

Croatian Regulatory Authority for Networks Industries (HAKOM, Republic of Croatia) contribution to the CWG-Internet Online Open Consultation (February-September 2016)

SUMMARY (2-3 paragraphs)

We take it as a statement of fact that access to the Internet is a significant enabler of economic growth and human development. We also recognize that the Internet has a broad range of other contributions to human well-being including social, cultural and political. As well there are significant potential negative consequences and costs of the Internet to those living in rural areas and that these need to be recognized, researched and responded to. However, there are equally a range of ways through which these services may be provided including state support for local infrastructure and content, locally/community owned and driven infrastructure and access provision, private sector provision and a wide range of mixed approaches. No single approach will be suitable in all instances and care will be taken to ensure that local and national requirements and resources are taken into account in any access and use provision.

Croatian Regulatory Authority for Networks Industries (HAKOM) is the Croatian national regulatory authority for telecommunications, postal and railway services market. Enabling environment for access to the internet is role for all stakeholders (politicians, law makers, regulators, private companies, academia and, last but not least, consumers).

The regulatory authority can influence building an enabling environment by creating new investment incentives and improving the existing regulations to boost the development of broadband infrastructure; making the best possible use of scarce resources such as frequencies; encouraging the development of fair competition in the telecommunications markets, also in terms of quality. In addition, regulator carries out its activities with the customer wealth in mind. Therefore, initiatives aimed at providing customers with knowledge on the available services (e.g. QoS indicators and measurement tools) also constitute an important part of both regulatory activity and enabling environment.

1. What are the elements of an enabling environment to promote Internet connectivity?

An enabling environment to promote Internet connectivity should support all activities and investments in both services and infrastructure, which should ensure Internet access to (all) end-users. It should also be focused on bridging the digital divide between high-density urban and low-density rural areas, which has multiple social and economic benefits. High-speed internet opens numerous possibilities for new jobs and better life quality and different technologies available today can provide an adequate service even in remote areas. Another important element of an enabling environment is regulation of the telecommunications market, which should not be the limiting factor for the market development.

[Strategy for Broadband Development for 2016-2020](#) has several groups of incentives. One of the main groups of incentives is comprehensive information on broadband high speed. All the advantages and benefits associated with the availability of broadband high speed are not sufficiently conscious among end users and public authorities at the regional (county) and local level (cities and districts) and educating local and regional government on how they can improve the level of development and quality of life in their area through the construction of a new electronic communications infrastructure. It is also necessary to conduct and present the results of research into the possibility of application of certain broadband technologies in order to ensure access to a high speed in the Republic of Croatia, in accordance with the state of the

existing infrastructure and regulatory framework, following the global development of underlying technologies and standards. Through public information on the state of availability of broadband access is necessary to provide updated information on the availability of broadband access to what is possible more precise locational level, together with relevant information on the supported technologies and access to the highest connection speeds. Furthermore, through the promotion of social and economic benefits associated with the availability of broadband high speed is necessary awareness about the advantages and benefits associated with the availability of broadband high speed. End-users, including citizens and economic operators, needs to be further aware of all social and economic benefits associated with the availability of broadband high speed. No less important is the need for end-users (citizens and economic operators) to educate on the protection of user rights and safety of using the Internet, in cooperation with the relevant government bodies to implement policies to encourage demand for broadband services, especially in the digital economy. This increases the overall level of confidence of end users in the security of Internet use and increases the current unsatisfactory level of use of broadband access and services.

Croatian Regulatory Authority for Network Industries prepared and implemented in the period 2012-2016, an assistance programme entitled „[Programme for Internet and Broadband Access Development in Areas of Special State Concern, in Highland Areas and on Islands](#)“. The Program promotes a balanced development of all elements of the ecosystem which, in the end, accelerates the development of the sector in general. Broadband ecosystem consists of networks, services, applications and users. Special attention was given to services suitable for rural areas. Program state aid was approved by the Croatian Competition Agency (CCA) and the European Commission.

