence a standard in electronic communications. In order to have better coordination among national regulatory authorities, BEREC has been set up to harmonise practices among different members state of EU. The second guideline promotes

⁵¹ Idem, čl. 64.

⁵² Revised European Regulator Group common position on the appropriate remedies in the ECNS regulatory framework, 2006, ERH (06) 33, p. 52.

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infrastructure access of competitors in case infrastructure competition is not viable. However, the right of access has to allow the infrastructure operator a fair return on investment in order to stimulate it to further invest in the network and technology. The third guideline further develops the situation where infrastructure replication is possible. It introduces the notion of the - ladder of investment, meaning that the competitors should move up the infrastructure ladder over time and rely less on the infrastructure the SMP operator. This should be possible if in the beginning competitors start their business with limited own infrastructure and lease under fair terms the incumbent network. Later, when they reach a critical mass of users, they may further develop own network elements and have less wholesale cost. The fourth guideline underline that regulatory measures should give an incentive to the regulated company to comply with them without need for the regulator to use sanctioning powers. Thus the cost of regulation would be reduced and there would be no need to trigger procedures before the judiciary.

In the energy sector third party access describes the situation where a competitor has the legal right to access and use the electricity grid of the vertically integrated operator. The EU rules mention unbundling as an efficient remedy to the incentive of the vertically integrated operator to discriminate third parties versus its own retail branch⁵³. Without adequate separation of network management from production and supply, there is a permanent risk of discriminating competitors. Refusing access to the network may take the form of margin squeeze, mismanagement of the network capacities, degradation of service quality, strategic underinvestment, etc. In Croatia it can be differentiated between public services and market services. Public services encompass the security and quality of electricity supply, protection of final users, environment protection, etc. Market services cover others electrical energy services, these are negotiated (quantity, prices) and contracted freely on bilateral basis (contracting of electricity purchasing, network usage contracting)⁵⁴.

In the railways sector, the rights and obligations of the railway infrastructure operator and the transportation operator are set in a contract concluded for a period not shorter than 3 years. The access contract stipulates the capacity allocation, the access fee and other issues related to transport safety and environment protection⁵⁵. The access fee is based on direct cost of the infrastructure operator for network management and maintenance of the infrastructure. International practice shows different ways of obstructing competitors when trying to access the infrastructure of the historical operator. One way may be the application

⁵³ Directive 2009/72/EC concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC, OJ L 211.

⁵⁴ Zakon o tržištu električne energije, čl. 6-7., NN 22/13.

⁵⁵ ZŽ, op.cit. 45, čl. 22.

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of price discounts at the advantage of the historical operator. Competitors when entering the market, obviously use lesser routes than the incumbent. The quantity rebates need therefore to be objectively set. Setting short time to run a particular distance may place operators with powerful and expensive traction in a better position. Allocation of capacity, setting of technical standards, regulating sever qualifications for key personnel (locomotive drivers) may indirectly disadvantage new comers on the railway market⁵⁶.

In the postal sector, according to the Croatian postal legislation, the provider of universal services has the obligation to allow access to its network and associated services to other postal operators. The conditions of access have to be known in advance and published and applied equally to all interested parties. The regulatory authority defines the access points and conditions, content of the access request and the contract, pricing principles and other related issues in a separate by-law. The access provider has to decide on the access request within 30 days of its receipt. When setting the price of access, avoided cost must be taken care if operators requesting access have themselves completed some operations beforehand. The request may be declined only in case if it would endanger the fulfilment of its universal service obligation. In any case of dispute between the operators related to network access, the regulatory authority shall decide within four months of starting the procedure⁵⁷.

III. Services of general economic interest

Services of general economic interest (SGEI) are present all over the network industries. The liberalisation of network industries has incited the transfer of providing and financing of SGEI from the state to the private sector under market conditions. This has allowed the reform of the way these services are financed⁵⁸. On a strategic and political level this process may be seen as withdrawing of the socially motivated State and outsourcing of these services to the market and not excluding privatisation. Some scholars describe this as a new form of

⁵⁶ Weidmann, U.: Open access to railway networks: Hidden discrimination potetntial in an integrated railway organisation, First annual conference on competition and regulation in network industries, Centre for European policy studies, Bruxelles, 2008.

⁵⁷ ZPU, op.cit. 40, čl. 53.

⁵⁸ Commission communication: A quality framework for services of general interest in Europe, Bruxelles, COM (2011), p. 5.

