Croatian Post and Electronic Communications Agency

Annual Activity Report for 2013

Zagreb, June 2014

Contents

INTRODUCTION

In accordance with its legal obligation, the Croatian Post and Electronic Communications Agency hereby submits its Annual Activity Report for 2013. The report includes all the information on the electronic communications and postal services markets regulated by HAKOM in 2013.

After the entry into force of Act on Amendments to the Electronic Communications Act in 2014, the Rail Market Regulatory Agency (hereinafter: ARTZU) will be merged with the Croatian Post and Electronic Communications Agency (hereinafter: HAKOM) thus creating a single national regulatory authority for the regulation of electronic communications, postal services and rail services markets - the Croatian Regulatory Authority for Network Industries, which will retain its abbreviated name HAKOM.

In 2013, the Croatian Post and Electronic Communications Agency continued its activities aimed at the achievement of regulatory objectives and principles on electronic communications and postal services markets. The objectives and principles of HAKOM's work were laid down in HAKOM's Annual Activity Plan for 2013[1] and include the promotion of competition, ensuring the protection of users of services and efficient management of limited natural resources, such as the radiofrequency (hereinafter: RF) spectrum and the addressing and numbering space. Special emphasis was placed on the protection of competition, promotion of efficient investments and innovation while ensuring the protection of competition and respect for the principle of non-discrimination, promotion of regulatory predictability, prevention of discrimination in relationships towards operators, ensuring a high level of user protection and efficient management of limited natural resources.

HAKOM fulfilled the set objectives through its regulatory activities and ensured the preconditions for stability of its business activity on electronic communications and postal services markets. Special emphasis was placed on user protection. In addition to regular regulatory activities, HAKOM's activities also included the achievement of objectives laid down in the Strategy for Broadband Development in the Republic of Croatia and the Implementing Programme for the Strategy for Broadband Development in the Republic of Croatia for 2012 – 2013. The Programme for Internet and Broadband Development in Areas of Special State Concern, Hilly and Mountainous Areas and Islands is also implemented within the framework of the Strategy. The purpose of the programme is to assist in the development of rural areas of the Republic of Croatia (hereinafter: RC) and to support a balanced regional development of information and communication technology, the strengthening of HAKOM's own capacities continued through further development of e-Agency, professional training and use of resources from pre-accession funds of the European Union (hereinafter: the EU).

Accession of Croatia to the EU had a special impact on HAKOM's activities in 2013. HAKOM was entrusted with new obligations and tasks in European Commission bodies (hereinafter: EC) in charge of regulation of electronic communications and postal services markets. For that reason, in the second half of 2013, the majority of HAKOM's activities were focused primarily on the work within these bodies (BEREC, COCOM, ERGP, IRG, RSPG).

The report is divided into nine chapters preceded by the summary of the Annual Report. The list of abbreviations, figures and tables is provided at the end of the report.

Chapter 1 covers the electronic communications market which divided into two segments – market overview and overview of regulatory measures. The following services are covered by the market overview: telephone services in the fixed network, telephone services in the mobile network, internet access service, television (hereinafter: TV) services, network and line leasing services and other services. This part also contains information about market investments and innovations in 2013. The overview of regulatory measures includes the most important HAKOM's regulatory decisions on markets susceptible to *ex ante* regulation. This, in particular, includes decisions

[1] http://www.hakom.hr/default.aspx?id=512

concerning the determination of reasonable rate of weighted average cost of capital (WACC), costs and prices of interconnection services in mobile and fixed network, determination of prices for unbundled access to the local loop, procedure for amending HT's reference offers and transition to IMS technology as well as market analyses of wholesale broadband access market and of the market of wholesale physical access to network infrastructure.

Chapter 2 covers management of limited resources - the RF spectrum and the addressing and numbering space. The management of the RF spectrum is presented in general and for individual radiocommunications networks. In includes, in particular, an overview of the RF spectrum and R&TT equipment. The part on the addressing and numbering space management includes information on numbering and number portability plans.

Chapter 3 gives an overview of the situation on the postal services market which comprises providers on the postal services market and individual types of postal services. It includes an overview of regulatory measures on the postal services market and information on the carrying out of inspection supervision and on the monitoring of the situation on the market and of the development of the market. A special emphasis is placed on the monitoring of quality of provision of universal services and decisions on accounting separation.

Chapter 4 covers implementation tasks concerning consumer protection on the market of electronic communications and postal services. A special emphasis was placed on the protection of children and access to services for disabled persons.

Chapter 5 concerns the publicity of work. It includes the imposed obligations and activities implemented for the purpose of achieving transparent business operations and facilitating communication with the public.

Chapter 6 deals with court proceedings initiated against HAKOM's decisions at the High Administrative Court of the RoC or proceedings initiated by HAKOM.

Chapter 7 covers HAKOM's cooperation abroad and at home and presents important activities conducted for the purpose of placing HAKOM as a relevant factor in the area of regulation of markets under its competence.

Chapter 8 describes HAKOM's activities aimed at building its own capacity for market regulation and market development by means of IT introduction into its processes and services, the increase of regulatory competences, the increase of productivity and efficiency and by facilitating access to HAKOM's regulatory activities.

Chapter 9 includes the financial statement and final statement for 2013. The Chapter contains the income statement, expenditure statement, overview of revenue surplus (deficit), investments statement, statement on revenue from the state budget and findings of an independent external audit.

SUMMARY

In 2013, the electronic communications and postal services markets were also influenced by the accession of the RoC to the EU. Under its competence and in cooperation with other institutions in the Republic of Croatia, HAKOM, as a national regulatory authority, timely adjusted both markets to the EU regulatory framework. Aware of the importance of creating a favourable environment for investments, primarily in the EC market, HAKOM initiated a series of strategic activities aimed at creating preconditions for further development of the regulated market in the Republic of Croatia, in particular:

- The allocation of the remaining digital dividend to operators of mobile communications opened possibilities for significant investments into infrastructure and development of new applications and ensuring availability of high-speed broadband Internet access to a large number of citizens in the entire territory of the Republic of Croatia, with a special emphasis on access in rural and underdeveloped areas. The first allocation of the digital dividend brought HRK 332 million into the State Budget and additional HRK 320 million in annual fees until 2024. With the second allocation of the digital divided in 2013, one-off fees amounting to HRK 289 million and annual fees amounting to HRK 8 million were paid into the State Budget. The payment thereof will continue until the expiry of licences in 2024. Thus, the Croatian State Budget earned more than HRK 1 billion from the sale of the digital divided.
- HAKOM started awarding state aid for the development of a broadband ecosystem in rural areas already in 2012 in accordance with the HAKOM's "Programme for Internet and Broadband Development in Areas of Special State Concern, Hilly and Mountainous Areas and on the Islands" which was included in the Implementation Programme (measure 4) for the *Strategy for Broadband Development in Croatia for the period 2012-2013.* The objective and purpose of state aid is to achieve a balanced regional development, connecting of target groups such as educational, health and public institutions to broadband access network and the introduction of applications and services that make the economy more dynamic and improve the quality of life in the abovementioned areas. A total of HRK 15,141,093 was paid in 2013 in three tenders for the development of broadband infrastructure in 13 counties, and additional HRK 13, 452,794 was awarded and it will be paid in 2014 after the completion of the project. A total of HRK 3,336,305 was paid for the development of applications promoting the use of broadband access, and additional HRK 2,790, 141 was envisaged for development for target users: Croatian Institute of Public Health, Croatian Health Insurance Fund, Croatian Firefighting Association, CARNet, Ministry of Public Administration, Agricultural Advisory Service and Ministry of the Interior.
- After the accession of Croatia into the EU, mobile network operators were obliged to apply new, regulated roaming prices. HAKOM carried out all the preparatory activities for successful application of new roaming prices which coincided with the beginning of the tourist season. HAKOM also prepared a list of answers to most frequent questions of end users thus enabling transparent application of new conditions.

Electronic communications

According to the official data on the electronic communications market, a total revenue of HRK 12,068 billion was earned in 2013, which is a 2 percent drop compared to 2012. The main reasons for this decrease include, according to HAKOM, the economic crisis in the country and its surroundings, lower purchasing power Croatian inhabitants, amendments to the EU regulatory framework and objectives of operators in terms of investments and innovations into network, which are subject to financial objectives, in particular to profit.

The electronic communications market was characterised in 2013 by a development of broadband services and interactive television. The revenue from the Internet access service increased the share in total revenue of the electronic communications market from 18.98 percent to 20.81 percent and, together with the television services market, represents a growing segment of the electronic communications market. However, this growth was insufficient to compensate for the fall in revenue from other services. Increasing demand for Internet content and data services, and a continuous fall in revenue from telephone services in fixed and mobile network represent a continuation of trends from the previous years.

There was a noticeable growth in investments in 2013 compared to the previous year by a little over seven percent, that is, a total of HRK 2,414 million was invested, out of which around 72 percent into telecommunications infrastructure and equipment. Investments per inhabitant in 2013 amounted to around EUR 74. As a comparison, investments per inhabitant in 2011 amounted to EUR 47.70 and were significantly lower than the EU average. Since investments into new technologies today, which could compensate for the fall in revenue in traditional communications, will yield results in a few years, further (milder) flaws in total revenue in the next few years should not be surprising.

It is a positive fact that operators showed more interest in innovations in 2013, that is, for the implementation of new technologies, which is why, following a series of pilot projects with LTE, NGN, NGA and IMS, the commercial applications of these networks have started.

Internet use is a necessary part of modern society and an indispensable support for the development of information society. The technological basis of an information society is an electronic communications infrastructure based on broadband Internet access. The newest broadband services (education, health, internet Protocol Television - IPTV, work from home and other) require certain transfer capacity which may be achieved by means of VDSL, optical access infrastructure (FttX), cable infrastructure (Docsis 3.0) and appropriate wireless next generation technologies.

Continuous growth of this part of the market in the RoC is evidenced by a continuous increase in total revenue (from Internet access services) and the number of connections in the previous years. In other words, total revenue in 2013 increased by 7.3 percent compared to 2012 amounting to HRK 2,511 million while the total number of connections in 2013 numbered 1,347,159 which is 10.7 percent more than in the previous year.

Broadband access is becoming one of the basic needs of today's world, in particular for the economy. The share of broadband mobile access, in addition to VDSL, optical access infrastructure (FttX), cable infrastructure (Docsis 3.0), is increasing, which is illustrated by a continuous growth in the number of users of broadband access over this network. At the end of 2013, there was a total of 423.272 mobile operators broadband connections for data services, which is almost 30 percent more than at the end of 2012. The reasons include increased traffic, new services that are interesting to users a large number of accessible devices and user's requirement to always have Internet access regardless of when and where they are.

The number of fixed broadband connections at the end of 2013 amounted to 923,887, which means that the average broadband penetration rate is 21.56 percent. If mobile broadband connections, the penetration rate of which is 9.88 percent, are added to this number, the total penetration rate of broadband connections in mobile and fixed networks reached 31.44 percent at the end of 2013. According to the broadband penetration rate in the fixed network, the RoC is among less developed countries compared to the EU member states, while it is among more developed countries in relation to mobile broadband penetration rate. Regardless of the increase in the number of users, there is still room for a stronger growth in this segment, in particular in the area of optical access network. This type of growth in the RoC is necessary, among other things, because of the possible widening of the digital divide between the Roc and Member States.

There are significant regional differences in the RoC in relation to the number and penetration of broadband connections in the fixed network and it currently represents an even greater challenge than the increase in broadband penetration at the national level. Although the availability of broadband Internet access is increasing almost on a regular basis, some regions (rural areas, islands etc.) can hardly expect to have broadband access in the near future without active involvement of the state in broadband penetration projects. Those regional differences were somewhat mitigated in 2013 by investments into rural areas and islands through HAKOM's aid programme, and by means of regulatory measures and allocation of the digital divided and introduction of the LTE technology into mobile networks. After a long time, another county (Zadar) achieved better than average results.

The majority of HAKOM's activities concerning spectrum control continued to be focused on the measuring of interferences by the Italian Republic in the entire the Croatian coastal area. All planned measuring campaigns and other measurements in the RF spectrum were successfully carried out in accordance with the measuring plan, with a special emphasis on the protection against interference. Extensive measurements were carried out along the coast and on the islands in 2013 with the objective of monitoring and identifying interferences from Italy. The measuring resulted in 596 new international interference reports to the public administration bodies of the Republic of Italy. Italy did not resolve or eliminate any of the interferences reported in 2013.

In addition to this measuring, HAKOM also carried out systematic measuring aimed at protecting the RF spectrum as a naturally limited resource of interest for the RoC. Everyday measuring was carried out in all four CMC (hereinafter: control and measuring centre) and eight remotely controlled CMS (hereinafter: control and measuring stations), while measuring vehicles carried out periodical measuring. The RF spectrum monitoring also included measuring the level of electromagnetic fields for the purpose of efficient protection of human health from the influence of the electromagnetic field. Measuring results submitted by legal persons authorized for the activities of measuring electromagnetic radiation were checked on a regular basis. A mobile CMS Istria was also put into operation during the year as the ninth remotely controlled control and measuring station, which increased the efficiency of measuring for the purpose of RF spectrum protection in the RoC.

Postal services

The postal services market was officially liberalized in early 2013, and on 1 July 2013 it became a part of the EU common market. The liberalization of the market slowed down the negative trend existing on the postal services market in the last several years, and with the appearance of new providers the offer was enriched with new postal services and, in addition to the lowering of prices of individual segments of postal services, a growth trend was recorded in relation to parcels and high-value services, accompanied by a simultaneous fall in traditional postal services thus starting a trend in the Republic of Croatia which is already present in more developed countries.

A total of 339,690,438 services was provided on the postal services market in 2013 with a decrease of a little over one percent compared to the previous year. The majority of services, approximately 94 percent, were provided on the domestic market, and progress was also achieved on the international market. Out of the total number of services on the market, HP's share was 70.8 percent, and the rest belonged to other providers. When the number of services provided by HP and other providers of postal services in 2013 is compared to the previous year, HP's total number of provided services increased by 3.5 percent, while the number of services provided by other service providers decreased by approximately 11 percent. HP remained the leading provider of postal services in 2013 and its share on the total postal services market increased by 3 percent. Among all provided postal service, universal service made almost 54 percent of all services, and other postal services almost 26 percent, with substitute postal services at around 20 percent.

Revenue reported by providers of postal services in 2013 amounted to HRK 1,426,100,267, which is three percent less than in 2012. The main reasons for the fall in revenue are related, on one hand, to the unfavourable economic situation in Croatia while, on the other hand, they are linked to market liberalization which resulted in the decrease in prices of certain postal services due to greater competition.

At the end of 2013, there were 23 postal service providers who provided postal services on the basis of an application. HP is the only provider of universal services, which acquired its right and obligation to provide universal services on the entire territory of the Republic of Croatia on the basis of the PSA for 15 years.

HAKOM's activities on the postal services market in 2013 were focused in the first place on regulation of a completely liberalized market with a view to creating equal conditions for all providers, in particular on sustainable provision of universal services, with a special emphasis on its quality, affordability and availability, so that all users can have the equal right and ability to use the universal postal service and the uninterrupted provision of which is guaranteed by the Republic of Croatia in its entire territory. Efforts invested by HAKOM and HP resulted, in 2013, in the laying down of quality criteria for the provision of universal service in domestic traffic. Furthermore, bearing in mind the quality of the universal service in relation to the density of postal offices network and, in general, the importance of postal offices for the quality of life in rural areas, HP kept more than 300 postal offices out of the prescribed minimum. A total of 24 postal offices were closed in 2013, which means that there were a total of 1 018 postal offices at the end of 2013. The majority of postal offices were closed on border crossings with Slovenia and Hungary because of the accession of the Republic of Croatia to the EU and they were no longer needed.

Users

Consumer protection is the most subtle manner of regulating a market. Efficiency of user protection influences the trust of users into the market and into the offered services. Without the trust from users, market growth is very questionable.

In 2013, HAKOM continued with its strong user protection. The protection of end users is ensured through the application of the principle of objectivity, transparency, non-discrimination and proportionality in the protection of competition including simple and accessible resolution of disputes and complaints. HAKOM pays a lot of attention to preventive activities, instructions and advice to end users on how to protect themselves and avoid the problem and to open and simple communication with the users. A quick and simple way of resolving a possible problem and dissatisfaction of end users is the “Ask us" link. HAKOM answers questions of end users (and journalists) within the shortest possible time. In the majority of cases, users are instructed about further action and registration of users for initiating dispute resolution proceedings before HAKOM via the Internet application "e-Complaints": Registered uses are able to follow the status of their complaint and to receive additional information and send supplementary information by means of the abovementioned application. In order to achieve a high level of user protection, HAKOM prepared and put at the users disposal a tool for measuring the speed of Internet access, the so-called "HAKOMetar". The purpose of the tool in 2013 was to provide proof of non-fulfilment of contractual obligations of operators if Internet access speed is too slow.

A total number of user complaints remained in 2013 at around 2300 cases in which users contacted HAKOM directly. The number of bill complaints decreased by 12.5 percent but, with a total of 1217 complaints, bill complaints still make the majority of complaints. The number of complaints about operators increased by 25 percent compared to the previous year primarily because of the increase in the number of cases where users complain about the contract or the cancellation of contract with the operator. This may be linked with the increased number of ported numbers in 2013 as a consequence of new, more favourable tariffs on the market since every ported number means a contract with the new operator. The number of quality complaints remained at the 2012 level. Out of all complaints submitted to HAKOM, a total of 1696 ended as disputes, which is about five percent more than in the previous year.

With the entry into force of the new PSA on 1 January 2013., the procedure for the protection of users and resolution of user complaints was aligned with the procedure for the protection of end users of communications services pursuant to the ECA, as a three instance procedure. In 2013

HAKOM received 46 applications for dispute resolution between users and providers of postal services the majority of which referred to disputes with providers of postal services for non-provision of the service and loss and damage of contents of the postal item.

Since the majority of service providers treat children as a market, HAKOM intensified its activities aimed at protecting children during Internet and electronic communications services use. Special attention was dedicated to the promotion of parents responsibility and laying down the obligations of operators of electronic communications networks on the basis of which parents may request from their operators to ban access to certain content which is inappropriate for children, to restrict the use of special tariff services and to limit spending. Operators are requested to behave in a socially responsible manner in relation to children, beyond what is prescribed by the law. With a view to increasing protection of children on the Internet to a higher level, HAKOM joined the Safer Internet Centre as a strategic partner[2]. The Safer Internet Centre merged activities of several different institutions and organization dealing with the protection of children on the Internet.

In addition to regular activities aimed at ensuring Internet access for disabled persons, HAKOM paid special attention to applications for disabled persons as part of its Internet and broadband access development programme. This programme included three applications intended for disabled persons: personal therapist programme, adjustment of the website of the Croatian Institute of Public Health for disabled persons and Internet advertising for disabled persons.

Cooperation

HAKOM actively participated in the work of international working groups in EC (COCOM, ERG, IRG, RSPG, RSC) and in the work of ITU's and CEPT's working groups in the sector of electronic communications market and in CERP's and UPU's working groups on the postal services market. Since 2013 HAKOM has been representing the Republic of Croatia in the coordination of European attitudes and actions on Internet management. BEREC deserves special mention among international institutions. In fact, HAKOM's representative was elected vice-president in this organization in 2013. Regulatory authorities of all Member States of the EU recognized proactivity, expertize and vision demonstrated in the process of liberalization of the Croatian electronic communications market, its leading role in the region and a significant contribution of HAKOM's experts to the work of BEREC. The appointment of HAKOM's representative to a position of vice-president, less than six months following the start of membership in BEREC, is not only a confirmation of HAKOM's excellence but will also allow the RoC to participate more actively in the creation of pre-conditions for the establishment of a common European electronic communications market and to further develop preconditions on the Croatian market achieved through liberalization of the electronic communications market. HAKOM's important role in the region was confirmed by an invitation for participation in several regional and international conferences where HAKOM's experts lectured.

At the national level, cooperation with all ministries was excellent, in particular with the MSTI on joint activities, state administration bodies and other agencies. Excellent cooperation with universities, especially with the Faculty of Electrical Engineering and Computing, must also be mentioned.

HAKOM

[2] Strategic partners of the Safer Internet Centre: Croatian Personal Data Protection Agency, Croatian Education and Teacher Training Agency, CARNet - Croatian Academic and Research Network, Ministry of Social Policy and Youth, Ministry of the Interior of the RoC, MInistry of Public Administration, Ministry of Science, Education and Sports, Veliki Bukovec Elementary School, Polyclinic for the Protection of Children of the City of Zagreb, Zagreb Polytechnic, Pupil Dorms of Hrvatski Radiša, Association „Partners in Learning", 15th Grammar School in Zagreb.

In 2012, HAKOM implemented several applications aimed at improving business processes by using web-based technologies. In addition to e-applications intended for external users, HAKOM has also sped up internal processes by introducing new IT solutions and platforms. The introduced tools enable efficient cooperation in everyday processes of regulators, and communication with end users, which is why they are accepted by employees and users.

The most important programmes aimed at improving organization and individual and group regulatory capacities were the following: "Interdisciplinary postgraduate course in regulation of electronic communications market", "Looking to the Future" project and language training, especially in the English language.

At the end of 2013, HAKOM employed 172 people. More than 82 percent of employees have university or college degrees, with electrical engineers prevailing at 40 percent, followed by economists at 18 percent, lawyers at 11 percent, transport engineers at 13 percent, and 18 percent have other degrees.

1 ELECTRONIC COMMUNICATIONS MARKET

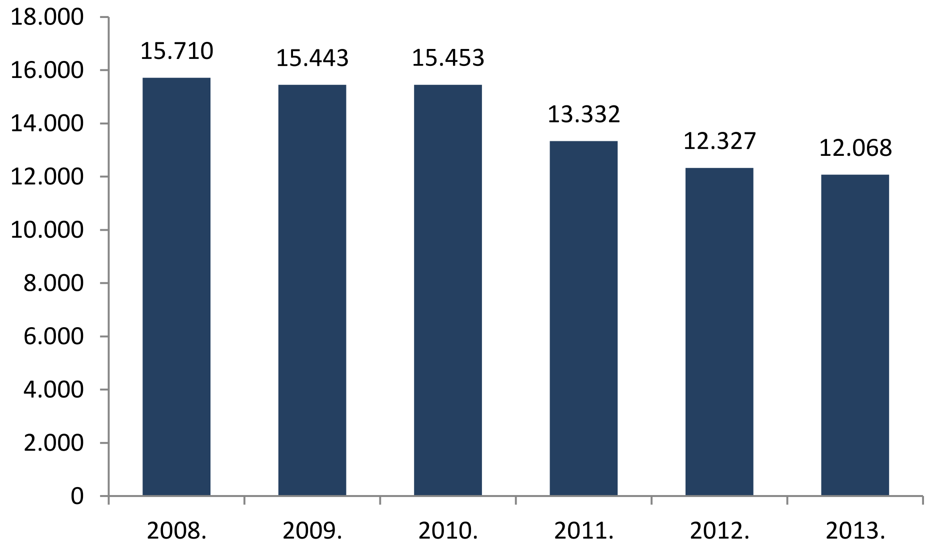
The electronic communications market is one of the strongest sectors of the economy and, as such, one of the key pillars of every modern society. Investments in this sector stimulate investments in other sectors of the economy.