Internet access and high-speed internet can also be achieved by using radiocommunications technologies, especially to address digital divide. Croatia has already assigned the 800 MHz band for mobile networks and one of the measures defined within the [Strategy for Broadband development 2016](#) is the clearance and allocation of 700 MHz band for mobile broadband (second digital dividend). The main benefits of this radiofrequency spectrum include better coverage, improvements in mobile performance (particularly in hard to serve locations such are rural areas and deep indoors), lower number of necessary base stations / lower costs for operators and potential for lower consumer prices. Additionally, the 700 MHz band will be the only sub-1GHz band with harmonised use across such a large international footprint. Croatia is currently developing the Strategy of the transition to DVB-T2 and allocation of 700 MHz frequency spectrum for IMT, which should be adopted by the end of the year. Due to the growing need for additional traffic capacities to enable mobile broadband, other frequency bands (e.g. 2.6 GHz and 3.5 Ghz) should also be considered for future assignment.

2. What are the elements of an enabling environment to promote an affordable Internet?

Prerequisite for affordable internet is high-level competition. There needs to be a simple and straightforward licensing process, with no legal barrier to market entry. Competition is important at every layer of connectivity. Having multiple international connectivity options from multiple providers is the best opportunity for the market to provide abundant and affordable access for users. Regulators should be ready and able to tackle anti-competitive behaviour. Regulation should be clear, transparent and predictable and regulators should have the authority and capacity to enforce regulation. Regulators need to be independent of government and business and in order to ensure that independence they should have adequate and stable funding. The processes for building and sharing infrastructure are also important and wherever possible this should be coordinated with other infrastructure work (on roads, for example). Public funding can play an important role, but should be used to support public **infrastructure** where there are

clear market failures. Public funding should be used through open and competitive tendering processes and the capacity it delivers should be available to all in a non-discriminatory way.

In order to foster “fair” competition on retail level, regulatory measures at wholesale level are often needed, which provide the same conditions for all market players. HAKOM imposed regulatory measures in both **wholesale** broadband markets which allow competitors at retail level to compete with the incumbent.

3. What are the elements of an enabling environment to promote the quality of access to the Internet?

Due to increasing availability of telecommunications services and familiarity of users with their rights, quality of provided services becomes more and more important factor influencing consumer decisions when choosing service provider. Implementation of professional, unified methods and indicators for assessing the quality of services is necessary to enable customers to assess the quality of telecommunications services in practice.

The importance of the access service quality was addressed by the HAKOM in 2012. This issue is both significant and complex, which is why the HAKOM suggested telecommunications companies and academia to cooperate in order to define quality indicators. The results of service quality measurements are useful to all participants of the telecommunications market: The regulator is able to verify its regulatory policy, operators may identify vulnerabilities on their network and make investment or modernization decisions. Nevertheless, the most important benefit is provided to users of telecommunications services who receive information that enable them to check the contracted quality of services, compare the quality of services available on the networks of different operators, and to make more informed choice. [Information's available on HAKOM website](#)

Moreover, a certificated measurement tool ([HAKOMetar](#)) for fixed network was created in 2012. Service users can use the measurement provided by HAKOMetar in official complaint procedure before operators. HAKOM plans to develop a measurement application for mobile platforms that work under different operating systems in 2017. With this application, users of mobile internet access services will have the ability to measure the quality of service parameters and compare networks of mobile operators. This will stimulates competition between the operators and leads to further development of networks and services

4. What are the elements of an enabling environment to build confidence and security in the use of the Internet?

Rapid development of information society brings new, advanced digital technologies and services that have become part of the public communication network. New services and applications tend to personalize their content which enables them to provide better service and user experience to the end users. However, in order to do so, services usually require users to give up their personal information to a large extent. This introduces potential risks associated with the protection of personal data and user privacy.