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European capitalism where democracy and efficiency are combined on the expense of some social values⁵⁹. The new model of European capitalism is at the roots of these processes, and furthermore is part of the new economy with global connotations and is manifested with different pace in various part of the economy. What matters to services of general economic interest are their sustainability, quality and accessibility. The particular position SGEI occupy in the legal order is visible in article 106 of the Treaty on the functioning of EU (TFEU) where it is provided that competition rules apply as far as they do not obstruct the performance of SGEI. A similar disposition exists in the Croatian national competition law⁶⁰. SGEI would not be provided if pure market economy logics were applied. This is why they are linked to the notion of - market failure. The prices charged for the provision of these services cannot hence be based only on the criteria of demand and supply, but other social and political considerations are to be taken in account as well⁶¹. The Green paper on SGEI has pointed to an ever evolving role of these services for the community, its social and territorial cohesion, and the high standards for the final users of network industries services in particular energy, transport, electronic communications⁶². Financing of these services has to be arranged on neutral basis and avoid distorting competition. Open and competitive market and accessible SGEI should not be mutually exclusionary goals⁶³.

Member states have a rather vast choice of defining an SGEI. They do not necessarily have to belong to network industries being in the process of liberalisation, but also to economic activities like water procurement, urban transport and other utilities. The accent is on the European model of society that recognises differences among member states with regard to how SGEI are organised⁶⁴. Few points, however, have to be observed. First, neutrality of the property over companies providing SGEI, meaning that privatisation is not a prerequisite. Second, exclusive or special rights awarding to SGEI operators need to comply with article 106 TFEU. Third state interventions need to be proportional with existing market failures, meaning that overriding reasons of general interest have to be shown. Such approach should balance competition rules with and SGEI rules in the TFEU (article 106 and 14).

IV. Multisectoral regulation

⁵⁹ Koprić, I., Musa, A., Đulabić, V.: Europski standardi regulacije službi od općeg interesa –(kvazi)nezavisna regulacijska tijela u izgradnji modernog kapitalizma, HJU, 3/2008, str. 649.

⁶⁰ Zakon o zaštiti tržišnog natjecanja, čl. 3, NN 79/09.

⁶¹ Waelbroek, D.: les conditions d'applicabilite de l'article 90 (2) CE, Colloque de Strasbourg, Service public de la Communautee: entre l'interet general et le marche, 1996, p. 452.

⁶² Green paper on services of general interest COM (2003) 270 final, p. 5.

⁶³ White paper on service of general interest COM (2004) 374 final, p. 7.

⁶⁴ Communication of general interest, services of general interest, including social services of general interest: a new European commitment COM (2007) 725 fin, p. 3, 10.

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Regulatory authorities can be organised as individual bodies competent for particular sectors, or several sectors can be served by cross-sector competences of one regulatory body. Thus is possible the sharing of common recourses, professional and administrative. Professionally it allows economic regulation on horizontal level, i.e. price control, cost orientation, obstacles to competition, procedures vis a vis incumbent operators, etc. It is thought, that joining regulatory bodies can reduce the risk of regulatory capture, particularly corporative capture. Eventual interventions (lobbying) in newly liberalised markets shall be better resisted by multisectoral regulator since it has considerable experience with sectors in mature phase of liberalisation. A larger power portfolio strengthens the regulator and builds its credibility towards the business community. Generally, setting up of multisectoral regulator from the outset and adding new sectors is more favoured to merging them later⁶⁵. In the first case, new sectors immediately benefit from the knowledge and experience gathered in mature sectors. In the second case, it is expected to have resistance from individual regulators boards since they fear losing their office and powers in a newly merged entity.

The experience in Latvia has shown that fragmented regulatory institutions are less efficient in conducting liberalisation policy and are more prone to lobbying. Latvia has started in 2001 an institutional regulatory reform by merging existing regulatory functions scattered in different line ministries into a single entity named Public Utilities Regulation Commission on the basis of the Law on regulators of public utilities⁶⁶. It has gathered telecoms, energy, post and transport⁶⁷. A similar model of multisectoral institutional regulation can be found in Luxembourg and Germany where telecoms, energy, post and railway sector are under the *Bundesnetzagentur*⁶⁸ and *Institut Luxembourgeois de Regulation*⁶⁹. In Slovakia one regulatory body is in charge of the energy sector and water procurement⁷⁰, and in Austria telecoms, electronic media and postal services are gathered under the Austrian Regulatory Authority for Broadcasting and Telecommunications⁷¹. Finally and briefly we would like to mention that in parallel to merging individual sector regulators, another phenomena takes place and relates to merging national competition authorities with sector regulators as is the situation in Netherlands and Spain. In the former on the Independent Post and Telecommunications Authority is merging with the Netherlands Competition Authority and

⁶⁵ Smith, W.: Utility regulators – roles and responsibilities, 127, Viewpoint (1997), The World Bank, p. 1-2.