1.1 Market overview

The level of development of the electronic communications market is an exceptionally important factor in the development of any country. Needless to say that this has been one of the biggest and fastest growing sectors of the economy in the last 10 years.

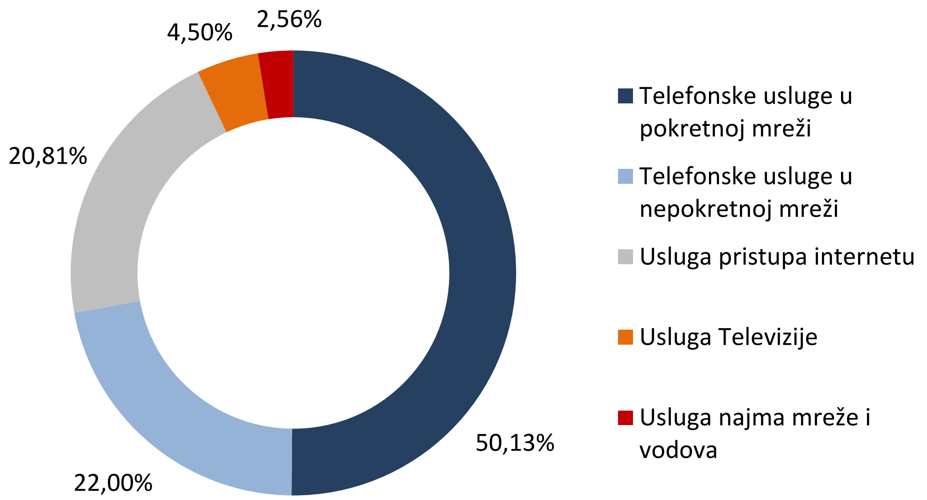
The fall in revenue that was recorded in 2013 compared to the previous year is a consequence of a continuation of the economic crisis that started in 2008. The expected impacts of the regulation, in combination with the continuation of the economic crisis, are particularly noticeable in relation to telephone services in the fixed network. In spite of a fall in revenue of almost all services on the electronic communications market, the revenue from broadband Internet services continued to grow in 2013. However, strong growth in the fixed network only partially compensates for the negative effects. Since the growth in revenue from internet access and television services was insufficient to compensate for the loss in revenue from telephone services, data for RoC demonstrate a fall in total revenue on the electronic communications market in 2013 by around 2 percent.

Figure 1.1. Total fall in revenue on the electronic communications market (in millions HRK)



The overview of revenue on the electronic communications market in 2013. per segments shows that revenue from telephone services in the mobile public communications network is dominant and followed by revenue from phone services in the fixed public communications network. Revenue from the internet access services have significantly increased as well as revenue from television services, which is for the most part due to faster development and use of broadband internet access.

Figure 1.2. Shares of services in total revenue on the electronic communications market



According to quarterly indicators of development on the electronic communications market in the last two quarters of 2013 more revenue was for the first time earned from the internet access service than from telephone services in the fixed network. The growth trend in the share of revenue from the internet access services on the electronic communications market is also expected in the upcoming period.

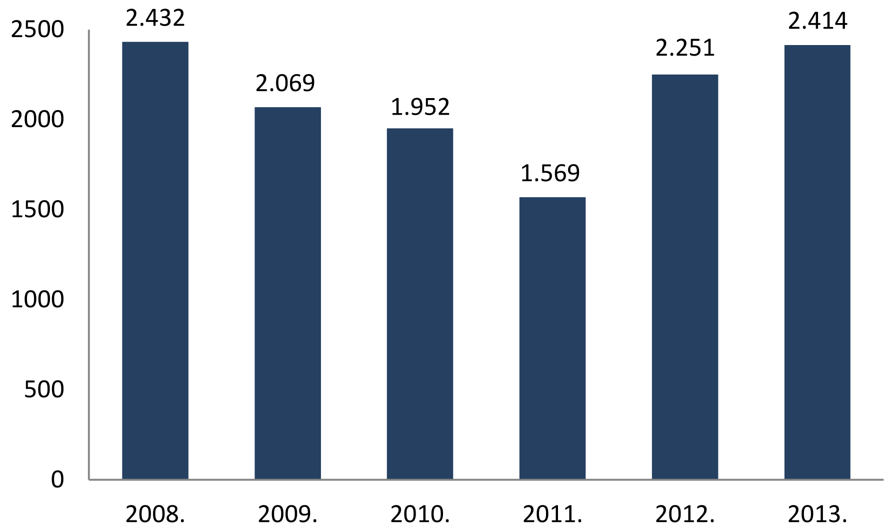
Table 1.1. Basic data on the electronic communications market

Basic data on the electronic communications market	
Telephone service operators in the fixed public communications network[3]	49
Operators of mobile public communications networks GSM/DCS/UMTS/UMTS	3
Users of telephone services in the fixed network	1,430,644
Users of telephone services in the mobile network	4,912,134
Broadband Internet users - total	1,347,159
Users over fixed public communications network	923,887
Users over mobile public communications network	423,272
Users of television services - total	701,927
Cable television connections (CTV)	148,061
TV connections based on IPTV	390,918
Satellite television connections (SATTV)	131,537
Terrestrial pay-TV connections	31,411
Radio networks	160
Television networks (digital television)	6

[3] Registered operators with general authorization

1.1.1 Investments and innovation

Figure 1.3. Total investments of electronic communications operators in the RoC (in HRK million)



For the second year in the row, an increase in investments was registered in 2013 compared to 2012. A large share of increased investments in 2013 refers to the allocation of the RF spectrum from the remaining digital divided for which operators earmarked HRK 289 million. The allocation of the digital divided represents a great potential for the future since it is particularly suitable for investments into broadband internet access in rural parts of Croatia.

1.1.2 Telephone services in the mobile network

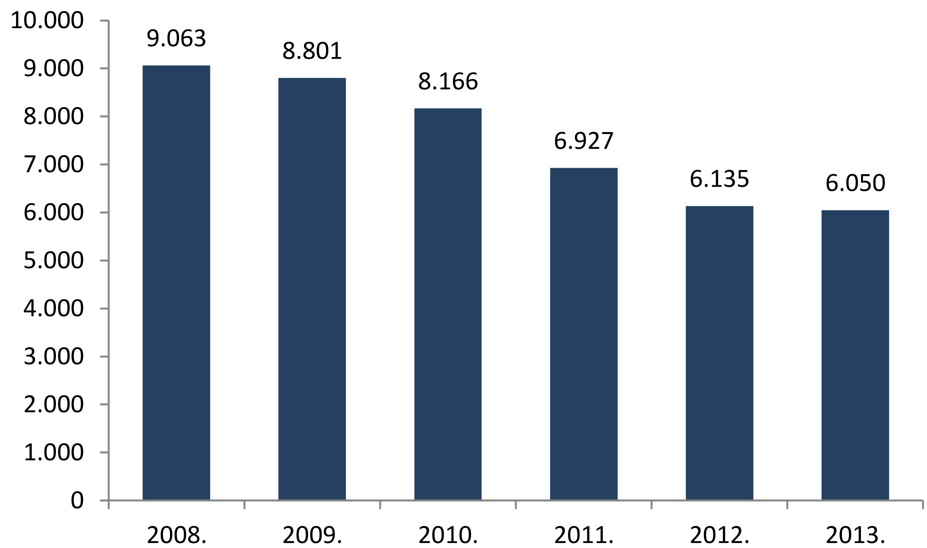
In spite of the increasing use of mobile communications, revenue from those services continued to fall due to the implementation of roaming regulation and lowering of call termination prices in the mobile network. The total number of minutes of usage on the Croatian mobile communications market increased by around 20 percent, while the number of sent text messages increased compared to 2012 by seven percent.

SMS messages have been a safe source of income for mobile operators for some time. However, many users have been substituting the existing services with applications based on the IP protocol. According to research conducted by Analysis Masona[4], around 20 percent of VoIP users spend more time using mobile VoIP applications than traditional voice services in the mobile network, and 5 percent of users of VoIP no longer use traditional voice services. Increased use of OTT services is particularly noticeable in countries with high mobile broadband penetration. It is expected that penetration of smart phones will increase by 50 percent in the Western Europe in the next five years and reach more than 70 percent of the total number of mobile devices.

With the increased use of these services, in particularly those oriented towards SMS exchange, their use began to fall in European countries. For that reason these services have become a serious problem for mobile operators due to negative effect they may have on the number of SMS and MMS messages and on their revenue.

Since the use of applications was not so widespread in the RoC in 2013., the number of SMS messages did not drop. However, it is expected that mobile applications will continue to grow in the upcoming years and this may result in stagnation or fall in the number of SMS messages in the RoC, which is a current trend in European countries.

Figure 1.4. Total revenue from telephone services in the mobile network (in HRK millions)



The density and number of users of telephone services in the mobile network that amounted to 4.912.134 in late 2013 represented a decrease by percent compared to 2012. The decreased number of users of telephone services in the mobile network is a consequence of the appearance of tariff packages for end users, that is, of the appearance of tariff packages that do not differentiate between calls within the network or towards other networks. More users have been choosing only one operator and it is expected that this trend will continue in the future.

[4] http://www.analysysmason.com/About-Us/News/Insight/OTT-mobile-VoIP-threat-Aug2012/

Figure 1.5. User penetration in public mobile communications network in the RoC

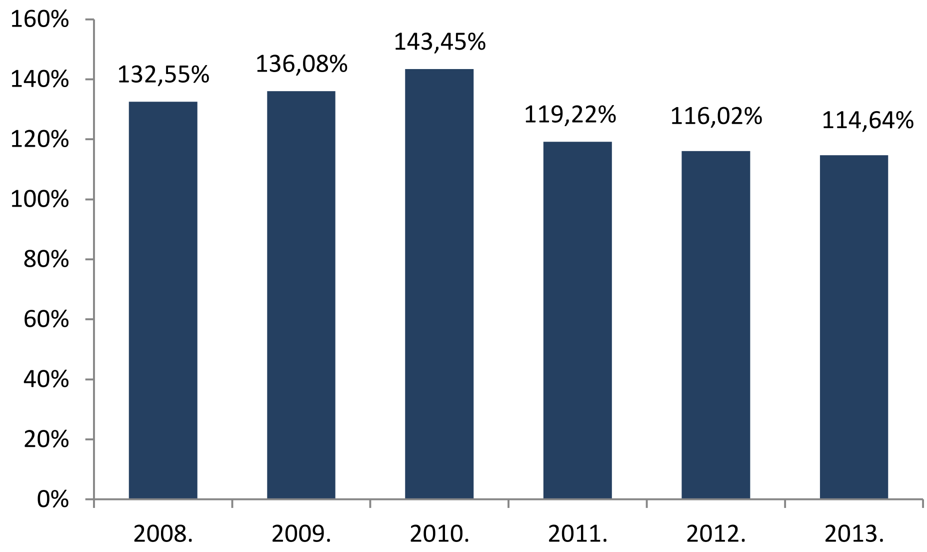
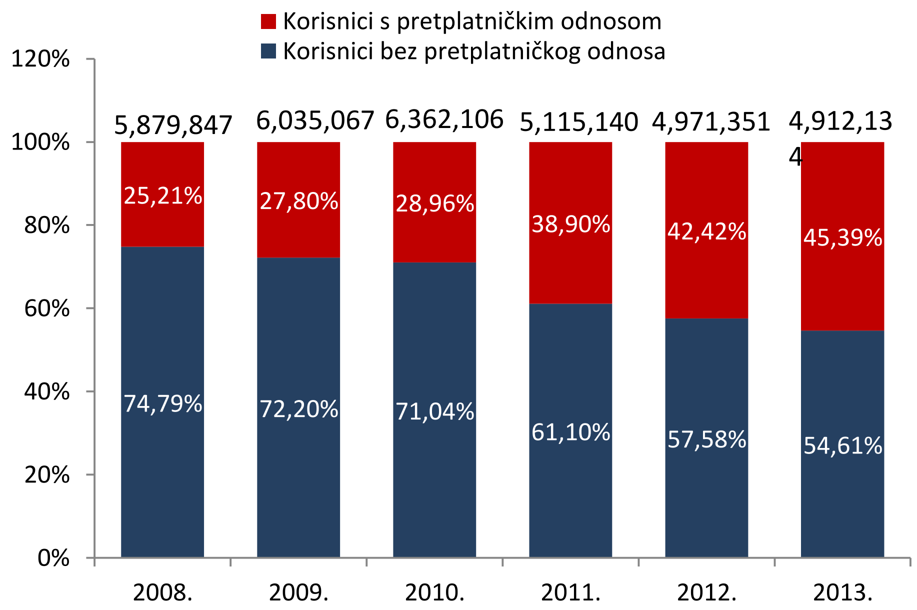
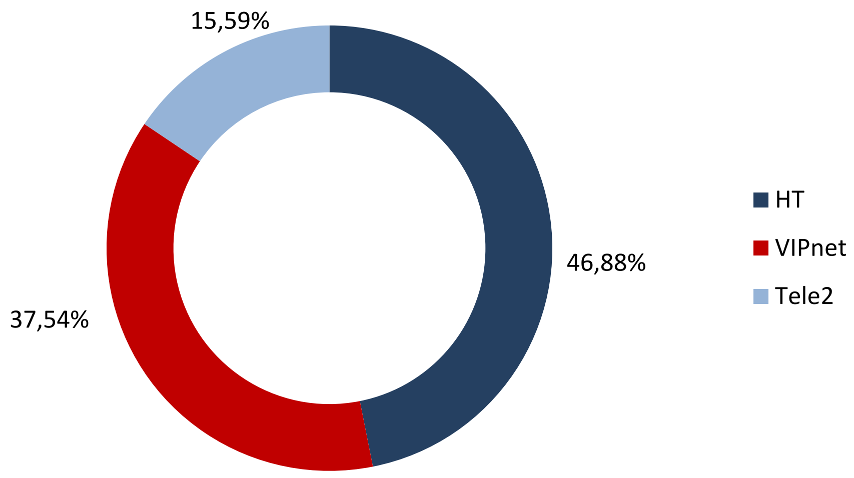


Figure 1.6. Division of the total number of users of telephone services in the public mobile communications network in the RoC



The number of subscribers increased in the period in question. According to the gathered data, their share in the total number of users at the end of 2013 totalled 45.39 percent. The increase in the number of subscribers results from offers made by operators with a view to migrating pre-paid users that were, in addition to including unlimited minutes, more oriented towards greater use of broadband services. One of the factors that influenced the increase in the number of subscribers was the increased popularity of smart phones. Because of the increased importance of broadband Internet access, which is closely linked to greater use of smart phones, it is expected that the number of subscribers will continue to grow in the upcoming years.

Figure 1.7. Market shares of operators in relation to number of users



In 2013 Tele2 continued to strengthen its position on the market of mobile telephone services with 15.59 percent of users. For comparison sake, in 2020, the share of users of mobile telephone services amounted to 14.58 percent. At the same time, revenue was lower than the previous year which was to be expected since operators lost part of their revenue due to new roaming regulation that has applied to operators of mobile network since the accession of Croatia into the EU.

Following Croatia's EU accession, roaming prices of all services dropped significantly, both for incoming and outgoing calls, at the level of SMS and data traffic. Figures 1.8 and 1.9 show a negative effect of roaming regulation on revenue of national mobile operators. Although traffic has increased considerably compared to years before 2013, it did not succeed in offsetting the fall in revenue after 1 July 2013.

Figure 1.8. Revenue and duration of calls of own users in roaming in international networks

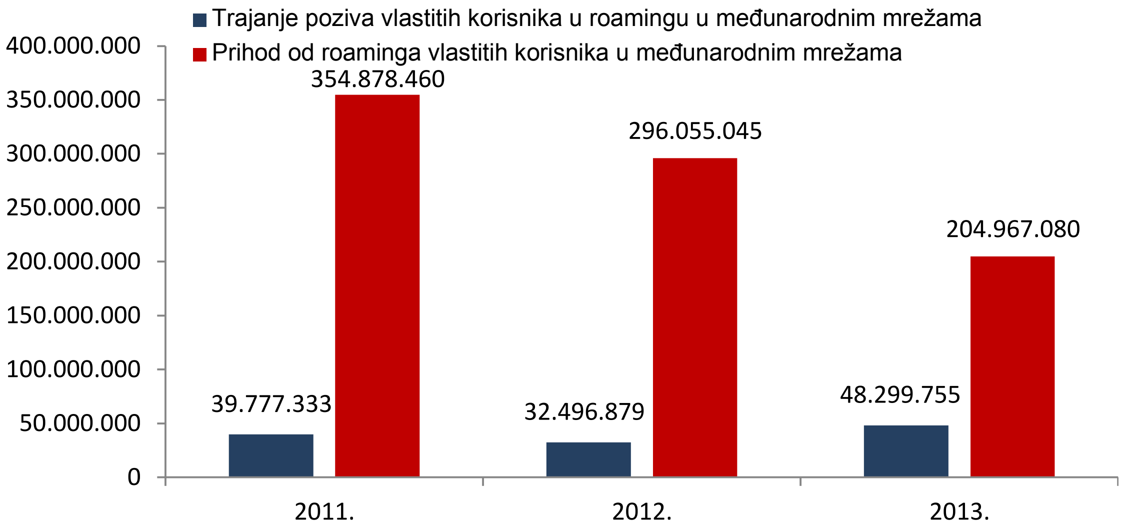
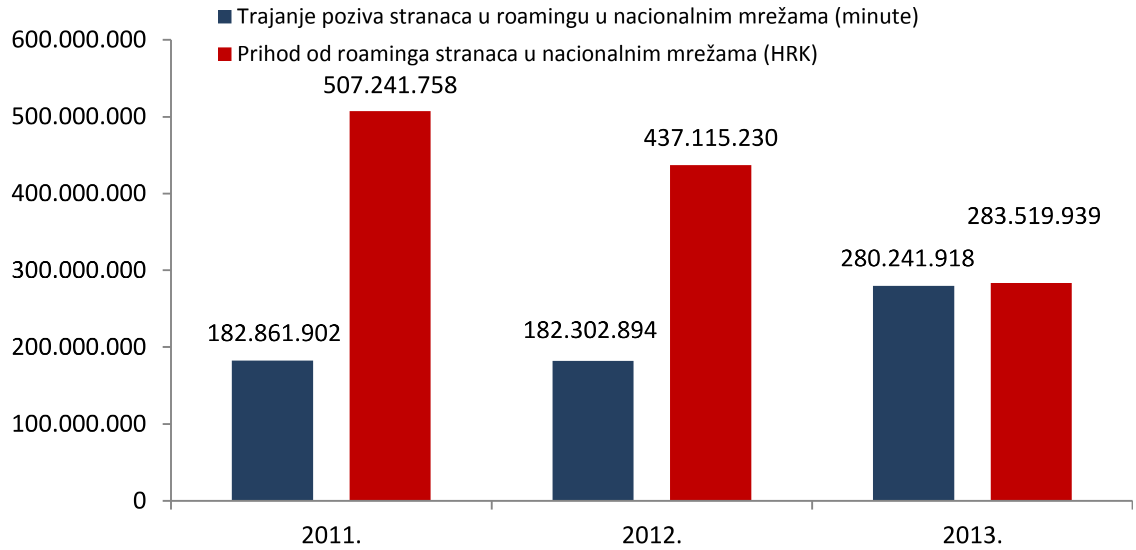


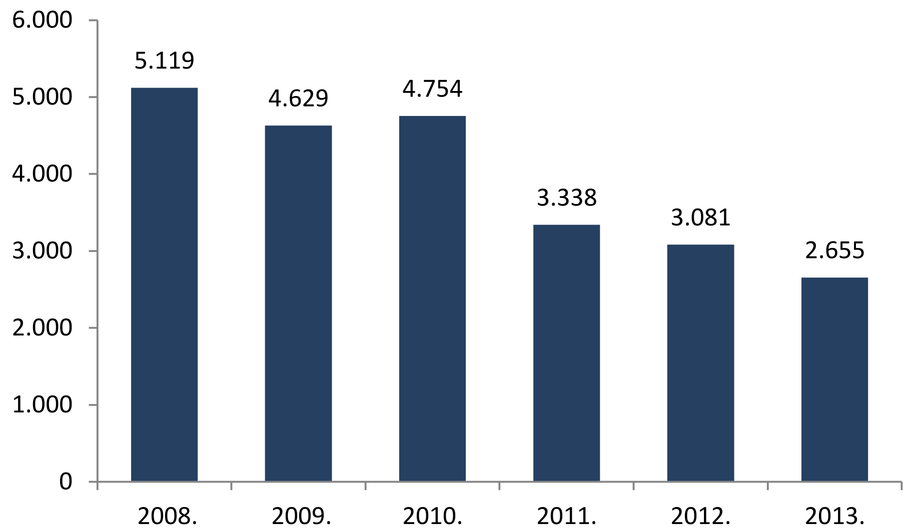
Figure 1.9. Revenue and duration of calls of own users in roaming in national networks



1.1.3 Telephone services in the fixed network

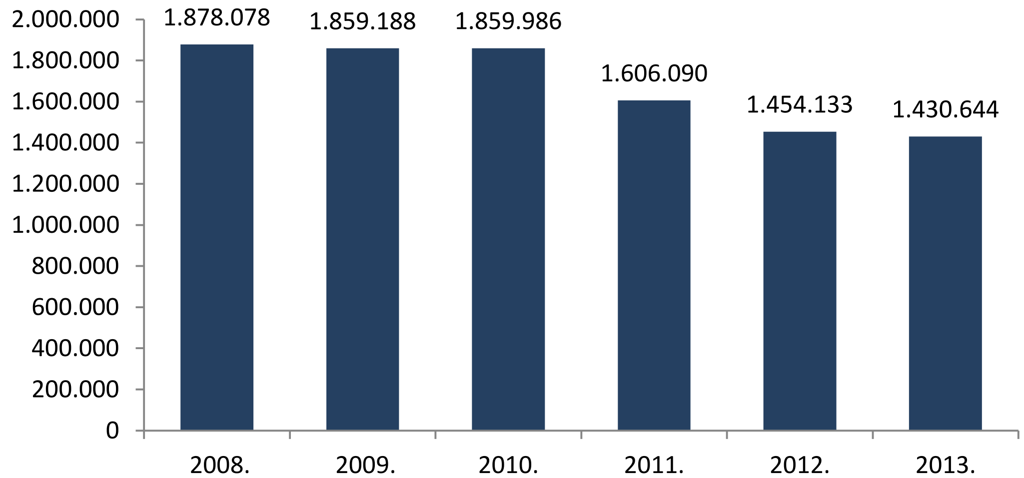
In accordance with market trends, both in Croatia and internationally, total revenue from fixed telephone services decreased compared to 2012. The decrease in revenue results from increased competition and substitution of services in fixed public communications networks with mobile networks and increased use of broadband services. The decrease in revenue from these services does not mean that users have been using electronic communications services less but that they have been substituting them for other services. Furthermore, telephone services were increasingly provided together with broadband access and television services. Broadband in becoming the prevailing manner of service provision in fixed networks.