Publicly available electronic communications services, delivered over the Internet, open new possibilities for users but also new risks for their safety and privacy. The problem of privacy on the Internet became more significant after the development of applications such as social networks, online shopping, and similar which require users to give away their personal information to the service providers. Most of these users are unaware of the risk of violation of privacy and do not understand the potential consequences of such activities and that's why regulator have to do everything to raise awareness and education of the end users about the risks when they leave their personal information on the Internet, but not raise awareness so that users do not use the services available on the internet but that they use those services with more caution.

For those reasons HAKOM, in cooperation with Faculty of Electrical Engineering (FER), developed application [User Privacy Risk Calculator](#) and this application calculates risk while leaving personal information on the Internet in accordance with the habits of a particular user. Its main purpose is to inform the end users of internet access services about the possible dangers on the Internet.

Further, HAKOM is actively participating in campaigns such as [Cybersecurity Month or Safe Internet Day](#) by organizing conferences that promote safe and responsible use of Internet. Along with partners such as Ministry of Interior Affairs, child protection organizations and consumer protection groups we are working to inform the users how to best protect themselves while on Internet and what to do if they suspect they have become targeted by criminals.

Cooperation with the National CERT has resulted in publishing a [guide for users how to better protect their privacy on the Facebook](#) and we have also published [manual for pupils and parents on how to be better protected on the Internet](#) which is distributed in the schools. HAKOM regularly informs the public about ongoing threats using Twitter, Facebook and web page and our employees participate as attendees and speakers in many events that deal with information security and user protection.

5. What is the role of Governments in building an enabling environment?

Governments have a fundamental role in building an enabling environment for access to the Internet, by addressing and resolving the key barriers to increase internet access through the national policies. Many countries have adopted their own national plans and broadband development strategies in order to promote broadband development.

Governments can play an important role in building an enabling environment for users by improving Internet penetration, especially in rural areas or areas lacking sufficient commercial interest for investments. In that way governments can establish programmes for the Development of Next Generation Access in areas lacking sufficient commercial interest for investments by operators and service providers on the market, because of which it is justified to co-finance the development of broadband infrastructure through public funds, that is, through state aid (in Croatia: [National Framework Programme for the Development of Broadband Infrastructure in Areas Lacking Sufficient Commercial Interest for Investments](#) and [National Programme for the Development of Broadband Backhaul Infrastructure in Areas Lacking Sufficient Commercial Interest for Investments](#)).

The development of broadband e-services is of particular importance for the economic development and the development of a knowledge society. Often end users and public authorities on the regional and local levels are not sufficiently aware of all the advantages and benefits in connection with high-speed broadband access availability. Also, government needs to educate citizens and economic entities about the protection of user rights and the safety of Internet use in cooperation with the competent state administration bodies which carry out the policy of encouraging demand for broadband services, especially in the field of digital economy as this increases the end users' overall level of confidence in the safety of Internet use.

Following above mentioned objective, government of the Republic of Croatia has developed [Strategy for Broadband Development for 2016-2020](#) which continues the positive broadband development envisaged in the Strategy for Broadband Development in the Republic of Croatia by 2015. Strategy emphasizes that the development of broadband Internet access infrastructure and services, with speeds greater than 30 Mbit/s, is of interest for the Republic of Croatia and one of the development prerequisites of a modern economy, and therefore it provides a strong political and operational incentive for the creation of conditions for acceleration of development of high-speed broadband Internet access in the Republic of Croatia. At the same time the Strategy emphasizes the need of ensuring the availability of broadband access with speeds above 100 Mbit/s so that the development of broadband infrastructure follows development of new bandwidth-consuming services and applications. These values are in line with the key performance targets of the Digital Agenda for Europe which has the purpose of accelerating expansion of fast Internet and using advantages of digital single market for households and the business sector across European Union.

Governments should also recognize the importance of developing e-government services as they are a major component of locally relevant mobile content in developing countries and in creating a thriving digital economy. In Croatia this is recognized through [strategy "e-CROATIA 2020"](#), which has goal to develop innovative e-services of a modern public administration and uncovering of the information of public administration through different channels available anytime, anywhere and on any device, with the aim to improve the life of its citizens, and thus raise the competitiveness of economy by supporting the development of digital economy.