⁶⁶ Sepp, J., Eerma, D: Competition policy in network industries – Regulation and deregulation in Estonia, *Ordnungspolitische Diskurse*, No. 2007-03, p. 8.

⁶⁷ www.sprk.gov.lv.

⁶⁸ www.bundesnetzagentur.de.

⁶⁹ www.ilr.public.lu.

⁷⁰ www.urso.gov.sk.

⁷¹ www.rtr.at.

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the new entity is named The Netherlands Authority for Consumers and Markets (CNMC)⁷². In the later one, a super regulator is being set-up named National Commission for Markets and Competition, merging eight former market regulation agencies⁷³. As an answer to an EU parliamentary question, in January 2013., Ms Kroes on behalf of the EU Commission has stated: "Independence of national regulators is a fundamental principle of the EU regulatory framework and is crucial for the effective functioning of the single market. Member States have a considerable degree of autonomy in deciding how to set up their regulatory bodies. The Commission attaches great importance to the requirements regarding the alignment of the tasks carried out by the regulatory authorities with the policy objectives and regulatory principles contained in EU frameworks. The Commission is in contact with the Spanish authorities regarding this draft law to ensure independence of the new authority (CNMC) and to ascertain that it has sufficient powers to fulfil its functions under EC law"⁷⁴.

Conclusion

Greater competition is seen as a way of improving choice, quality and prices of services. The preoccupation of the European Union is not only the continuation of provision of services of general economic interest but also the overall financial stability of former state monopolies. The cooperation of the EU and the member states is reflected in politically negotiated timeframes of opening individual networks industries to competition and different transitional periods allowing historical operators to exercise special or exclusive rights. The lengths of these periods need to be well balance in order to enable necessary restructuring of former state monopolies often burdened by inefficiency, social considerations and depending on state aid.

This paper had as objective to present a brief overview of some similarities noticeable in different network industries undergoing liberalisation processes. It aimed at finding a common denominator amongst these national sectoral regulatory authorities and proposes institutional development in the future accordingly. Historical operators losing their special and exclusive rights have to undergo restructuring to improve their efficiency. As a result SGEI have to be organised and financed in accordance with market economy principles. New competitors are free to enter liberalised markets after registering their trade with national regulatory authorities or after obtaining necessary licences or authorisations form competent national authorities. Before starting their business operations they will have to

⁷² www.nma.nl.

⁷³ www.iberianlawyer.com.

⁷⁴ Answer E-010396/2012 to the Parliamentary question E-10181/2012, 15 January 2013.

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interconnect to a particular network, own their own facilities or have access to dominant (SMP) operator's facilities and infrastructure under fair terms. The balance between promoting competition and sustaining investment in technology and network modernisation needs to be struck somehow. This may not be easy to achieve as is visible nowadays in electronic communications and the quest for more Internet broadband and implementing new generation networks in globally declining economy. Similar issues are confronted in the energy sector which is oriented at energy diversity, environment friendly sources, and stability of supply. Railways should become a serious alternative to road transport, and postal services are looking for new opportunities in the digitalised e-society. Investment promotion is a common denomination for current policies across these sectors. Hence, as described, major issues are common to network industries, i.e. access to the market, access to the network, SGEI policy.

Our view is that although electronic communications, energy, postal services and railways exhibit clear differences of technical nature, there is a lot in common when it comes to the domain of economics and legal affairs. This conclusion is very important when concerns introducing competition in formerly monopolised network industries, as one sector regulator can learn a lot from the other ones in devising the right economic and legal regulatory instruments. We are therefore of the opinion, since we are witnessing a major convergence of some network industry services, that an analysis of convergent factors of regulation and institutions would be useful. Studying further possibilities of cooperation and mergers of national sector regulators, particularly in small countries as Croatia, would be in our opinion a way to rationalise the number of existing institutions on the one hand and to strengthen their independent position vis a vis the dominant market players and the governments on the other hand.

As a first step, we propose merging in a phased manner the three Croatian sectoral regulators ARTZU and HERA with HAKOM, in a new multisector regulator. In the second step, we propose this new multisector regulator to merge with the Croatian competition authority AZTN. This would integrate regulatory and competition law since they naturally belong to the same ex ante and ex post function of market protection. Multisectoral regulators exist today in small (Latvia, Luxembourg) and large EU countries (Germany). We are of opinion it is worthy study these examples and assess the possible benefits it could bring in terms of competence, independence and cost cutting in Croatia. Nowadays, processes of merging sectoral regulators as first step are followed by merging these with competition authorities in a next step. These examples are known from the Netherlands and Spain. Institutional design of independent regulators in the future, their growing roll and declining traditional

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role of governments in modern market economy will no doubt present a challenge for the administrative science and the theory of tripartite division of State power.

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