Figure 1.10. Total revenue from telephone services in the fixed network (in HRK millions)



Since end users have been continuously substituting fixed telephone services with mobile telephone services, the decrease in revenue from these services is a logical consequence. This trend may be expected in the future as well.

Figure 1.11. Total number of users of telephone services in fixed public communications network[5]

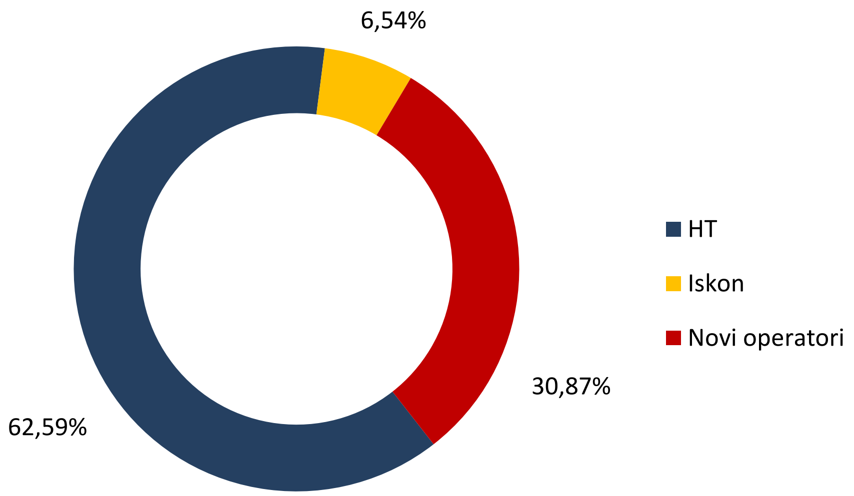


[5] For years before 2011 HAKOM only gathered information on the number of connections (number of B channels) Since one user may have several phone connections, HAKOM has been collecting and presenting the number of users of telephone services in the telephone network since 2011.

Furthermore, although it was stable in the last two years, the number of users of telephone services in the fixed network has been continuously decreasing. The main reason for the decrease in the number of users is substitution by mobile telephone services. It is expected that the number of users in the fixed network will remain stable in the upcoming period. It is to be expected that operators will begin to look at the telephone service less as a profitable service and more as a service to be offered to users as part of a package at small fee or without a fee.

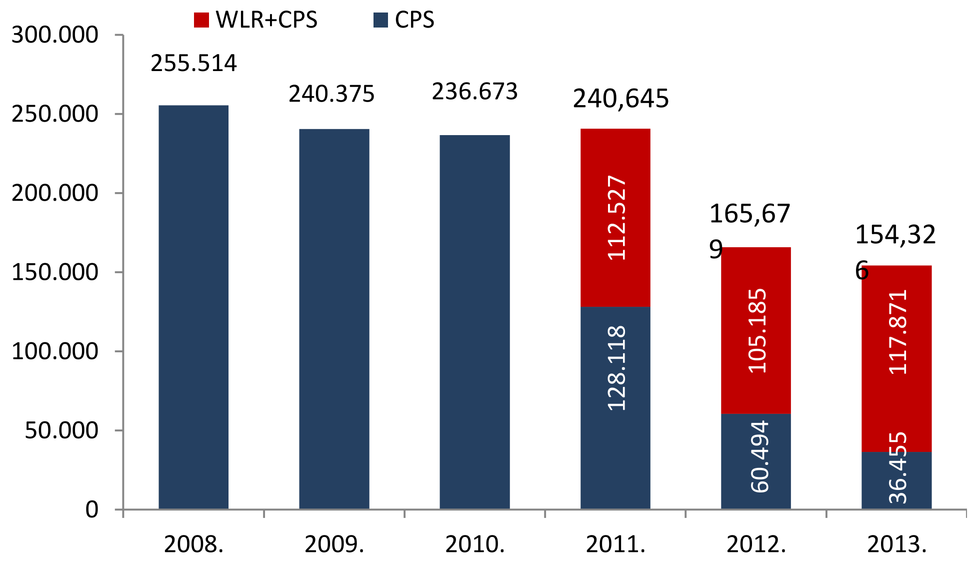
The share of new operators in relation to the number of users and the total revenue on the market of the fixed public network in the Republic of Croatia has been continuously increasing.

Figure 1.12. Market shares of operators according to number of users of telephone services in the fixed network



Due to measures that are undertaken by HAKOM with a view to further developing competition, it is expected that the share of new operators will continue to grow in the years to come.

Figure 1.13. Total number of users of CPS service



Number of users of carrier pre-selection service (CPS) was decreasing in the observed period. New operators were increasingly transferring users to their own infrastructure (clear from the increase of LLU users). The CPS service was further simplified both for providers and for users through the introduction of a wholesale line rental service which has been available in Croatia since 1 July 2011. The user of CPS is provided only one user account in the WRL service. There was a positive growth trend in the number of WLR users compared to 2012, which shows that operators have been transferring more users to a single account. Due to this trend, it is to be expected that almost all users that are using exclusively the publicly available telephone service will start receiving only one bill.

1.1.4 Internet access service

The development of broadband services is of particular importance for the economic development of the Republic of Croatia and it is of key importance for the development of knowledge society in the RoC. Broadband access is one of the basic needs of today's world and broadband access over a mobile network plays a very important role in its development, which is illustrated by a constant rise in the number of users of mobile broadband access.

Figure 1.14. Total revenue from Internet access services (in millions of EUR)

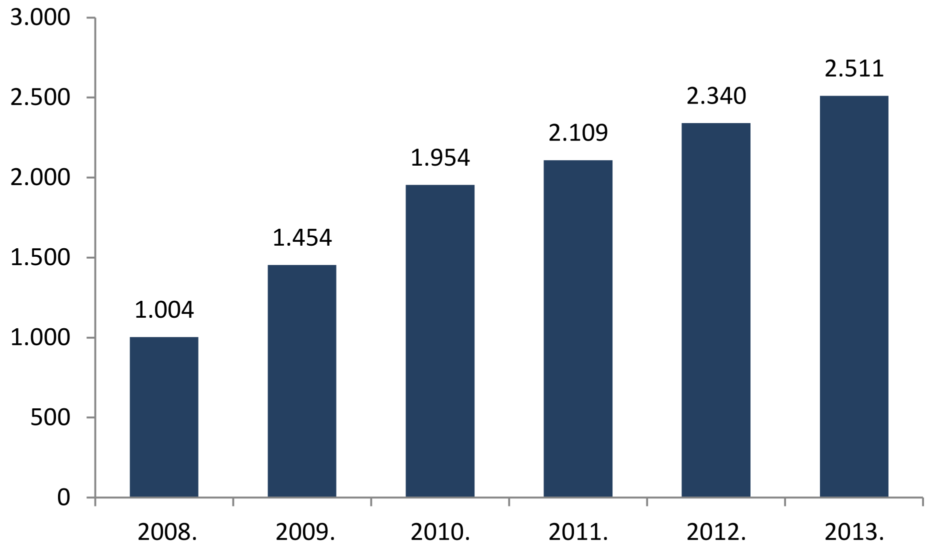
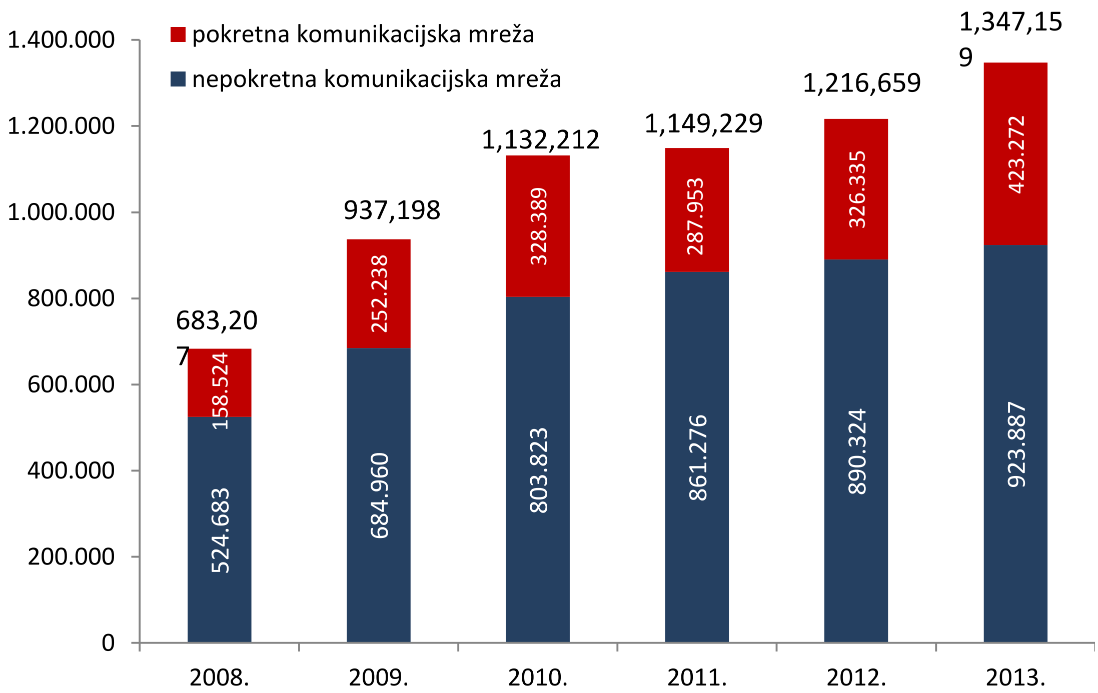


Figure 1.15. Number of broadband connections



According to collected data, the number of mobile broadband connections at the end of 2013 amounted to 923,887, indicating an average broadband penetration rate of 21.56 percent. If mobile broadband connections, the penetration rate of which is 9.88 percent, are added to this number, the total penetration rate of broadband connections in mobile and fixed networks reached 31.44 percent at the end of 2013. Considering the importance of this service for the development of economy in the upcoming years, it is expected that its penetration will increase both in fixed and mobile networks.

Figure 1.16. Broadband Internet penetration

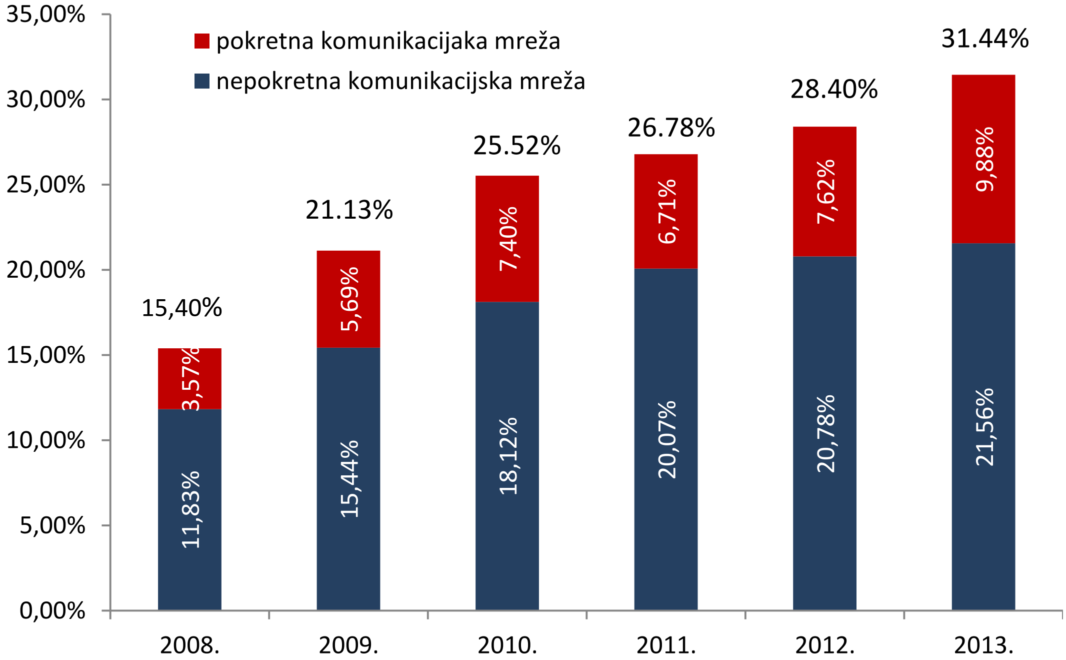
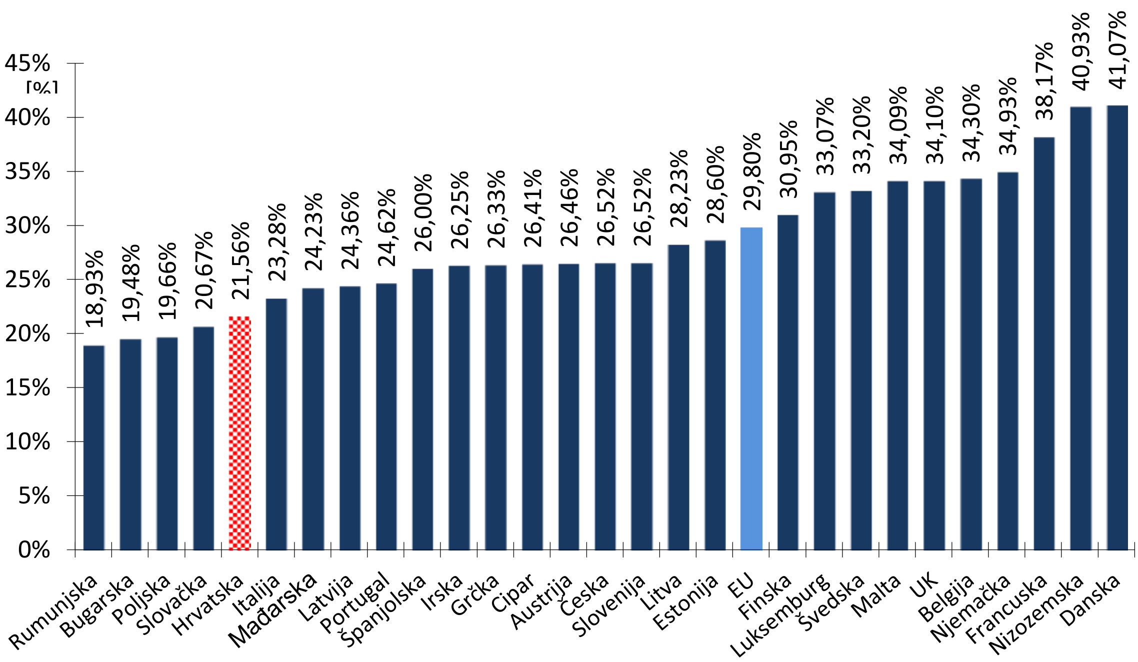
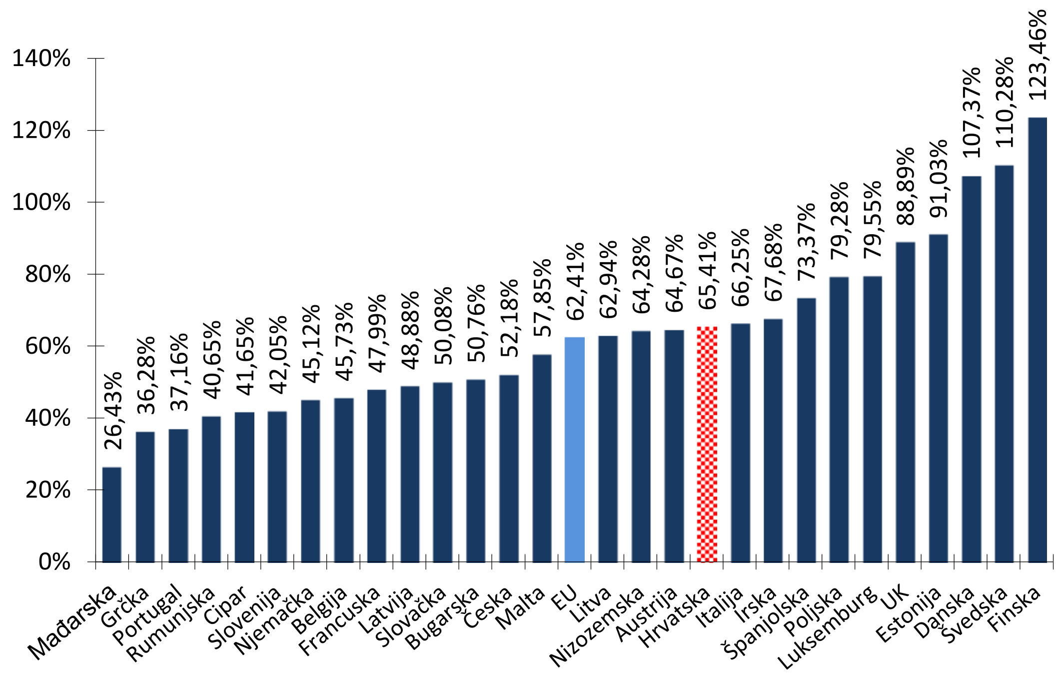


Figure 1.17. Broadband penetration rate over the fixed network in the E[6]U and RoC



[6] Source: *Digital Agenda Scoreboard*

Figure 1.18. Mobile broadband penetration rate (all active users)[7] in the EU[8] and RoC



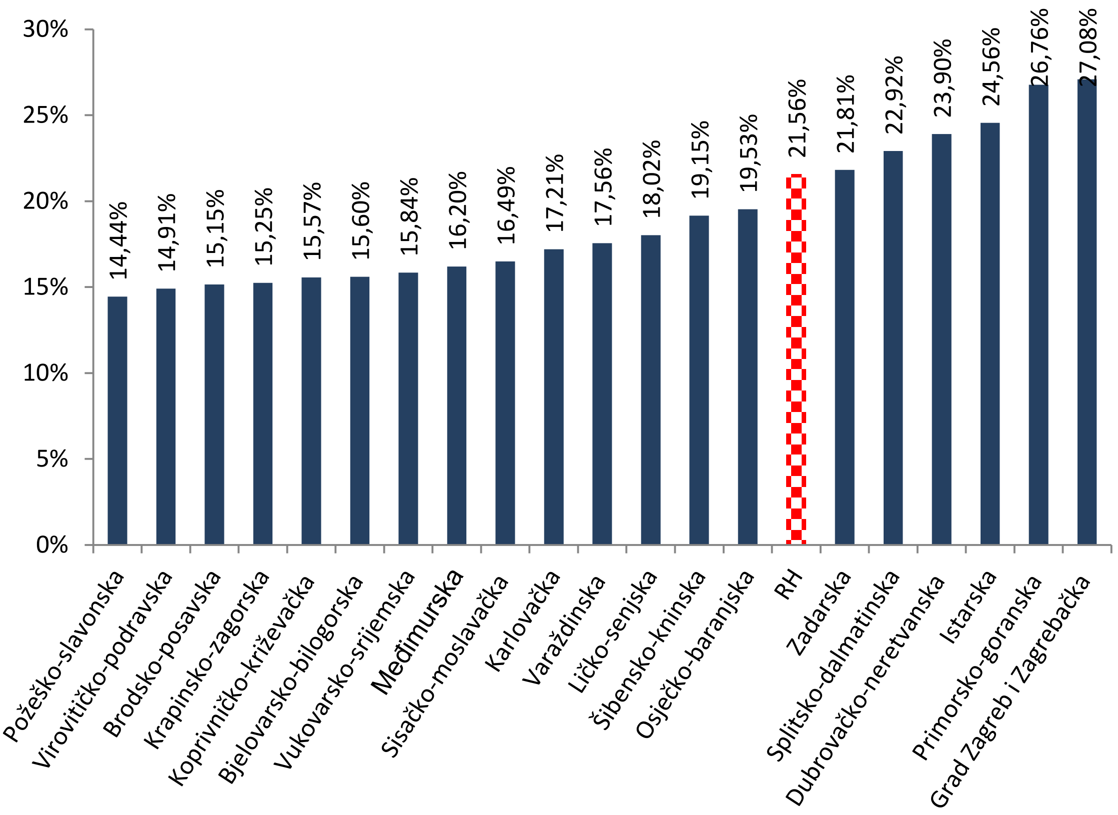
In relation to broadband penetration, Croatia is among less developed European countries. Regardless of the increase in the number of users, current state of play on the market may be regarded as insufficiently developed. However, in addition to differences in broadband penetration between individual countries, there are also differences between individual regions in countries, depending on whether the part of the country is urban or rural. As much as the availability of broadband Internet access is increasing on a regular basis, some regions (rural areas, islands etc.) can hardly expect to have broadband access in the near future. Croatia demonstrates significantly regional unbalance in the number and penetration of broadband connections in the fixed communicatinos network. The biggest penetration was recorded in the City of Zagreb and in the County of Zagreb, while Požeško-Slavonska County has the lowest penetration rate. Furthermore, the County of Zadar has for the first time exceeded the average density of fixed broadband connections in the RoC.

Besides enabling traditional resources and services, it is equally important for the RoC to work on decreasing the digital divide between inhabitants of individual parts of Croatia with a view to strengthening the entire society, in the economic and social sense.

[7] by means of data SIM cards (USB, PC card), mobile phones (various tariffs that include broadband access in addition to voice services), M2M

[8] Source: *Digital Agenda Scoreboard*

Figure 1.19. Fixed broadband penetration rate in the RoC per counties



Bearing in mind the unquestionable link between Internet development and broadband access and overall social development, the improvement in this area is a necessary precondition for further development of Croatia. For that reason, emphasis should be placed on support to internet use and introduction of broadband internet access in less developed regions. In that sense, HAKOM initiated its own aid programme aimed at facilitating the connection of target users, such as schools, healthcare and other public institutions, to broadband internet. More information about the HAKOM's aid programme will be provided in Chapter 8.1.1.

Figure 1.20. Distribution of fixed broadband connections per operators

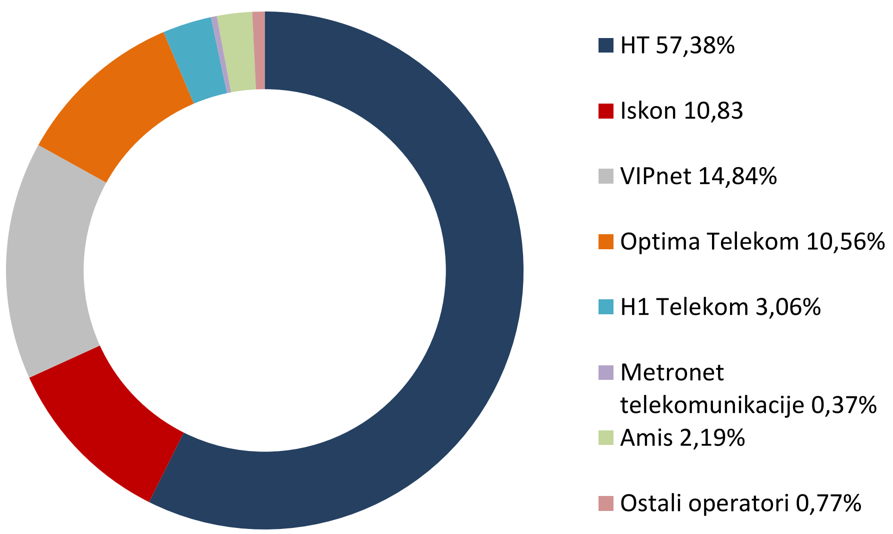
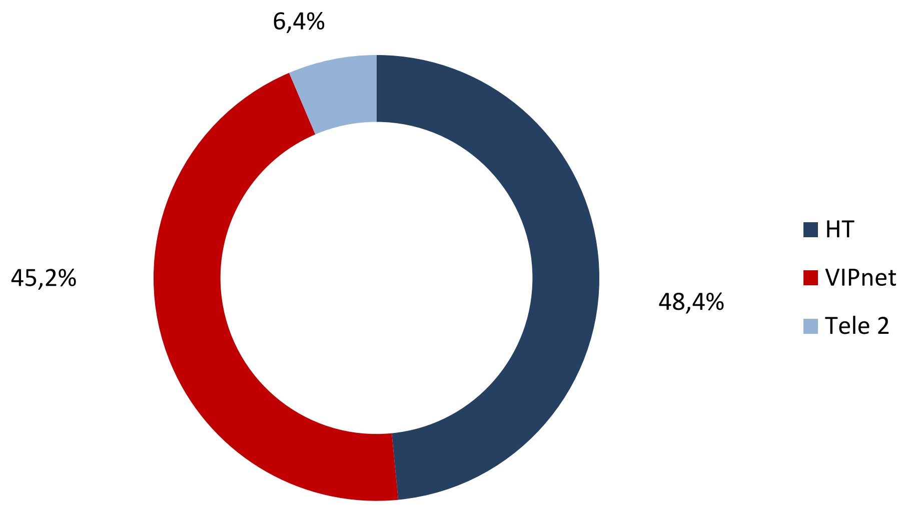
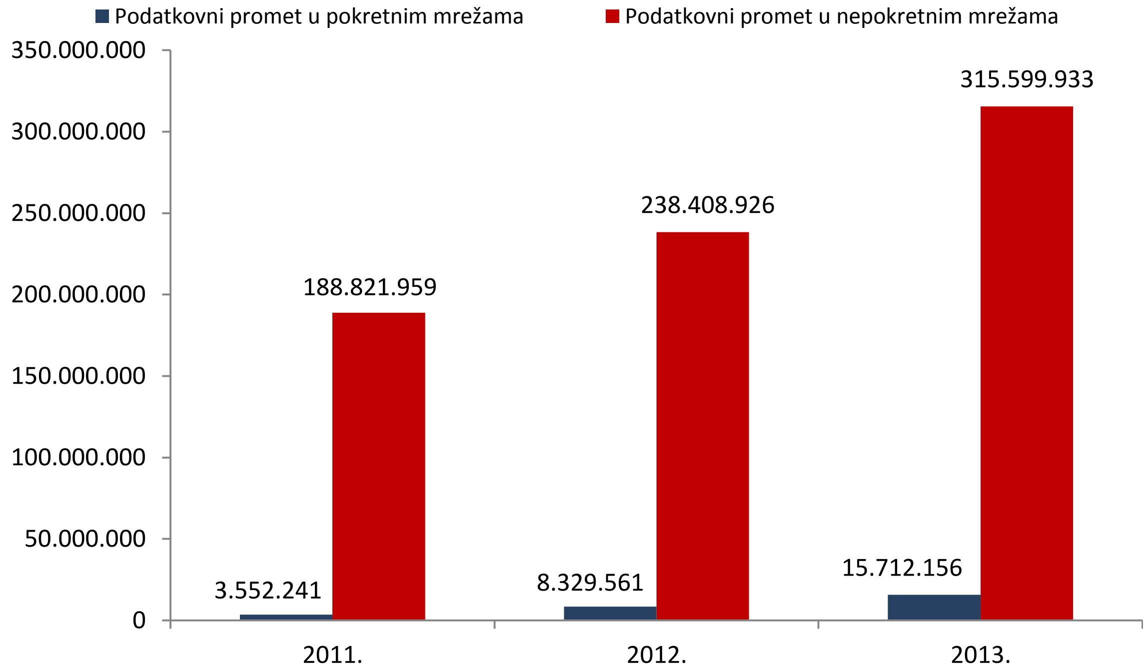


Figure 1.21. Distribution of of mobile broadband connections per operators



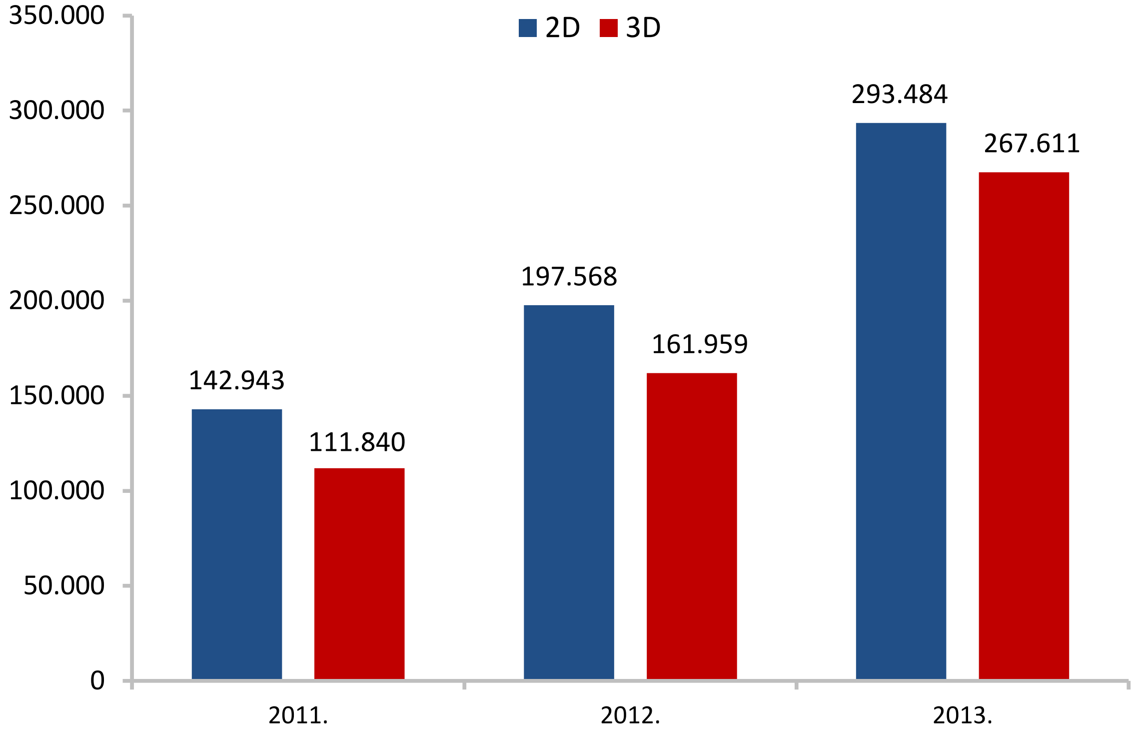
The decreasing trend in relation to traffic in the fixed network compared to the mobile network continued in 2013 accompanied by increased data traffic as a consequence of accelerated development of broadband internet access service.

Figure 1.22. Data traffic (GB)



According to the most recent available data, the total number of users of packages of services increased by 56 percent. Since this is more favourable from the point of view of users, it is to be expected that the number of users of packages and the offer of operators will be increased.

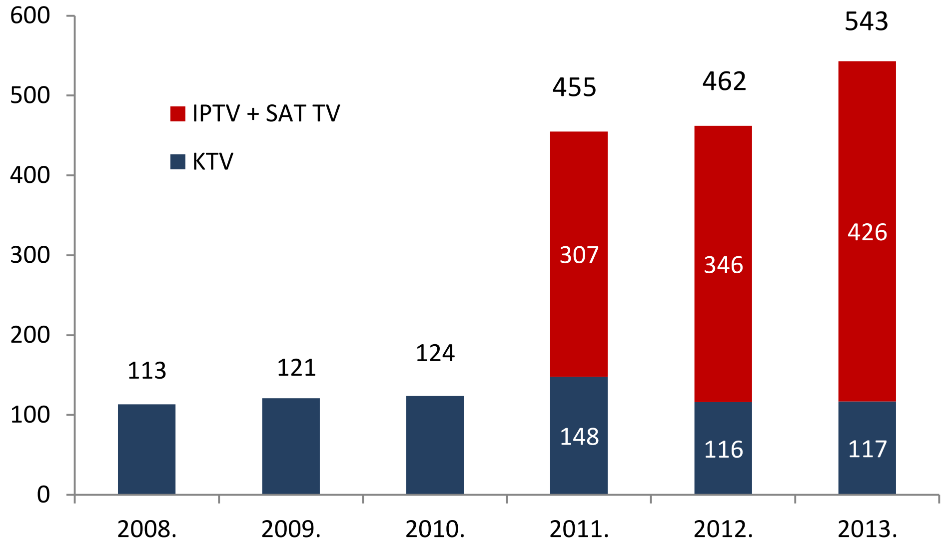
Figure 1.23. Number of users of packages of services



1.1.5 Television services

The increasing trend in relation to revenue from TV services will continue in 2013. According to 2013 data, there was an increase in revenue from the television service for about 17 percent compared to 2012. Before 2011, data were collected only for KTV which is why revenue illustrated in Figure 1.24 for the period between 2008 and 2011 refers only to revenue from KTV.

Figure 1.24. Total revenue from TV service

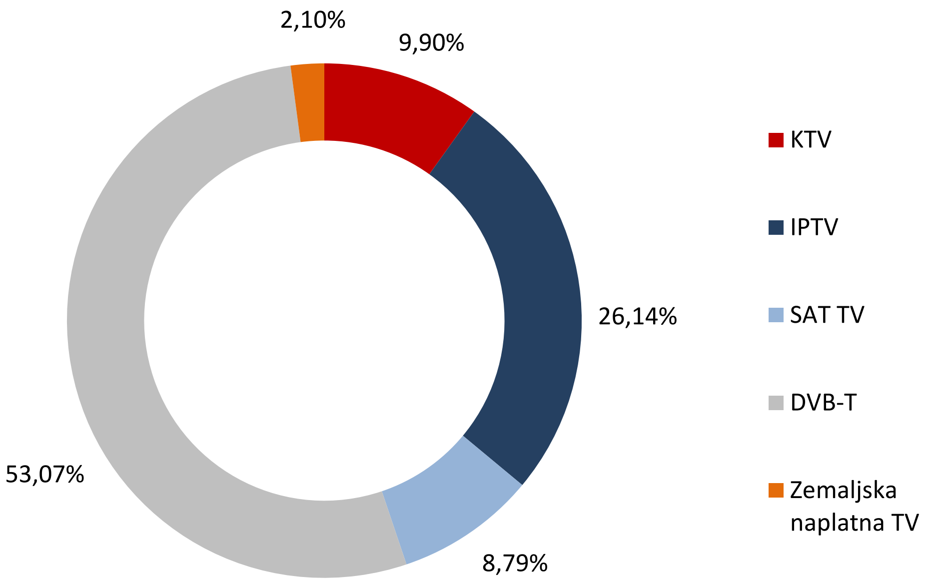


In the segment of IPTV services, which also represent the largest share of services with 390 918 connections, the number of connections increased by 6 percent, compared to the end of 2012. Nevertheless, the most significant individual annual growth was recorded in the segment of SAT TV connections amounting to more than 21 percent. The number of connections reached 131 537. Almost all operators of electronic communications services offering IPTV services also offer SAT TV services in places of insufficient internet bandwidth, which is one of the reasons behind the increase in the number of SAT TV connections. There was also a significant growth of pay-tv service to more than 30 000 connections within a year.

However, the distribution of technologies indicates the largest share of DVB-T: However, the number of households using the television service of one of the cable, IPTV or satellite operators increased compared to the end of 2012. According to data for 2013. out of 1,5 million TV households in Croatia, slightly more than 53 percent use terrestrial transmitters to watch television. This is a large potential of this market. Due to an increasing demand for packages of services it is expected that, in accordance with the existing trends, the number of connections via other technologies will continue to rise in the future.

Digital television made it possible for users of watch more channels and it brought better quality of image and sound. Digital switchover was successfully completed in Croatia in 2010 and digital television networks have been developing and building since then. In spite of efforts and EU recommendations to ensure switchover to digital television by 2012 (hereinafter: hereinafter: DTV) in order to free the RF spectrum and ensure the so-called "digital dividend" for additional TV contents and new information and communication service, not all EU Member States managed to complete the digital switchover process and turn off analogue television. Our neighbouring countries: Hungary, Serbia, Montenegro and Bosnia and Herzegovina are also lagging behind in the digital switchover. This delay prevents further development and implementation of new broadcasting networks and services as well as the introduction of mobile communications in the frequency band of the 790MHz-862MHz digital dividend.

Figure 1.25. Share of households according to technologies used for receiving TV contents

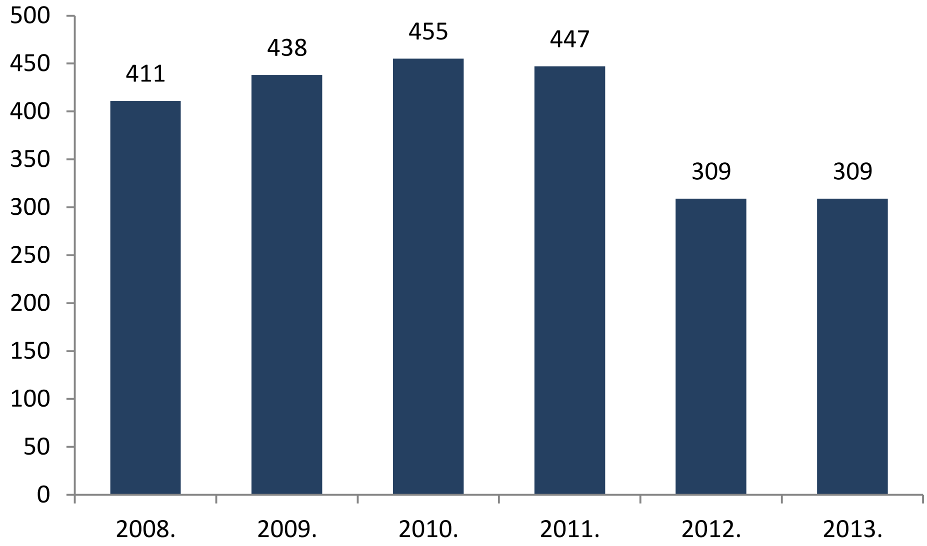


End users expect operators to introduce new television services and HDTV programmes, 3D video content and multichannel sound. HAKOM has been following the development of standards for digital video broadcasting and of standards for video content encoding. Second generation of standards for digital video broadcasting (DVB-T2) ensures an even more efficient use of the RF spectrum and greater broadcasting capacity of multiplexes. On the other hand, encoding standards for MPEG-4 and HEVC (H.264/MPEG-4 AVC) are able to compress video signal several times more efficiently than MPEG-2 standard. Those European countries that started introducing DTV earlier, such as Austria, Finland, Croatia, Italy, Germany, United Kingdom, Sweden and others, decided to use MPEG 2 standard for encoding video contents in addition to the DVB-T standard. Countries that decided to introduce DTV later mostly selected DVB-T broadcasting standard and MPEG 4 encoding standard, while DVB-T2 broadcasting standard and MPEG-4 encoding are mostly used in new multiplexes in Europe that were built during 2013.

1.1.6 Network and line rental

Network and line renting continues to be the smallest market segment on the electronic communications market in terms of total revenue. Thus total revenue at the end of 2013 amounted to HRK 309 million which is 2.56 percent of the total revenue on the electronic communications market.

Figure 1.26. Total revenue from the service of network and line rental



1.1.7 Other services

1.1.7.1 Special tariff services

HAKOM has continued its existing practice of checking of provision of special tariff services, that is, their compliance with the Ordinance on the manner and conditions for the provision of electronic communications networks and services (OG No. 154/11). The degree of protection of users during use of such services has been increased on the basis of verification of regulations in practice. A new Numbering Plan was adopted in 2013 laying down the numbers for the provision of special tariff services by means of short SMS codes. Services were separated depending on the type and transparency of user of special tariff services with short SMS codes was increased. In 2013, HAKOM introduced e-mail address for reporting spam and users were offered the possibility to report promotional activities of special tariff services that are prohibited pursuant to the ECA. Those reports served as a basis for inspection supervision.

1.1.7.2 Universal services

One of the main principles and objectives of regulation of the Electronic communications market in the Republic of Croatia is to ensure access to universal services for all users of services. On 18 April 2013 HAKOM adopted a decision approving HT's prices of MAXnet mini service. MAXnet mini service is a universal internet access service at a minimum speed of 144 kbit/s. From 1 January 2015 HAKOM is obliged to ensure data transfer speed of at least 1 Mbit/s for the above-mentioned service.

Universal services in electronic communications represent a minimum set of electronic communications services of a certain quality, which must be available to all end users at an affordable price in the entire territory of the Republic of Croatia regardless of their geographical location and with the minimum possible distortion of competition. In 2013, there were two operators of universal services in the Republic of Croatia. Imenik d.o.o. is the universal operator of the service of access of end users to at least one comprehensive directory of all subscribers of publicly available telephone services, in a printed or electronic form, which must be updated on a regular basis. HT was designated as the universal operator for the following services:

1. access to public telephone network and publicly available telephone services at a fixed location,
2. access of end-users, including users of public pay telephones, to a telephone directory enquiry service, installation of new public pay phones in public places available at any time;
3. special measures for disabled users including access to emergency services, directory enquiry services and directories, equivalent to that enjoyed by other end-users,
4. special tariff systems adjusted to needs of socially disadvantaged groups of end users of services.

1.1.7.3 New services

M2M

Machine-to-machine communications (M2M) is a new area which is growing at a fast rate, and experts estimate that up to 10 billion devices will be connected by 2020. M2M communication comprises automated communication (data transfer) between two or more communications (ICT) entities. Due to increased demand for data traffic and requirements for enabling wholesale data traffic bundles, HAKOM has been observing the state of M2M services on the market since 2011. If necessary, and for the purpose of development of this market, HAKOM is ready to take steps to avoid the closing of the market, that is, to achieve market dynamics and strengthening of competition between operators. Since it is expected that M2M services will grow exponentially, it is necessary to ensure more numbers for M2M services. For that reason, HAKOM published a new Numbering Plan in January of 2013 ensuring more numbering resources intended exclusively for M2M services.

Increased use of M2M services is accompanied by challenges related to issues of privacy and security of communication of end users. As part of BEREC, HAKOM has been following developments in the EU, actively participating in expert group meetings and is prepared to react where necessary.

Cloud computing

Cloud computing continues to be one of the fastest growing technological solutions in today's information and communication society. In order to keep up with fast changes on the market, HAKOM has been continuously following the development of cloud computing services in the RoC and on the international market.

Croatian market has been keeping up with international trends which is why, in addition to international providers, cloud computing services are offered in Croatia by companies registered in this country. The largest telecommunications operator HT has also started providing cloud computing services and it is to be expected that other telecommunications operators will do the same thing.

Cloud computing market is not regulated at this time because so far no issues have been noticed on the this market. The same situation exists in the rest of the EU. In spite of that, cloud computing market will continue to be under further supervision to enable timely reaction in case of issues with a view to ensuring complete protection of end users and efficient competition.

1.2 Overview of regulatory measures

Croatian electronic communications market has been for the most part liberalized but further regulatory activities are necessary to achieve the desired competitive market comparable to that in the most developed European countries. Although more operators and service providers exist on the Croatian market, there are still operators with significant market power and dominant market position. For that reason, HAKOM's work in 2013 was primarily focused on the achievement of established principles and market regulation objectives with a special emphasis on the definition of wholesale conditions and their amendments in accordance with market interests and further development of competition. HAKOM continued with activities aimed at the definition of relevant markets susceptible to ex ante regulation, in accordance with provisions of the ECA and objectives defined in the 2013 Annual Work Programme. The definition of the relevant market is a basis for conducting market analysis which consists of the definition of the relevant market and assessment of the existence of one or more operators with significant market power on that market and of the imposition of regulatory obligations on operators with significant market power. Also, considering the accession of Croatia to the EU, and in order to ensure that decisions adopted on the national level do not have a negative effect on the EU common market and objectives to be achieved in accordance with the existing regulatory framework, the national regulatory bodies are obliged to submit draft decisions to the EC for approval, in accordance with regulations of the Framework Directive. Therefore, starting from 1 July 2013, HAKOM has implemented activities concerning the notification process for all decisions arising from the market analysis procedure.

Below is an overview of the most important HAKOM's decisions adopted in the previous year on markets susceptible to ex ante regulation with a view to preserving efficient competition.

Table 1.2. Overview of the most important decisions in 2013

Regulatory decisions
Decision on analysis of the market of call termination on an individual mobile public communications network
Decision on analysis of the market of call termination on an individual fixed public communications network
Decision on analysis of the market of call origination on an individual fixed public communications network
Decision on analysis of the market of wholesale network infrastructure access at a fixed location
Decision on analysis of the broadband market
Decision on the definition on weighted average cost of capital for the purpose of fulfilling the regulatory obligation of price control and cost accounting for services in the public fixed and mobile communication network
Final decision on costs of service of call termination on an individual mobile public communications network
Final decision on prices of service of call termination on an individual mobile public communications network
Decision on costs of wholesale services in the public fixed communications network of Hrvatski Telekom d.d.
Decision on costs of interconnection services in the public fixed communications network of Hrvatski Telekom d.d.
Decision on the definition of price of service of unbundled access to the local loop
Decision on amendments to HT's reference offers for the purpose of migration to IMS technology

1.2.1 Decisions in the „second round“ of market analysis procedure

Table 1.3. List of operators with significant market power and imposed regulatory obligations for which decisions were adopted in 2013

Name of relevant market	Operators with significant market power	Regulatory obligations
Market of call termination on an individual mobile public communications network	HT VIPnet Tele2	- obligation of access to and use of specific network facilities; - obligation of non-discrimination - obligation of transparency and the obligation to publish the reference offer - obligation of price control
Market of wholesale network infrastructure access at a fixed location	HT	- obligation of access to and use of specific network facilities; - obligation of non-discrimination - obligation of transparency and the obligation to publish the reference offer - obligation of price control and cost accounting - obligation of accounting-separation
Market of wholesale broadband access	HT	- obligation of access to and use of specific network facilities; - obligation of non-discrimination - obligation of transparency and the obligation to publish the reference offer - obligation of price control and cost accounting - obligation of accounting-separation
Market of call termination on an individual fixed public communications network	Amis Telekom d.o.o., B.Net Hrvatska d.o.o., BT Net d.o.o., H1 Telekom d.d., Hrvatski Telekom d.d., Iskon Internet d.d., Metronet d.o.o., Metronet telekomunikacije d.d., Novi net d.o.o., OT-Optima Telekom d.d., VIPnet d.o.o., Terrakom d.o.o.	- obligation of access to and use of specific network facilities; - obligation of non-discrimination - obligation of transparency and the obligation to publish the reference offer - obligation of price control and cost accounting - obligation of accounting separation (only for HT)
Market of call origination on an individual fixed public communications network	HT	- obligation of access to and use of specific network facilities; - obligation of non-discrimination - obligation of transparency and the obligation to publish the reference offer - obligation of price control and cost accounting - obligation of accounting-separation

1.2.2 Decision on the determination of the weighted average cost of capital (WACC)

Table 1.4. Amount of the weighted average cost of capital (WACC)

WACC	Amount (%)
Mobile network	11.53
Mobile network	11.05
Risk premium for new generation networks	3.63

In March 2013 HAKOM determined the amount of weighted average cost of capital for the purpose of fulfilling the regulatory obligation of price control and cost accounting for services in the public fixed and mobile communication network When the operator invests into assets, it must be able to get the return on the investment of the costs of financing an investment. On one hand, WACC reflects the cost of capital return that shareholders wish to gain from investments, and, on the other hand, it reflects the cost of debt if the investment is financed by the creditors. In regulation, those financial costs are “returned” through the application of the weighted average costs of capital. In a March decision a reasonable rate of return on the invested capital for services in the public fixed communication network amounting to 11.05 percent was imposed with a possibility of increase for an additional risk premium amounting to 3.63 percent for new generation access services. A reasonable rate of return in mobile networks amounts to 11.53 percent.

This decision is related to 2008 HAKOM's decision imposing deadlines and and manner of implementation of accounting separation and cost accounting in compliance with the document "*Instructions for accounting separation and cost accounting".* This decision imposes on HT, as the SMP operator, the contents and manner of collecting accounting data and the manner of preparing regulatory financial statements in order to ensure equal and transparent competition conditions for all participants in the electronic communications market. Due to the link between the two decision, HAKOM defined the obligation to apply a single WACC rate in this procedure as well. The application of a single WACC rate will enable the comparability of unit cost of regulated services in the fixed network between the two models, and the verification of cost-orientation of regulated prices in regulatory financial statements through the expected return margin on the invested capital amounting to the set WACC rate.

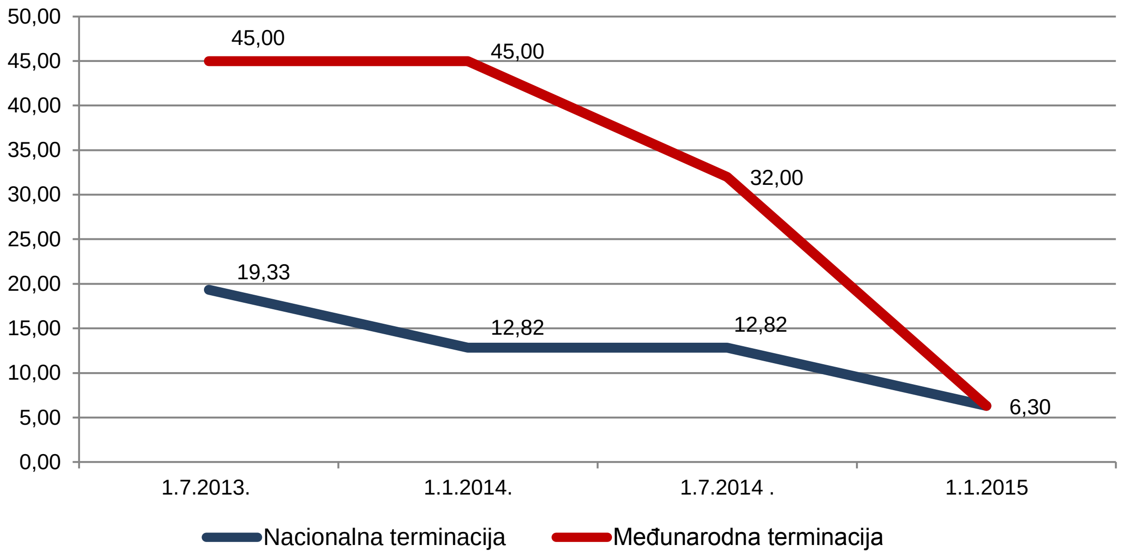
1.2.3 Decision on costs and prices of interconnection in the mobile and fixed network

A cost model development project was completed in 2013, which was the only regulatory aspect still not completely aligned with the existing European practice. Although the benchmark[9] and the retail price minus approaches were useful as a transitional method, the introduction of cost models would, in HAKOM's opinion, represent a final means for the implementation of the cost control obligation. A clear vision for the period of three years in advance contributed to market stability and business planning of market participants which has proven to be of key importance for the development of effective competition. Promoting efficient and sustainable competition and ensuring the greatest benefits for users are three main HAKOM's objectives in the introduction of the measure of a cost-oriented determination of prices.

Until 1 July 2013. operators with significant market power applied interconnection prices in the mobile and fixed networks based on the benchmark method. Starting 1 July 2013, as defined in market analyses, operators are obliged to apply cost-oriented prices arising from real costs of provided services. The issue of determination of regulated prices on the basis of costs is of key importance for operators and HAKOM. They have been defined in special procedures following the analysis of the relevant market.

This resulted in the determination of cost-oriented prices of call termination on an individual mobile public communications network in July 2013. Prices were determined on the basis of a decision on costs from April 2013.

Figure 1.27. Prices of call termination on an individual mobile public communications network



HAKOM defined a deadline of a year and six months as a reasonable deadline for the gradual reduction of prices before the application of prices calculated on the basis of costs of a generic mobile operator on 1 January 2015 as a result of the application of a “bottom-up” cost model with “pure” LRIC approach in accordance with EC's recommendation[10].

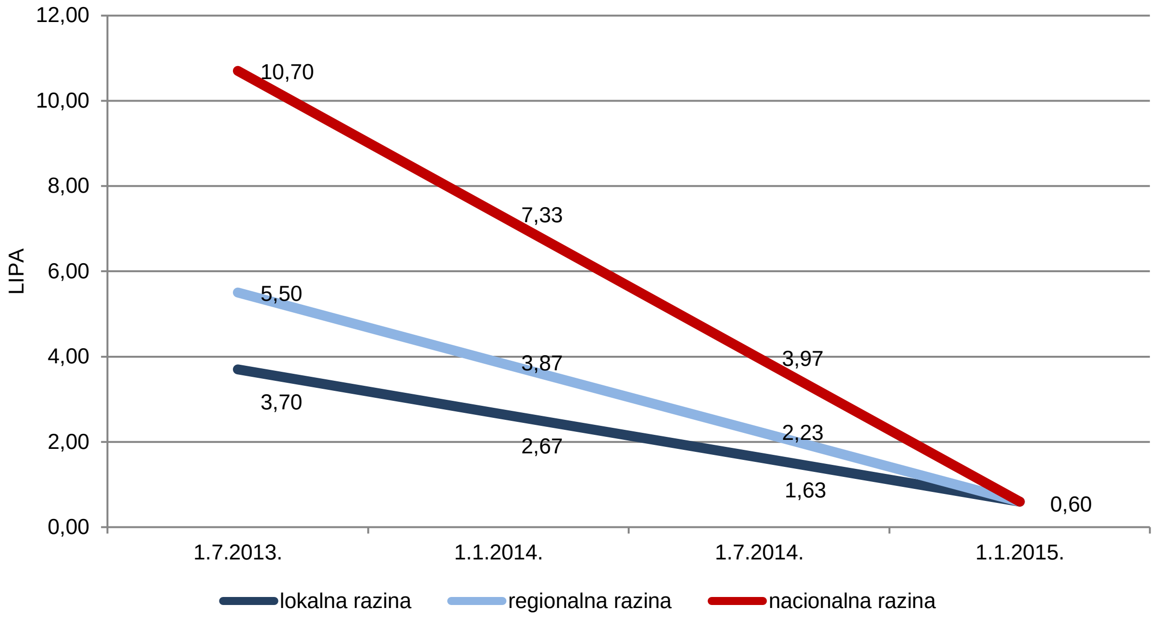
The final decision in process for the definition of interconnection prices in the fixed network was adopted in December 2013. The calculation of the final price incorporated the NGN network infrastructure. With a view to decreasing negative effects on the market that may result from sudden price changes, and since HT has already started the migration process from the PSTN network to next

[9] eng. *benchmark*

[10] Commission Recommendation on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU (2009/396/EC), 20 May 2009

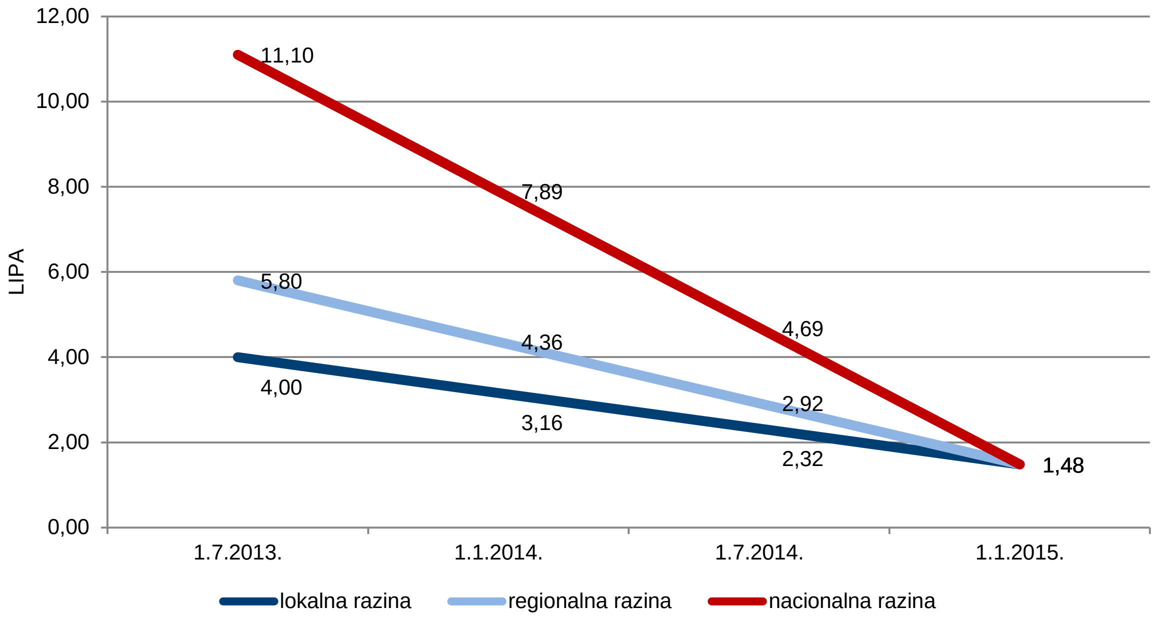
generation networks (NGN), it was determined that prices will be decreased gradually (linearly) every six months until 1 January 2015. In this manner HT will receive remuneration for a part of cost for maintaining PSTN network existing until complete transition of all users to NGN network.

Figure 1.28. Prices of call termination on an individual fixed public communications network



Since the "pure" LRIC approach, which is recommended for the determination of call termination prices, does not enable the operator to cover all costs (common and joint costs) incurred by the provision of the service in question, the mentioned costs, according to EC's recommendation, must be covered from other (related) services provided by the operator at the wholesale or retail level. Since HT was imposed the price control obligation both at the wholesale (call origination and termination) and at the retail level (line rental and publicly available telephone service), HAKOM deemed it appropriate that joint and common costs related to call termination service, which cannot be covered by HAKOM due to the application of the "pure" LRIC approach, be transferred to the call origination service. As a result, the price of call origination service on HT's fixed network amounts to 1.22 lipa/minute. Furthermore, in order to define the appropriate prices during peak and low traffic period, HAKOM determined the prices of call origination on a fixed HT network on the assumption of 65 percent of realized traffic during peak traffic and double prices during peak traffic period compared to low traffic period.

Figure 1.29. Prices of call origination on an individual fixed public communications network



The decision on costs of interconnection services in the public fixed communications network was confirmed by the EC.

1.2.4 Decision on the definition of price of service of unbundled access to the local loop

As a result of the application of the methodology defined in February 2012, HAKOM defined, in November 2013, a monthly fee for the service of full unbundled access to the local loop amounting to HRK 57.30. The fee was determined on the basis of results of a top-down cost model using a LRAIC+ approach (BU LRAIC+) and with the application of the appropriate presumptions. The above-mentioned price enables the operators using the service of full unbundled access to the local loop to cover only costs related to the used service with a view to promoting new investments and innovations in new generation access networks. However, the mentioned monthly fee may not result in margin squeeze at the retail level, that is, the difference between total wholesale and retail costs and HT's retail services may not squeeze other operators out.

The above-mentioned decision on the determination of prices for unbundled access to the local loop was confirmed by the EC.

1.2.5 Decision on amendments to HT's reference offers and migration to IMS technology

Due to migration from PSTN hierarchy to next generation networks hierarchy and migration to IMS technology, which includes the gradual switching off of local exchanges, that is of certain local access points were it will no longer be possible to download/upload interconnection traffic, a pilot project for the definition of wholesale conditions for the switching off of local exchanges was launched in 2012.

Table 1.5. Plan for the switching-off of local exchanges

Migration to IMS hierarchy			
Migration year	2013	2014	2015
Number of local exchanges	11	35	25

The final decision in this procedure was adopted in June 2013. In this procedure, HAKOM defined the preconditions for enabling the migration to this new technology while placing on beneficiary operators the smallest possible burden of migration initiated by the SMP operator in its network which is used by beneficiary operators for the provision of services to their end users.

1.2.6 Decision in the procedure for market analysis of wholesale broadband access market and of market of wholesale physical access to network infrastructure

Since there was no significant investment into fixed access network since the last analysis, in its decisions from June 2013, on the procedure for market analysis of wholesale broadband access market and of market of wholesale physical access to network infrastructure, HAKOM imposed a geographical division of regulatory obligations. The objective of the decision is to encourage investments into areas with less commercial interest for investments into the access network. HAKOM divided Croatia into two areas: type 1 area and type 2 area. Certain rules of regulation apply in the type 1 area, while different kind of regulation applies to the type 2 area.

Figure 1.30. Geographical division of regulatory obligations

FTTX	TYPE 1	TYPE 2
FTTN	**Redirection to a new independent node:** - 5 years after notification, unless there is an agreement - 6 months if there are no operators on the existing node	**Redirection to a new independent node:** - 6 months after notification (BSA at LLU price within 2 years after redirection)
FTTC	**Redirection to a new dependent node is allowed 6 months after notification**	
FTTH	- Market 4 – VULA at OLT level at a reasonable request, with price control - Market 5 - BSA with price control	All obligations except price control – HT may apply commercial wholesale prices for 2 years from the beginning of provision of services an individual ODF area

The Croatian territory was divided with a view to stimulating modernization of the existing access network and investments into fibre next generation access networks in each of the two types of areas. This is a precondition for the achievement of objectives set in the Strategy for Broadband Development in the Republic of Croatia 2012 - 2015. Since the last analysis there have been minimum investments into the network and there were almost no investments by access and beneficiary operators into modernization or building of new networks. For that reason, it is HAKOM's intention to stimulate the modernization of the access network and ensure conditions for return on the invested funds.

1.3 Building, access to and use of electronic communications infrastructure and network

During 2013 special emphasis was placed on monitoring the sharing of existing cable ducts. Activities were focused on gathering data about infrastructure and associated facilities of infrastructure operators, legislation, regulation of unregulated sharing and getting all the documentation on the location of lines.

Table 1.6. Electronic communications infrastructure and network in the RoC

Type of electronic communications infrastructure	quantity
Cable route (km)	21,800
Underground cable route (km)	26,300
Surface electronic communications network route (km)	33,000
Surface electronic communications network poles (km)	210,000

Activities related to building and physical planning were carried out within the prescribed deadlines.

Within the framework of alignment of the existing ordinances with the ECA, the relevant European Parliament directives, HAKOM:

- drafted the Ordinance on amendments to the Ordinance on the manner and conditions for access to sharing of electronic communications infrastructure and associated facilities
- drafted the Ordinance on amendments to the Ordinance on technical requirements for cable ducts
- drafted the Ordinance on the manner and conditions for determining the zone of electronic communications infrastructure and associated facilities, the radio corridor safety zone and obligations of the investor of works or of the building.
- drafted a new proposal for the Ordinance on optical distribution networks subject to approval of the Ministry of Construction and Physical Planning.

1.3.1 Preliminary opinions on physical planning documents

During 2013 special emphasis was placed on the implementation of the Government Regulation on criteria for the development of electronic communications infrastructure and other associated facilities imposing the obligation of new access to physical planning and construction in accordance with the integrated infrastructure building. The principle includes the alignment of the planned paths of electronic communication infrastructure with utilities infrastructure in relation to physical planning and construction deadlines. The sharing of corridors and/or areas with a view to building an integrated infrastructure must be planned in strategic physical planning documents which leads to the disappearing of obstacles for investors investing into the development of mobile or fixed electronic communications network. The development of broadband Internet access in the RoC depends on the existence of development preconditions in physical planning and on the possibility of efficient investments. Combining costs of construction with the application of the principle of integrated infrastructure reduces total costs and provides more quality fulfilment of requirements for the protection of human health, space and environment. HAKOM inspects physical planning documents, verifies the alignment with the provisions of the Regulations and issues a preliminary opinion.

1.3.2 Special building conditions

HAKOM establishes and publishes special conditions in the procedure for the issuing of location permits, decisions on conditions of building and decisions on building for all interventions into space, within the zone of electronic communications infrastructure and in the safety zone and the radio corridor of certain radio stations. HAKOM issues these documents in accordance with special laws on physical planning and construction and on procedures and conditions of construction with a view to promoting investments and it verifies the alignment with provisions of the Electronic Communications Act and regulations adopted pursuant to the law. In the course of 2013, HAKOM issued special conditions and decisions on building conditions in 4 631 case for the construction of various facilities.

Table 1.7. Special building conditions and decisions on building conditions

Year	2011	2012	2013
Number of cases related to special conditions and decisions on building conditions	5891	5667	4731

1.3.3 Quality of broadband access in the RoC

Systematic measuring of transmission parameters in subscriber loop systems of a large number of access networks in the RoC started in 2013, which is a basic precondition for achieving a satisfactory degree of quality of services provided over those subscriber loop systems. The resulting values were compared to values defined in the relevant Reference Offer (Chapter 4 RUO). In order to achieve better quality of service (in particular the IPTV service), some operators implemented the measure of package retransmission at higher network layers. The main focus in the upcoming period should be on the introduction of this measure at the physical layer (DSLAM level) in the first place by SMP operators because that would be more efficient and more effective for all participants on the liberalized market. Analysis of the quality of services on the basis of the results of measuring of transmission parameters from DSLAM platforms continued, particularly from the point of view influence of increased broadband penetration in the basic cable group on the quality of services. Analysis have shown that the introduction of the automatic profile application (APP) contributes to better quality of service. DPBO and UPBO methods for ensuring the quality of service with the FTTCAB concept of expansion of information capacity of the existing access network have been analysed. The first method (DPBO) was included into the new RUO and verified in our real unbundled environment (FTTC pilot project Strmica in Rijeka). Appropriate programme support was developed to enable UPBO regulation which is the basic precondition for mass provision of symmetric services by using VSDL2 technology. The issue of quality of service was mostly focused on the access network segment (more than 80 percent of problems occur in this network segment). However, the introduction of NGN networks will require more detailed analysis of issues of quality of service in the core network.

1.3.4 Measures for preservation of network neutrality

HAKOM pays a lot of attention to network neutrality and follows all issues related to it Moreover, it actively participates in the work of BEREC as part of a working group dealing with this issue. HAKOM's activities in 2013 included cooperation with BEREC and participation in the preparation of BEREC's recommendation for monitoring the minimum quality of service in the context of network neutrality. HAKOM's experts were active members of a working group that prepared the recommendation. No problems with network neutrality were noticed at the national level. HAKOM maintained the strategy of monitoring the situation on the Croatian market and gradual introduction of measures for increased transparency, in the first place by introducing a new tool for measuring Internet access speed - HAKOMetar. HAKOMetar was introduced at the end of 2012 and it was used during 2013 contributing for easier monitoring of the quality of broadband access service provided by operators.

HAKOMetar[11] is available to end users who may use it to test the speed of broadband Internet access and compare it with the speed agreed with the provider of the service. Furthermore, the speed testing results also serve as a basis for complaints to operators in case of speed that is slower than the agreed speed, that is, than the minimum speed the value of which depends on the agreed maximum speed. Statistical data for 2013 show that the tool has justified its purpose because more than 47 thousand of measurements have been carried out of which almost 13 thousand measurements are complete and may be used by the user in his or her complaint against the quality of service.

Table 1.8. Number of measurements of HAKOMeter in four biggest cities

City	Split	Osijek	Rijeka	Zagreb
Number of HAKOMetar	1298	1441	1459	10,267

In accordance with the *Implementation programme of the Strategy for Broadband Development in the Republic of Croatia for 2012-2015* [12], HAKOM established the continuous monitoring of possible difficulties related to network neutrality, such as user complaints concerning blocking or slowing-down of Internet access speed, as a precondition for the undisturbed development of applications and services of information society.

1.3.5 Development of an electronic communications infrastructure database

In the new Act on the National Infrastructure of Physical Data (NIPP), the State Geodetic Administration (DGU) was defined as a National Contact Point for NIPP. The above-mentioned act will contribute to the alignment of the EU *acquis* in the area of establishment of physical data infrastructure. Centralized searching of spatial data under the competence of NIPP subjects will enable simpler browsing and downloading of data. The development of the same or similar set of spatial data will not be financed by several institutions but only one which will share data with other institutions due to the establishment, maintaining and supervision of the work of the NIPP portal.

[11] http://www.hakom.hr/default.aspx?id=1144
[12] http://www.mmpi.hr/UserDocsImages/Strategija-DTV-novo%2010.pdf

An agreement on cooperation between HAKOM and DGU concerning the development of a register of spatial and other data about the existing electronic communications infrastructure including the cadastre of ECI lines in a single platform of a distributed system. The agreement is obviously important for the purpose of correct and detailed regulation of mutual relations and definition of responsibilities in accordance with the Implementation Programme for the Strategy for Broadband Development in the Republic of Croatia for 2014 – 2015. DGU has to prepare an analysis of the existing situation and the technical specification for the project for the development and implementation of the GSI EKI system. In parallel with the above-mentioned activities, DGU must actively work on amendments to the Act on State Surveying and Real Estate Cadastre and amendments to the Ordinance on the Cadastre of Lines. HAKOM will, depending on the agreed modalities, propose amendments to the Electronic Communications Act in the part concerning the authority of the inspector in relation to the ECI layer of the cadastre of lines and it will amend the existing ordinances in which it will describe in detail the mode for filling tubes with cables of beneficiary operators.

1.3.6 Right of way

Pursuant to the Electronic Communications Act and to the Ordinance on the certificate and the fee for the right of way, certificates on the right of way are issued by HAKOM. The Ordinance on the certificate and the fee for the right of way describes in more detail the procedure for the submission of the application for the certificate of the right of way to HAKOM. Fees are determined according to the type of property.

The improvement of the process of the issuing of certificates on the right of way continued in 2013 and a total of 1700 Certificates for the right of way were granted for a total of 114,395.10 m based on applications submitted by infrastructure operators.

Table 1.9. Developments in the number of issued certificates on the right of way

	2010	2011	2012	2013
Number of issued	2654	1254	255	1700
Total length of route (m)	153,394.36	95,548.69	24,008.25	114,395.1

2 MANAGEMENT OF LIMITED RESOURCES

The RF spectrum and the addressing and numbering space are naturally limited resources and their management has been entrusted to HAKOM. Efficient management of these resources enables the introduction of new technologies and services and the development of the economy as a whole.

2.1 Radio Frequency Spectrum Management

Efficient RF spectrum management is one of HAKOM's main tasks. On the territory of the RoC, RF spectrum management refers to the planning and preparation of technical parameters, the granting of licences for use of the RF spectrum and control of the spectrum. In international terms, this refers to the alignment of the use of the RF spectrum in accordance with the valid ITU and CEPT decisions and recommendations and the valid international agreements. Through its activities in the area of RF spectrum management, HAKOM ensures undisturbed functioning of radiocommunications services and protects health of users and other persons.

2.1.1 Efficient use of the radio frequency spectrum

A public consultation on the proposal for amendments to the RF Spectrum Allocation Table was carried out between 28 May and 14 June 2013. Amendments refer in the first place to the alignment with the harmonized European Common Allocation Table - ECA). The Allocation Table includes amendments from the WRC-12 conference and important footnotes from the final acts of the conference. ITU and ECC/ERC decisions and recommendations have also been implemented, where possible and justified. In this manner spectrum was made available to the relevant radiocommunications services and new services. The new Allocation Table was adopted in August 2013 within the framework of a new Ordinance on radio-frequency spectrum allocation which is adopted by MSTI.

In the course of 2013, HAKOM upgraded its internal application with a list of transmitters that shows certain categories of radio stations on a geo-referenced surface. During upgrade, special preparations were made for the publication of a part of data, which is planned for 2014.

In 2013, HAKOM participated in the work of the Commission for amendments to the Ordinance on protection against electromagnetic fields, which is to be completed in 2014. Considering its competence and former experience, measurements and international cooperation, during the work of the Commission HAKOM pointed to a possible influence of certain amendments on the situation on the electronic communications market.

A two-year project entitled “Preparation for evacuation in case of nuclear disaster” within the EU programme “Community Civil Protection Mechanism” was completed in late 2013. The competent authority for the programme was the Office of Emergency Management of the City of Zagreb, and the project was aimed at improving the preparedness of the protection and rescue system, preparing the population for nuclear disasters and strengthening of international cooperation for the protection and rescue at the regional and local level. The participation in the mentioned project enabled HAKOM to gain a better insight into RF spectrum needed for use by emergency services, in particular for broadband transmission of data. HAKOM as therefore continued its activities in the working group FM49 dealing with broadband networks for emergency services (PPDR - *Public Protection and Disaster Relief*) which is tasked with finding harmonized RF spectrum for entire Europe to be used by emergency services.

On the basis of decision 2013/195/EU, concerning the inventory of the spectrum for all member states, HAKOM delivered in October 2013 detailed information about the use of the RF spectrum in the 400 MHz – 6 GHz band.

Fiscalization in cash transactions is a measure aimed at enabling efficient monitoring of cash transactions. HAKOM successfully implemented direct obligations arising from the Ordinance on fiscalization in cash transactions in 2013 and issued certificates of inability to establish an internet connection for the exchange of data with the Ministry of Finance and the Tax Administration. A total of 14 such certificates were issued in 2013.

Digital dividend

The use of LTE in the frequency band for the digital dividend (790-862 MHz) may cause interferences in reception of television channels by the end user. Therefore, and in accordance with obligations arising from licences for use of the digital divided, HAKOM adopted a decision on the procedure for the elimination of interferences on the basis of a previous agreement with mobile operators and network operator of the DVB-T network (OiV). Considering the complexity of the issue and lack of a simple solution in other countries, a decision was adopted describing a procedure to be applied until certain experience is acquired. The acquired knowledge will be incorporated into the appropriate allocation plan thus becoming a permanent solution for the elimination of interferences.

In August 2013 HAKOM invited a public auction for the remaining unallocated spectrum of the digital dividend. Two frequency blocks of 2x5 MHz were offered for the provision of communication services based on LTE technology. The selected type of auction is the so-called “closed-envelope auction” with the main selection criterion being the offered price and the initial price of a block being HRK 105 million.

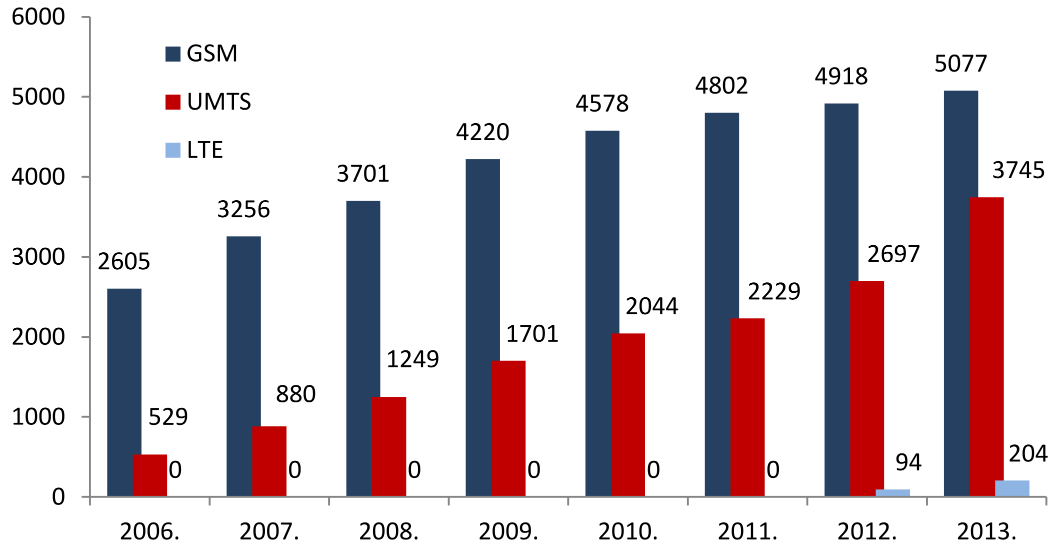
Offers were submitted by VIPnet and HT. The highest price for the fist block was offered by VIPnet (HRK 110,144,999 kuna), while HT offered the highest price for the second (HRK 105,652,000). VIPnet committed in the offer to pay the annual fees, a total of HRK 65 million, while HT decided to pay the fees annual in same annual instalments of HRK 8 million until the expiry of the licence.

In addition to direct benefit for the state budget, HAKOM also expects significant investments into network infrastructure of mobile communications operators and new services since 4G network allows its users to access the Internet at 100Mbt/s. The allocated frequencies, suitable to cover rural areas with lower population density, will enable the operators to plan their networks more efficiently, and the availability of high-speed internet will decrease the “digital divide” between urban and rural centres, which is one of the objectives not only in the EU (“2020 Digital Agenda”) but also as part of the national broadband development programme. It is expected that the increased broadband penetration, which will be enabled by the digital dividend, will have a positive impact on the economy as a whole, in particular in less developed areas.

2.1.2 Public mobile communications networks

During 2013 operators notified their base stations to HAKOM and HAKOM verified the delivered data and issued certificates of compliance for stations that are in compliance with the values of the Ordinance on protection against electromagnetic fields. Special attention in the verification is dedicated to areas of special sensitivity (residential areas, schools, pre-school facilities, hospitals and the similar). Where necessary, HAKOM will carry out additional measuring to verify compliance with regulations. The existing licences for use of the RF spectrum issued to operators of mobile communications are technologically neutral and the appropriate allocation permit a flexible implementation of technologies. Figure 2.1. shows an increase in the number of notified base stations according to technology in the RoC.

Figure 2.1. Number of base stations



2.1.3 Private mobile communications networks

Increased use of digital technology compared to analogue technology continued in 2013, which is obvious from the number of licences granted for private mobile communications networks. However, the capacity of the existing private networks continued to decrease and new users turned to services offered in public mobile networks.

For the purpose of ensuring efficient and economical use of the RF spectrum intended for private mobile communications networks (PMR),HAKOM takes into account other uses at the national and international level.

The harmonization of frequencies at the international level took place in accordance with the signed HCM agreement and requirements of neighbouring signatory countries. After twenty years, the procedure for mutual recognition of registers of frequencies was initiated, in accordance with the HCM agreement, between RoC and the Republic of Slovenia. The registers serve as a basis for the resolution of cases of potential disturbances and a basis for undisturbed operation of all radio stations in this frequency band.

2.1.4 Microwave and satellite networks

Frequency planning and mutual harmonization of microwave links sontinued in 2013 as part of regular HAKOM's activities. The RF spectrum for the purposes of microwave links was allocated on the basis of received applications and pursuant to the principle of efficient use of the RF spectrum. International harmonization of allocated frequencies was carried out in accordance with the HCM agreement or, in case of international microwave links, on the basis of direct agreement between competent administrations.

Figure 2.2. Number of connections per frequency bands

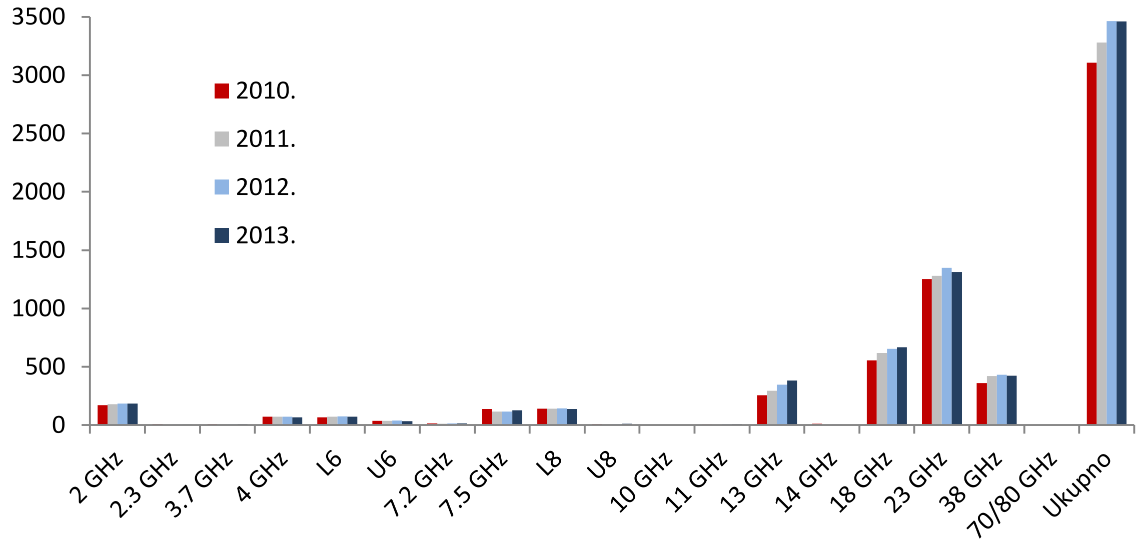


Figure 2.2. provides an overview of the number of microwave links with valid licences throughout the years and per frequency bands There is a noticeable continuous increase of links in the 13 and 18 GHz bands that seem to be the most favourable solution for medium and high-capacity transfer due to the configuration of mobile networks.

HAKOM continued its active participation in the work of the SE19 working group, in particular in discussions concerning technical assessment of the possibility for the introduction of asymmetrical microwave links. The introduction of asymmetrical links has a significant impact on the existing principles of frequency planning and international harmonization and on the fees for use of the RF spectrum. The analysis of the impact of asymmetrical links on the overall use of the RF spectrum, which was conducted by HAKOM, indicated the existence of certain savings in the use of the RF spectrum, but lower than expected. The results of the conducted analysis have been included in the ECC Report 211: *Technical assessment of the possible use of asymmetrical point-to-point links*) and presented at the international gathering ELMAR 2013.

Concerning the satellite networks, requests for the granting of licences of use of the RF spectrum in the satellite services were received and processed, as well as notifications of installation of radio stations in the satellite service operating on the basis of granted general licences, which in the first place refers to SNG transmission. Coordination requests for satellite networks have been analysed and processed within the framework of international activities in accordance with ITU procedures.

As a result of additional possible distribution of channels in September 2013, a new Allocation Plan for the 71-76/81-86 GHz was adopted following a public consultation.

HAKOM kept and regularly maintained a list of notified installed radio stations for fixed and satellite systems operating on the basis of granted general licences.

2.1.5 Radio networks

With the planning and optimization of networks of radio stations, work on ensuring frequencies for new concessions and improvement of coverage of the existing broadcasters continued in 2013.

In spite of a significant trend of disappearances of radio stations and a decrease in the number of broadcasters compared to 2012, the interest for the launching of new radio stations for all concession levels is still there. Since international coordination is one of the key factors for ensuring new free frequencies, HAKOM organized two bilateral coordination meetings (with Bosnia and Herzegovina and Hungary) and participated in another bilateral (Hungary) and one multilateral coordination meetings (Hungary, Austria, Slovenia.). These meetings lead to the introduction of technical requirements for 9 new FM radio stations, primarily at the city and local level.

Data on free frequencies for new networks have been published in the database for the RF spectrum for radio which is publicly available at HAKOM's website. In addition to these data, the database was regularly updated in 2013 with data based on international coordination, planning and optimization, as well as coordination with AEM.

As part of its regular cooperation with AEM, HAKOM replied to questions on the existence of conditions for the offering of concessions in individual areas and delivered notifications about amendments of technical parameters of existing broadcasters. As a precondition for the signature of the concession agreement, HAKOM carried out technical evaluations of fulfilment of minimum conditions for the carrying out of media activities.

In addition to the above-mentioned coordination meetings, international cooperation continued through the coordination fo radio frequencies by means of correspondence in accordance with international agreements. Croatian coordination requests were prepared and submitted and received requests from neighbouring countries were analysed (Austria, Bosna and Herzegovina, Montenegro, Italy, Hungary, Slovenia and Serbia).

Furthermore, within the framework of cooperation with ITU, FM/T-DAB radio stations published in the BRIFIC (*Radiocommunication Bureau International Frequency Information Circular*) notification were analysed on a regular basis. Registration of coordinated FM radio stations into the international frequency plan GE84 was notified, as well as the notification into the main international register of radio frequencies (Master International Frequency Register). MIFR contains a list of internationally coordinated radio frequencies that are currently being prepared and the publication in this register will ensure the highest level of rights under an international agreement. This primarily refers to the protection from interferences and publication in MIFR is of extreme importance for ensuring the operation of radio frequencies at the international level.

2.1.6 Television networks

The Republic of Croatia has a total of 6 networks of terrestrial digital television. Four distribution networks transmit DVB-T signals of the MUX A, B and D multiplex and MPEG 2 for encoding, and this signal may be received in public as well. Two distribution networks transmit the DVB-T2 signals of the MUX C and E multiplexes that have been encoded in the MPEG-4 standard. The pay TV programmes of the EVO TV platform are broadcasted within the MUX C and E.

The building of the MUX C and E networks continued in 2013 with the introduction of new transmitters in order to increase the availability of the signal at 85 of coverage of Croatian population.

HAKOM issued the necessary parameters and certificates of compliance of the radio station for all transmitters put into operation.

In 2013 HAKOM continued with the replanning of DTV networks in the 470-790 MHz frequency band with a view to supplementing for the planed coverage that is lost in the 790-862 MHz band. Replanning is related to the RF spectrum freeing in the 790-862 MHz band, that is, to the digital dividend, and the termination of use of the frequency band in question for DTV. International harmonization of Croatian DVB-T stations with neighbouring countries has continued and the coordination requests from administrations of Austria, Bosnia and Herzegovina, Hungary, Montenegro, Slovenia, Italy, the Czech Republic and Slovakia were analysed.

With a view to achieving harmonization with the new Allocation Table of the RF spectrum and enabling the issuing of licences for digital television at additional levels of the band, an Allocation

Plan was adopted in November 2013., following a public consultation, for the terrestrial broadcasting services in the following band 148,5 kHz – 1492,0 MHz.

The database of the RF spectrum for TV was updated on the basis of the results of the planning and optimization of FM networks and international coordination of frequencies.

International project entitled "Digital Television in South Eastern Europe - SEE Digi.TV", which was initiated in 2011, finished in 2013. The project was planned for the purpose of coordination of activities in the region of South Eastern Europe in relation to the introduction of DTV services and reduction of the digital divide between the countries of the region and in relation to EU Member States. This topic is discussed in more detail in Chapter 8.5.1. EU funds.

2.1.7 Control and supervision of the spectrum

With a view achieving the alignment of the use of radio frequencies at the national and international level, and renewal of control of the RF spectrum, measuring, testing, establishing and removing causes of interferences as well as other technical tasks within the framework of efficient management of the RF spectrum, HAKOM has developed a control and measuring system in the territory of the RoC.

Considering the geographical position and layout of Croatia, the four control and measuring centres established in HAKOM headquarters in Zagreb, and a stations in Osijek, Rijeka and Split, represent an optimum basis for HAKOM's control and measuring system for everyday efficient control of the RF spectrum and the carrying out of other technical activities.

CMS are supplemented by nine remotely controlled control and measuring stations. The most recently built CMS is a portable control and measuring station (hereinafter: PCMS) the building and equipment of which started in 2012, and it was successfully installed and put into operation during 2013 in Istria aimed at conducting everyday measuring and monitoring of interferences from Italy.

As a supplement to the CMC and CMS system, HAKOM also uses five measuring vehicles equipped with measuring equipment for everyday tasks of control of the RF spectrum and other technical tasks.

A large part of tasks concerning RF spectrum control during 2013 referred to measuring the interference from Italy that have been interfering with the reception of radio and television programmes in the coastal area of Croatia, from Savudria in the north of Istria to Prevlaka in the South.

In addition to this measuring, systematic measuring was also carried out aimed at protecting the RF spectrum as a naturally limited resource of interest for the RoC. Everyday measuring was carried out from all four control and measuring centres and nine remotely controlled control and measuring stations, including PCMS, while the measuring vehicles carried out periodic measurements in areas where the immobile part of the measuring system does not provide satisfactory control.

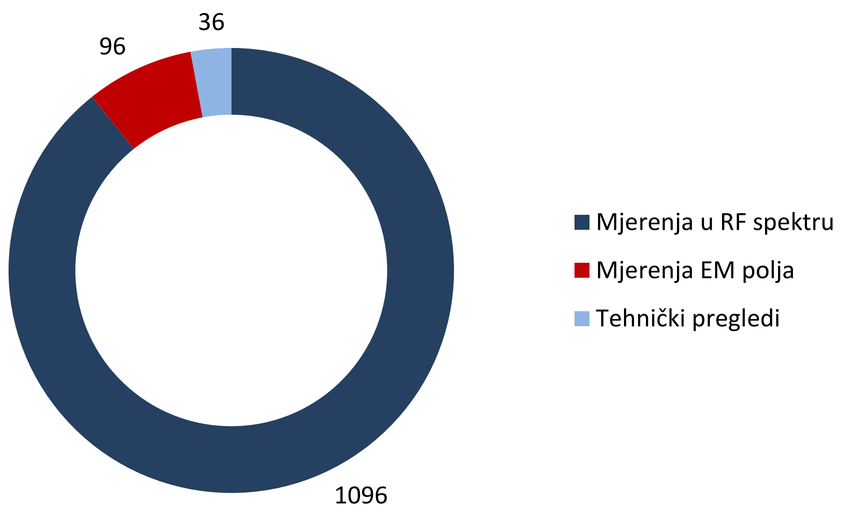
In addition to measurements aimed at protection or monitoring the RF spectrum, measurements for frequency planning and international coordination were also carried out.

All planned measuring campaigns and other measurements in the RF spectrum were successfully carried out in accordance with the 2013 measuring plan, with a special emphasis on the protection against interference. The operation of radio stations in microwave links and radio stations in broadcasting was tested in accordance with the prescribed licences. Figure 2.3 shows the distribution of measuring not covered by everyday and periodic measuring.

In general, the results of the conducted measuring indicate further increase in the number of interferences from internationally uncoordinated radio and television transmitters from the Italian

Republic. The number of interferences from other neighbouring countries was in compliance with previous years and it was accompanied by appropriate cooperation on their removal.

Figure 2.3. Measuring



Due to non-compliance with laws and subordinate legislation on conditions and manner of use of the RF spectrum, three inspection supervision procedures were initiated resulting in the prohibition of operation of illegal radio stations and in ordering them to comply with the law.

Measuring of electromagnetic fields

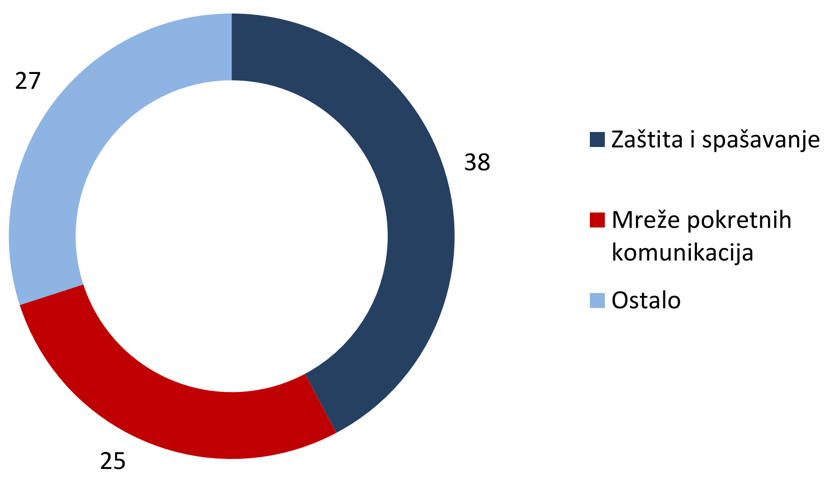
The RF spectrum control also included the measuring of size of electromagnetic fields in areas of increased sensitivity for the purpose of efficient protection of human health from the influence of the electromagnetic field. Measuring results submitted by legal persons authorized for the activities of measuring electromagnetic radiation were checked on a regular basis. For that purpose, measuring was carried out in 96 locations in 2013 and the established levels of electromagnetic fields were significantly lower than the prescribed levels. All the measuring results are published and are available at HAKOM's website[13].

Interferences

Protection from interferences in radio communications is one of HAKOM's important tasks ensuring undisturbed performance of electronic communications systems and the provision of services in the territory of the RoC. Special attention is given to state administration bodies in charge of search and rescue, emergency services, maritime and air traffic control radio communications which are important for the safety of human lives and protection of property and operators of electronic communications.

[13] http://www.hakom.hr/default.aspx?id=1119

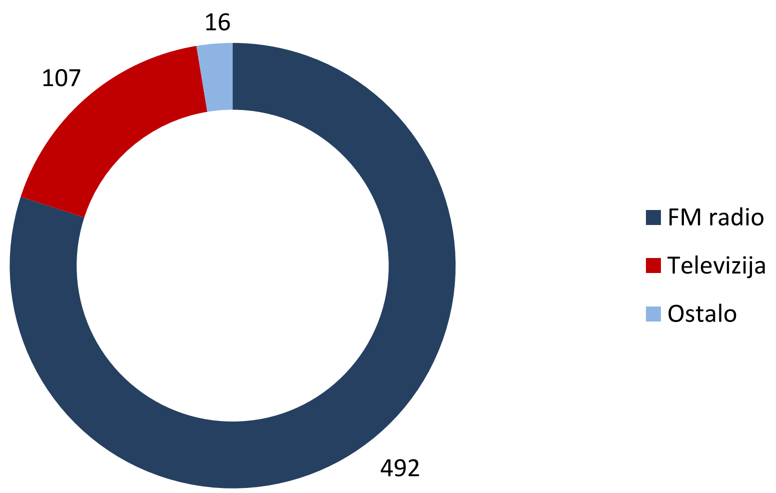
Figure 2.4. Domestic interference



The number reported and eliminated domestic interferences remained unchanged in 2013 compared to 2012. A slight decrease in interferences was recorded in mobile communications networks , while other frequency bands recorded a slight growth.

In addition to domestic interferences, during 2013 HAKOM also worked on the detection and identification of domestic interferences through everyday control and monitoring of the RF spectrum in Croatia and it initiated procedures for their elimination in accordance with international regulations. Figure 2.5. shows a total number of recorded foreign interferences, which is sightly lower compared to 2012.

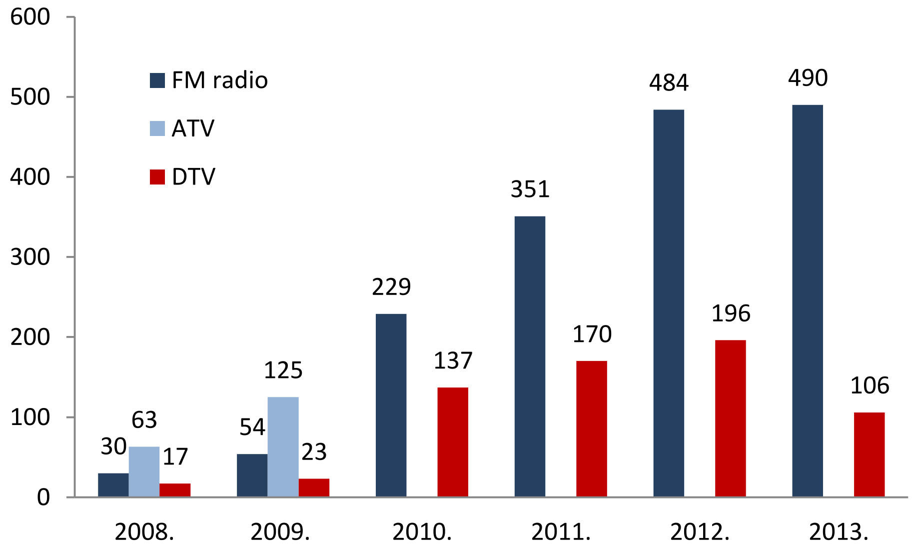
Figure 2.5. Foreign interference



A regular signal measuring campaign for FM radio and TV is envisaged in summer months in the coastal area in order to get a clear picture of the situation and existence of interference at frequencies allocated to Croatia in accordance with international agreements and plans (GE84 i GE06). Measuring conducted during this year has shown that a significant amount of interference originates from the Italian Republic and in summer months prevents quality reception of radio and television channels in majority of Istria and along the coast.

The number of reports of interferences submitted to the Italian Government during 2013 and the comparison with the previous years are illustrated in Figure 2.6. The figures shows slightly more interference reports for FM radio, and less reports for DTV. Less reports for DTV result from the award of the digital dividend (790-860 MHz) to mobile communications networks in Italy and the abandonment of that part of the spectrum by television, as well as the overall digital switch-over in Italy during 2012. However, the level and number of interferences from DTV transmitters operating on the same channel network (at the same TV channel with the same identification mark) has increased.

Figure 2.6. Interferences from Italy



Interferences from Italy with radio and television reception in Croatia

Although the problem of interference from Italy with radio and television reception along the Adriatic coast of Croatia has existed for several decades, further deterioration of the quality of reception of digital television started in the coastal part of Istria in December 2010 with the start of the digital switchover. With further digitalization in Italy until the end of 2012, interferences spread to other parts of the Adriatic coast of Croatia up to Prevlaka.

FM radio interferences from Italy have also increased after year and every year, the level and number of interferences culminate in summer months when it is practically impossible to listen to Croatian FM radio stations in the coastal area.

During all these years, including in 2013, HAKOM invested significant efforts into elimination of the existing interferences with TV channels in the coastal area and into avoidance of further interferences in the Italian Republic.

In 2013, HAKOM conducted extensive measuring in the coastal area and on the islands aimed at monitoring and identifying interference from Italy. Interference identified during measuring resulted in 596 international interference reports submitted to state administration bodies of the Italian Republic and notification of ITU, who is responsible for the implementation of international agreements in the electronic communications sector.

HAKOM also continued with the practice of regular reporting on the status of interferences and requested assistance in the resolution of this issue from competent ITU bodies, the Radio Regulations Board (RBB), the Director of the Radiocommunications Bureau (RB).

The competent ministries, MSTI and MFAEI, were notified of all activities and assisted in the organization of a bilateral meeting between representatives of Croatia and Italian diplomacy and representatives of HAKOM and competent Italian institutions, the Ministry of Regional Development and the Italian Regulatory Agency AGCOM, where the Italian side, for yet another time, undertook the obligations and provided concrete deadlines for the removal of the existing interferences. However, the Italian Republic has not eliminated any of the interferences reported in 2013.

In 2013., the competent institutions in the Italian Republic continued allocating to Italian operators the FM radio and DTV frequencies, which, according to international plans, belong to the RoC. In this manner they showed further ignoring and arbitrariness in the RF spectrum management contrary to undertaken international obligations thus violating Croatian rights to the RF spectrum as a naturally limited resource of interest for the RoC.

2.1.8 R&TT equipment

In 2013, HAKOM actively participated in the drafting of a new Directive of the European Council and the Parliament on radio equipment. Amendments to the R&TTE Directive (Directive 1999/5/EC) aimed at improving the level of alignment with requirements in the Directive, increasing the confidence of market participants in the regulatory framework and providing a clearer and simpler text of the Directive. This also includes some changes in application for the purpose of facilitating application and eliminating unnecessary burden both for commercial participants and for public authorities.

More significant amendments to the aligned proposal of the new Directive include changes in its scope thus excluding terminal equipment in the fixed network from its scope and in the setting of rules aimed at ensuring compliance with the growing number and new types of radio devices. The new requirement for interoperability of battery chargers, in particular for mobile phones, may represent an important requirement for the new equipment. This will result in the simplification of the use of devices and the decrease in the amount of the necessary waste and costs. The new Directive will ensure additional funds to market supervision bodies (HAKOM for R&TTE) for monitoring and control of products which are not compliant with essential requirements. Funds will be ensured through categories of equipment that will have to be registered in the EC database before placing it on the market.

Croatia supported the adoption of this Directive because of the simplification of the process which will have a positive impact on investments and development of the economy in general. The new Radio Equipment Directive was successfully harmonized and it will have to be transposed after adoption.

In 2013, electronic communications inspectors carried out 52 inspections of R&TT equipment that was placed on that market. Furthermore, 1 decision on the removal of R&TT equipment was adopted due to non-compliance and a motion was filed because of the possession of devices for interfering with public communications networks without the prescribed license.

Electronic communications inspectors introduced and started market control procedures in cooperation with the State Inspector's Office on the basis of reports from the RAPEX system, The ICSMS system was successfully implemented and it became obligatory after the accession of the Republic of Croatia to the EU.

Furthermore, inspectors conducted joint inspections in 2012 in cooperation with other inspection bodies in the RoC as part of the Commission for coordination and Communication between inspections competent for supervising products placed on the market and/or at disposal on the market in the Republic of Croatia.

2.2 Management of the addressing and numbering space

One of HAKOM's tasks is to ensure efficient use of addresses and numbers and to manage the addressing and numbering space in the RoC. HAKOM is therefore carrying out the following activities:

- regular verification and, where necessary, amendments to the Addressing and Numbering Plans;
- control of the use of addresses and numbers,
- assignment of addresses and numbers to operators on the basis of the Addressing Plan and the Numbering Plan,
- supervises the number portability procedure,
- monitors the work of the Central Administrative Database of Ported Numbers (CADPN) and takes into account the necessary changes to ensure its proper functioning.

2.2.1 Addressing and numbering space

Only transparent, objective, proportionate and unbiased allocation of addresses and numbers to operators at any time fosters fair competition on the market of electronic communications.

The numbering plan (which entered into force in February 2013) further regulated the availability short codes for SMS/MMS to all operators, instead of to individual operators, which created problems to the work of operators of special tariff services. The allocation of short codes for SMS/MMS services started on 1 September 2013. Furthermore, the number for the universal access number was changed since the existing number 62 was unclear to users because it was within the 6x range with is dedicated to special tariff services in all other cases. The new number is 72.

Accelerated diversification of services on the EC market results in the increased demand for resources in the addressing and numbering space. This requires continuous training of employees in the department to be able to keep up to date with international trends in the introduction of new technologies on the EC market and with the application of new IT aids for the management of the addressing and numbering space.

As part of the project “Allocation of Numbers for Socially-Useful Services in the Republic of Croatia” , HAKOM allocated 116 numbers to associations dealing with the protection of children. For more information about the allocation of 116 numbers, see Chapter 4.3. Protection of children.

In order to achieve the objective of "same number - same service" throughout the EU, on 15 February 2007 the European Commission adopted a Decision on reserving the national numbering range beginning with "116" for harmonized short codes for services of social value (2007/116/EC). According to this decision, services of social value very important for visitors from other countries. The mentioned decision clarifies the meaning and importance of services of social value.

The harmonization of numbering resources is necessary so that services provided in different Member States may be available to end users by using the same number. The combination "same number - same service" will ensure that a certain service is always linked to a certain number in the EU, regardless of in which Member State the service is provided. This will provide a service with pan-European identity to the benefit of the European citizen who will know that by dialling the same number in different Member States they can get the same service. This measure will encourage the development of pan-European services.

2.2.2 Number portability

In order to remove barriers to entry of new participants in the market, HAKOM timely introduced the number portability service (2005). Currently, HAKOM must ensure timely upgrading, introduction of new functionalities and regular maintenance of a central database of ported numbers in order to achieve more competition and more attractive services for end user, which must be accompanied by the appropriate number portability procedure. In other words, more quality administrative and technical procedure of the number portability service is an important factor for end-user satisfaction.

Figure 2.7. Number of ported numbers in the mobile network

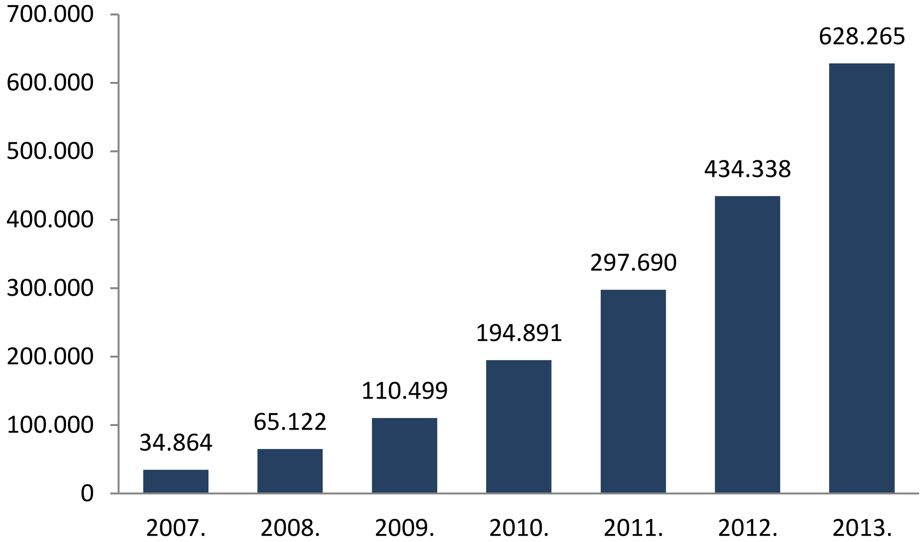
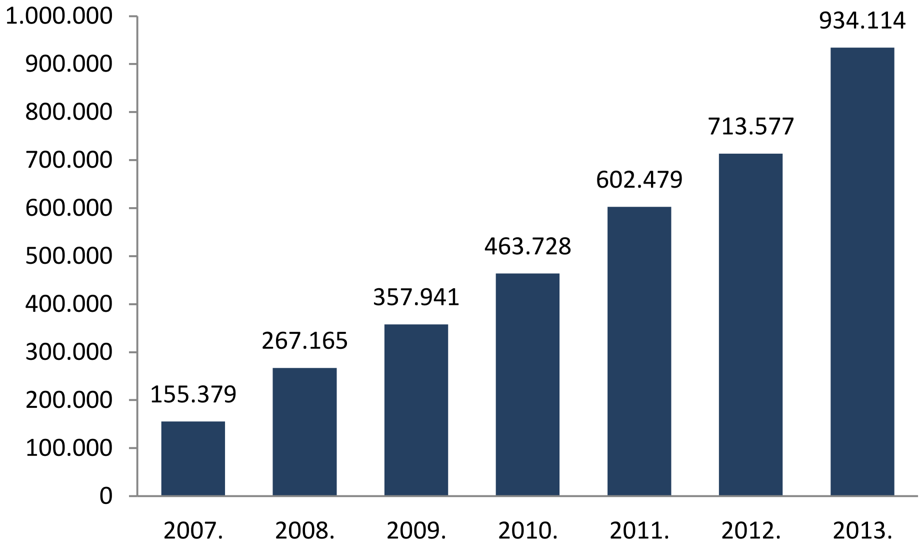


Figure 2.8. Number of ported numbers in the fixed network



e-Portability, the application on HAKOM's portal which is most used and it is used by users to follow the status of number porting and receive information about the current network, all in real time, all synchronized with the central number potability database.

3 THE POSTAL SERVICES MARKET

The postal services market and postal services preserved their important role in society both in economic and social development regardless of significant changes on the communications market and traditional postal services adjusted to new trends.

3.1 Overview of the postal services market

Following the example set by EU Member States, the Republic of Croatia formally liberalized the postal services market on 1 January 2013 and, with the accession of Croatia into the EU on 1 July 2013, the postal services market became a part of the EU common market. Gradual liberalization of the postal services market was regulated by the Postal Services Act (hereinafter: PSA)[14] which was adopted in late 2012 and entered into force in 2013. Market liberalization is expected lead to market development and growth as a result of entry of new providers and of the introduction of new and more innovative postal services. However, due to unfavourable economic situation in the Republic of Croatia and in its neighbourhood, negative trends have occurred in almost all economic branches, which naturally influenced the market of postal services, which is directly related to economic development. Furthermore, increasing substitution of postal services with electronic communications services had a negative impact on the postal services market. In accordance with that, the majority of indicators of the situation on the postal services market in 2013 are worse than the year before, that is, a negative trend that started in 2010, continued in 2013, although it was slowed down by liberalization. A positive impact of market liberalization, in addition to the appearance of new entrants on the market, includes a greater selection of services and lower prices of some segments of services, as well as the growth trend in the number of packages and high-value services. There was also a parallel decrease of traditional postal services marking an already existing trend in developed countries.

3.1.1 Providers on the postal services market

The entry into force of the new PSA required changes and adjustments of all participants to new conditions of a fully liberalized market and service providers. In those circumstances, there were a total of 23 providers of postal services on the postal services market of the Republic of Croatia at the end of 2013, which is two more compared to the end of 2012. Although it seems at first sight that market liberalization did not cause significant changes in the number and structure of service providers, this is not the case. A certain number of smaller providers was not in compliance with the new PSA in early 2013 and continued providing services, while new providers appeared on the market at the same time, who saw their chance on the liberalized market. This trend continued and, by the end of 2013, there were seven new providers and it seemed that the trend will continued considering numerous questions about the conditions and manner for the acquisition of the right to provide postal services.

In addition to the appearance of new providers, some existing providers regrouped or merged. Thus, in early 2013. the provider Weber Escal d.o.o. merged with the provider Post d.o.o., although they belong to the same group (Austrian Post), while provider A1 Direkt d.o.o. merged with provider Tisak d.d. In addition to the above, there were changes in the ownership structure of a smaller number of other providers. All changes resulted in better positioning of individual providers aimed at further growing and spreading on the market, that is, increasing their market share. It must also be mentioned that open market enabled the arrival of new providers from other countries who thus expanded their activities on the European Union common market.

[14] (OG No. 144/12 and 153/13),

According to the new PSA, postal services cover universal service, interchangeable postal services and other postal services. Universal service is provided by a single operator, HP, who incurred that obligation on the basis of the PSA for the duration of 15 years. All 23 providers have been notified for the provision of other postal services, and 11 of them provide substitute postal services as well. According to the area where services are provided, 11 providers were notified for the provision of domestic services ,11 for the provision of domestic and international traffic, and one only for the provision in international traffic. Market liberalization did not lead to changes in the area of activity, that is, it did not result in changes in the number of providers who expanded their activities outside the borders of the Republic of Croatia.

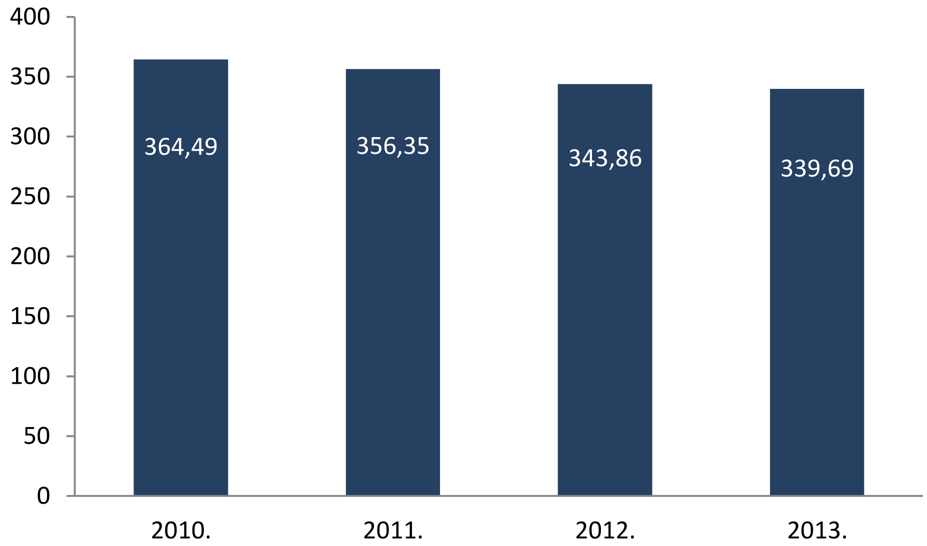
HP is the biggest provider among all providers on the postal services market but several big international and European providers are also providing services using their own network (DHL d.o.o. or DPD d.o.o.) or through representative offices (Fedex, USP and TNT). In addition to the already mentioned Austrian post, there are also other providers of postal services, such as Intereuropa d.o.o., Lagermax d.o.o. and the most recent provider GLS d.o.o. List of all providers is available at the followign linkhttp://www.hakom.hr/default.aspx?id=2637. All providers of postal services had a total of 9, 815 employees providing postal services at the end of 2013, which is eight percent less than at the end of 2012. This is for the most part a consequence of reduction in the number of HP's employees (by 740 employees) as a result of continuation of restructuring and adjustment of HP to new circumstances on the market, which started in 2008. The number of employees was also reduced by other providers, regardless of the total increase in the number of providers, and the share of other providers in the total number of employees providing postal services is 25 percent.

3.1.2 Postal services

Taking into account the new PSA which defined the division of postal services in a different way, data on the postal services market for 2013 were collected on the basis of a new coverage and division of services and in some segments they are not comparable to data from previous years. Indicators on the postal services market are presented collectively in the Report, while some data for HP is presented individually and collectively for all other providers of postal services.

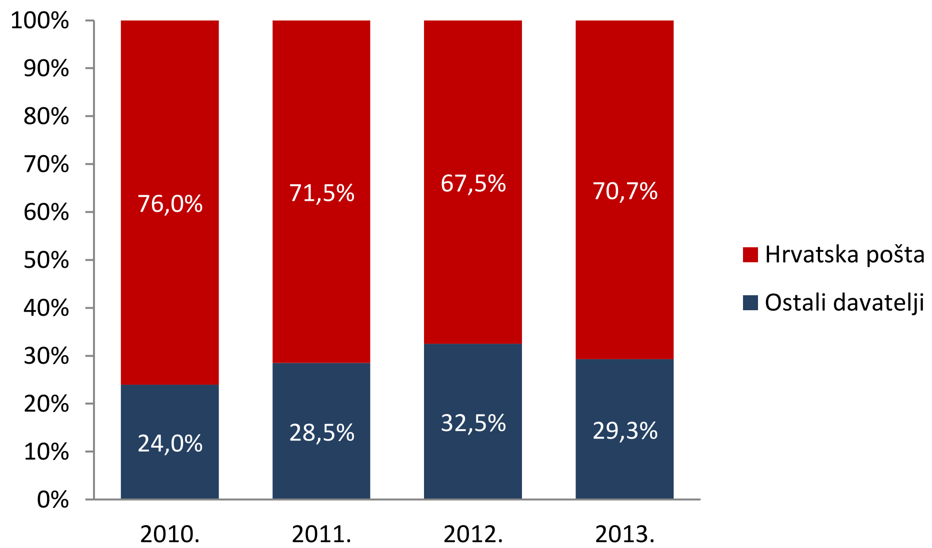
A total of 339,690,438 services was provided on the postal services market in 2013 with a decrease of a little over one percent compared to the previous year. Although the total number of services continued to fall, the drop was smaller than in the previous years which is why it may be concluded that the liberalization of the postal services market in the Republic of Croatia resulted in the slowing down of the negative trend (Figure 3.1).

Figure 3.1. Total number of postal services (in millions)



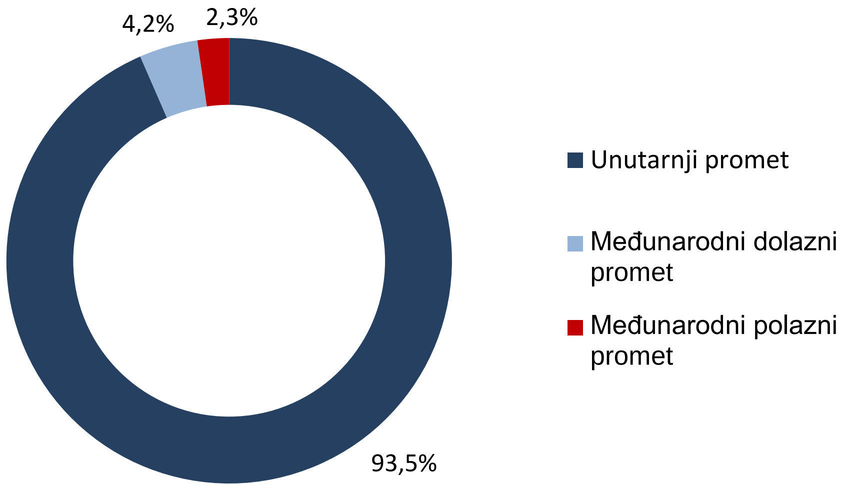
The majority of postal services, a total of 240 034 295, were provided by HP as the leading provider of postal services in the RoC with the market share of almost 71 percent, while other providers provided 99 656 143 services. On the basis of comparison of the number of services provided by HP and other providers in 2013, compared to the year before, it must be emphasised that HP's services grew by 3.5 percent, while other providers recorded an 11 percent growth. HP's share on the market increased by three percent compared to 2012 and the negative trend that existed for several years was stopped.

Figure 3.2. Market shares of providers according to the number of provided services



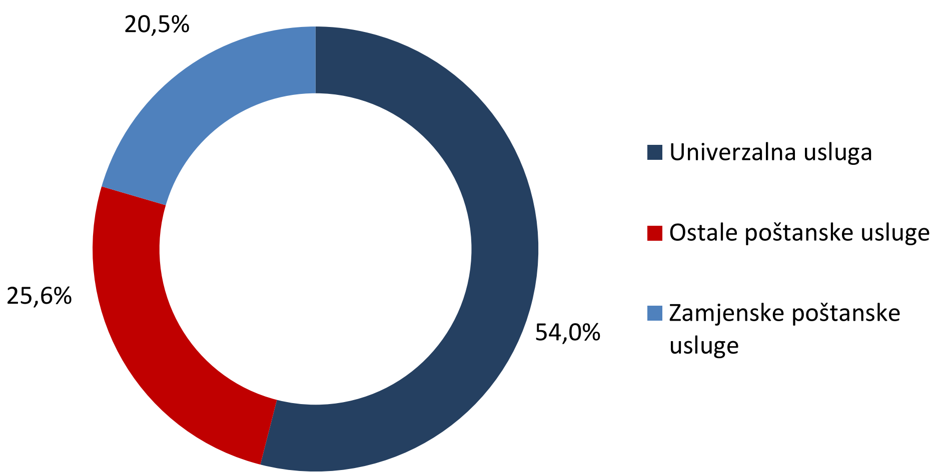
Market liberalization and accession of the Republic of Croatia to the European Union, which resulted in the removal of certain barriers, which include the exchange of goods and services between Member States, including in the postal traffic, such as customs, shipping and taxes, did not have a significant impact on changes in the type of traffic. Almost 94 percent of total traffic is still carried out in internal postal traffic with 315.5 million of service provided and this share has not changed compared to the previous years. A total of 14.4 million services were provided in international incoming traffic, that is, more than four percent, and 7.7 million in international outgoing traffic (Figure 3.3.)

Figure 3.3. Shares of postal items per types of traffic



Out of the total number of services in domestic traffic, HP's share was about 69 percent , in the total number services of international traffic, HP's share was around 97 percent, and the rest was provided by other operators. In the total number of provided postal services in 2013 (figure 3.4.), the biggest share belongs to universal service with a share of 54 percent, followed by other postal services with 25.6 precent, and the rest are substitute postal services.

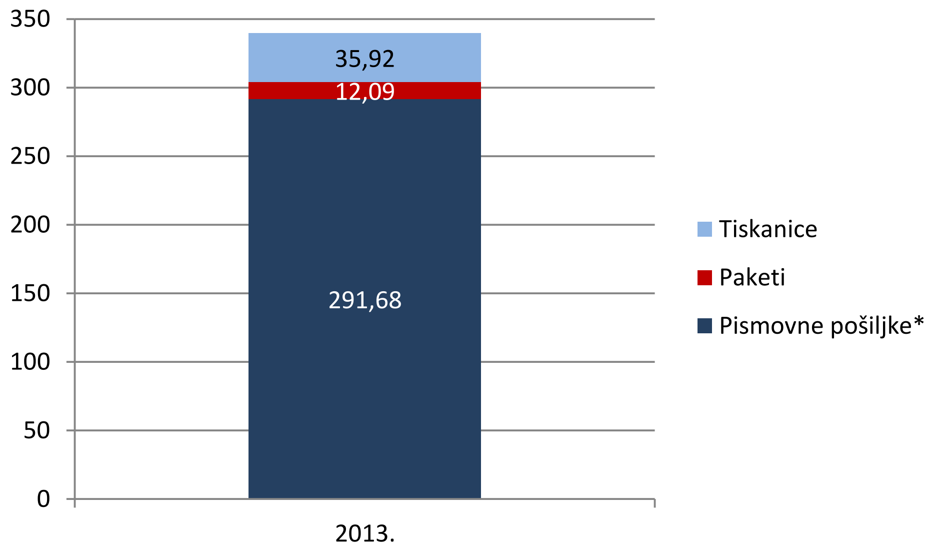
Figure 3.4. Share of types of services



The majority in the total number of services per type of postal items belonged to letters[15] which had a share of 86 percent with 292 million services, followed by printed matter with a share of 11 percent and 35.9 million of provided services, and the smallest share was held by packages which had a share of 3.6 percent with 12.1 million (Figure 3.5).

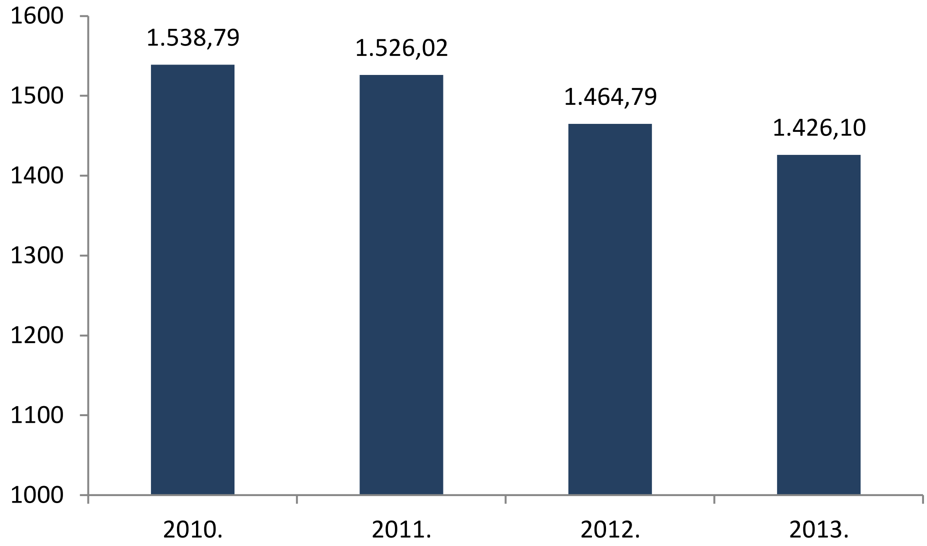
Figure 3.5. Number of postal services per type (in million)

[15] letters + registered latters + insured letters + cecograms + direct mail



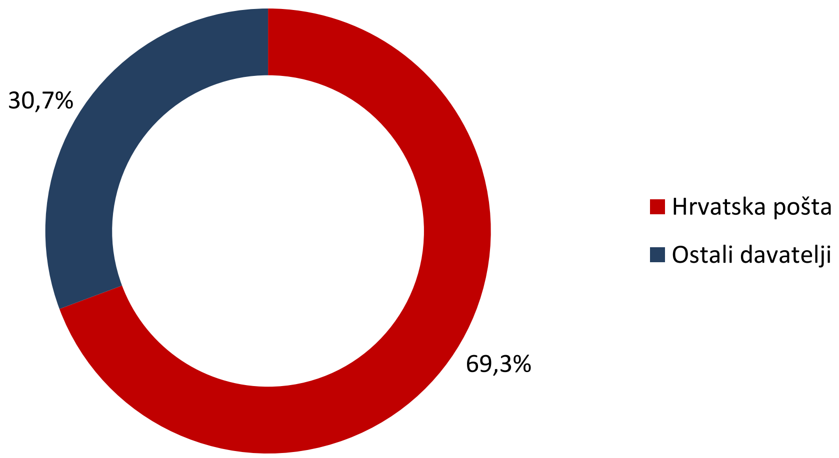
Liberalization of the market and increased competition resulted in greater struggle of providers for users, which partially influenced the decrease in prices of certain services. This, in the end, resulted in decrease in the total number of services and less revenue on the postal services market. As a result, a total of HRK 1,426,100,267 million was earned in the first three quarters of 2013 only from the provision of postal services, which is three percent less compared to the same period in the year before (Figure 3.6.)

Figure 3.6. Total revenue from postal services (millions of EUR)



HP earned a total of HRK 987,874,743, which is almost 69 percent of total revenue on the market, while all rest has been earned by other providers, that is HRK 438,225,524, where mutual shares did not change significantly compared to the year before (Figure3.7.). However, compared to 2012 the revenue of HP and other providers decreased by around three or two percent in 2013.

Figure 3.7. Share of revenue of postal service providers



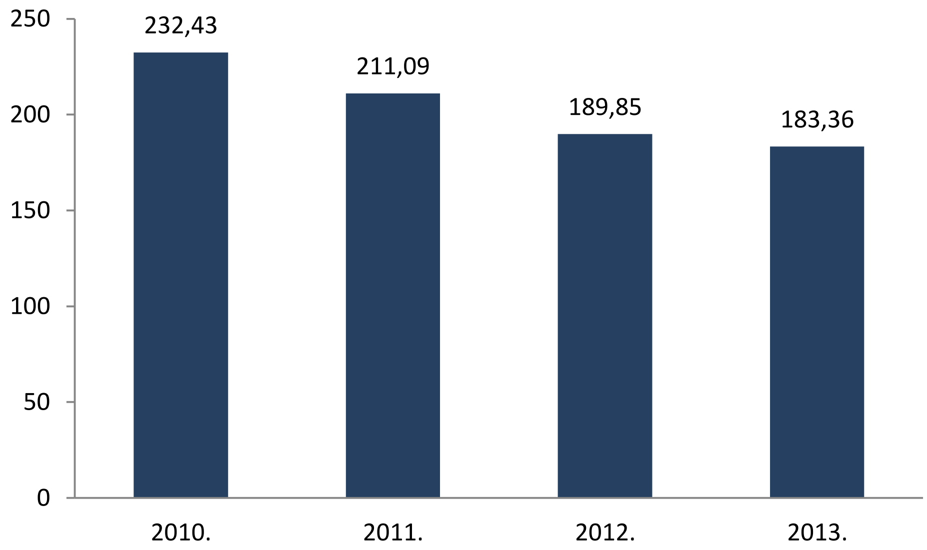
Considering the current situation, it may be assumed that revenue will continue to fall in the future. However, the opposite scenario is also possible if providers of postal services take advantage of business opportunities arising from the economic crises and of innovations and/or technological and technical improvements to expand their offers and services representing added value to the existing services, that is, the introduction of new more innovative services acceptable for the users. One such opportunity for providers is the increased volume of e-trade, which is expected to grow in the future.

3.1.2.1 Universal service

Universal service is a set of postal services of a certain quality which are available at an affordable price to all users of postal services in the entire territory of the Republic of Croatia, regardless of their geographical location. Universal service also covers postal services in domestic and international traffic, including the reception, sorting transport and delivery of postal items weighing up to 2 kilograms, registered mail, insured mail, packages up to 10 kilograms and cecograms amounting to 7 kg at no charge and sorting, transport and delivery of packages up to 20 kg in international incoming traffic.

HP, as the only universal service provider in 2013, provided a total of 183,358,197 services as part of universal service provision, which is 3.5 percent less compared to the year before when a total of 189,848, 574 were provided. Although the decrease is a continuation of the negative trend from the previous years, the decrease in the share of universal service on the liberalized market is to a certain extent logical, In accordance with the PSA, interchangeable postal services include a part of services under the scope of universal services may derogate from the conditions of the universal service, but they may be considered to be within that scope from the point of view of users because they are sufficiently interchangeable with the universal service. Therefore, a part of services under the scope of universal service became interchangeable postal services because more providers have been providing such services.

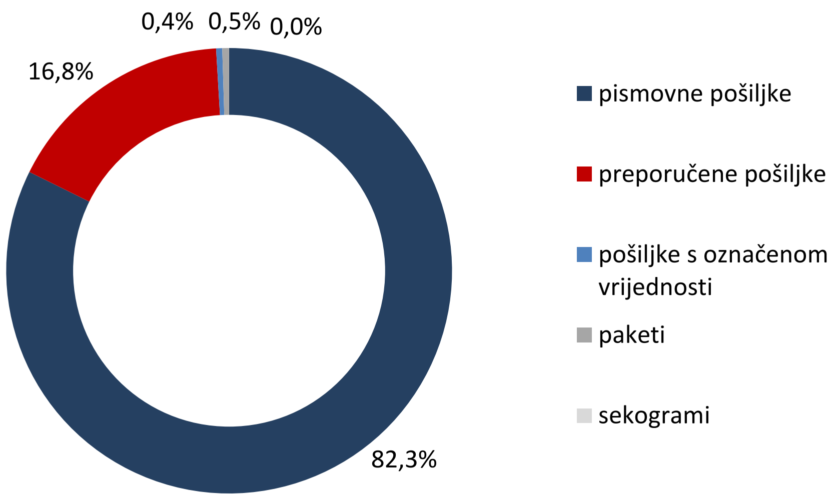
Figure 3.8. Total number of services covered by universal service (in million)



The share of universal postal services in total postal services in 2013 was almost 54 percent, which is about one percent less than in the year before.

The structure of the total number of services covered by universal services (Figure 3.9.) shows that the share of letters with 150.9 million provided services was almost 82 percent, followed by registered mail with 30.7 million and share of almost 17 percent, while insured mail and packages both had a share of around one percent. The mentioned shares did not change significantly compared to the year before.

Figure 3.9. Shares of provided services covered by universal services per type



In 2013, HP reported revenue from the provision of postal services amounting to HRK 721.5 million, which is about seven percent less than the year before.

3.1.2.2 Interchangeable postal services

Interchangeable postal services are postal services covered by universal services which may derogate from the conditions of universal service, such as the obligation of everyday delivery or the provision of services in the entire territory of the country, but may be regarded as services covered by universal services because they have interchangeable with universal service to a sufficient extent.

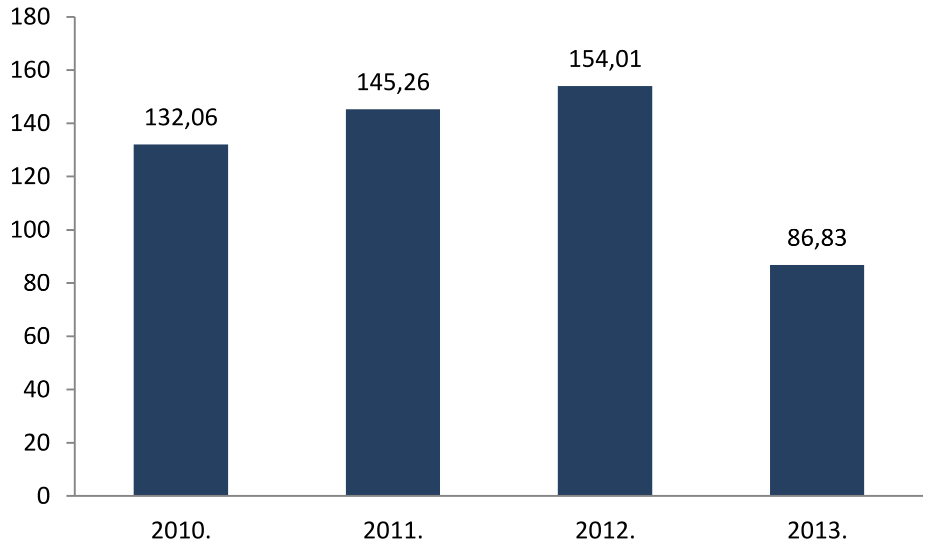
Providers of postal services provided a total of 69,504,164 of interchangeable postal services in 2013, which is about 20.4 percent of all postal services. The share of other providers in the total number of interchangeable postal services was 71 percent, which is 49, 372, 06, while HP's share was 20,131,458. More than 99 percent of all interchangeable postal services included services related to postal items. All providers of postal services earned a total of 132.9 million HRK from the provision of interchangeable postal services in 2013.

3.1.2.3 Other postal services

Other postal services include reception, sorting, transport and delivery of postal services, in domestic and international traffic, which are not covered by the universal service or the interchangeable postal services.

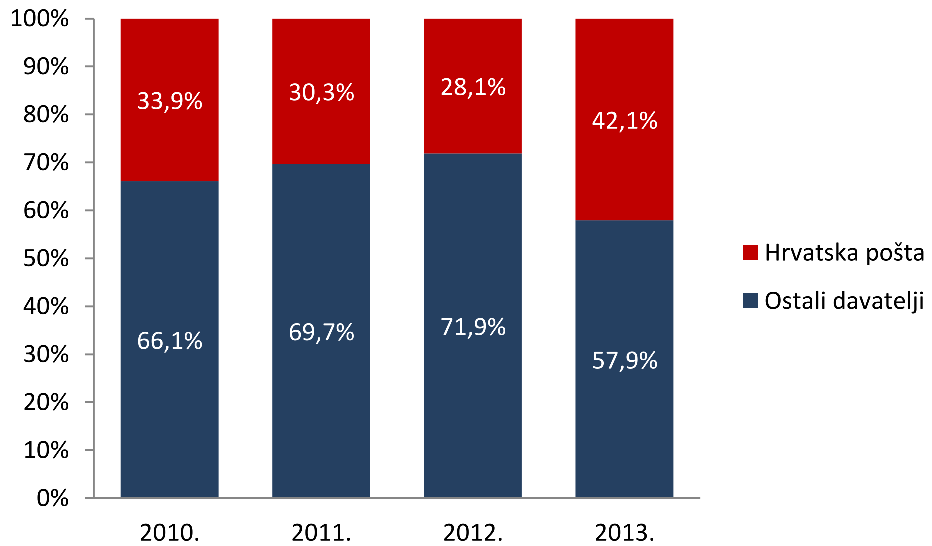
In 2013, providers of postal services provided a total of 86,828,077 universal postal services within the framework of other postal services, which is almost 44 percent less compared to the year before(Figure 3.10.). The most important reason for the decrease in the number of services is the fact that some of these services were transferred under interchangeable postal services, and another reason is the general drop due to less economic activity.

Figure 3.10. Total number of other postal services (in millions)



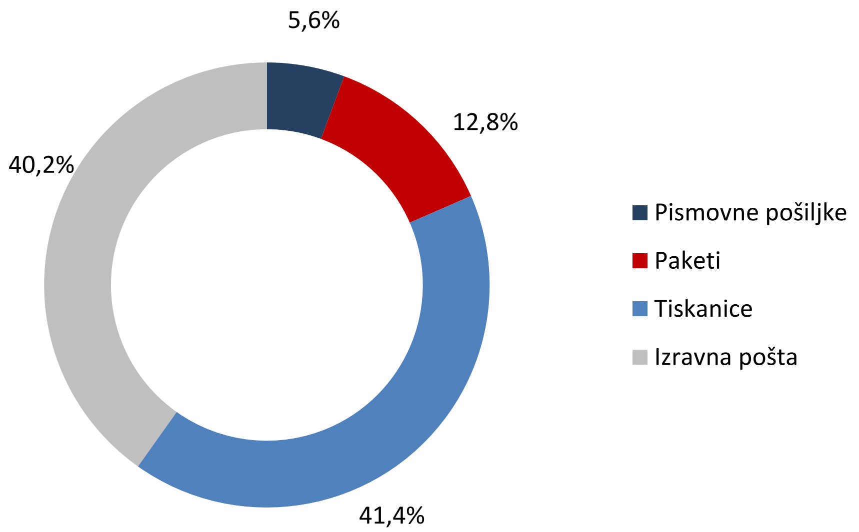
The share of other postal services on the total market of postal services in 2013 was almost 26 percent, which is about 19 percent less than in the year before. HP's share was almost 42 percent with 36, 544,640, whle other providers provided 50,283,437 ostatak (slika 3.11.).

Figure 3.11. Market shares of providers according to total number of provided services



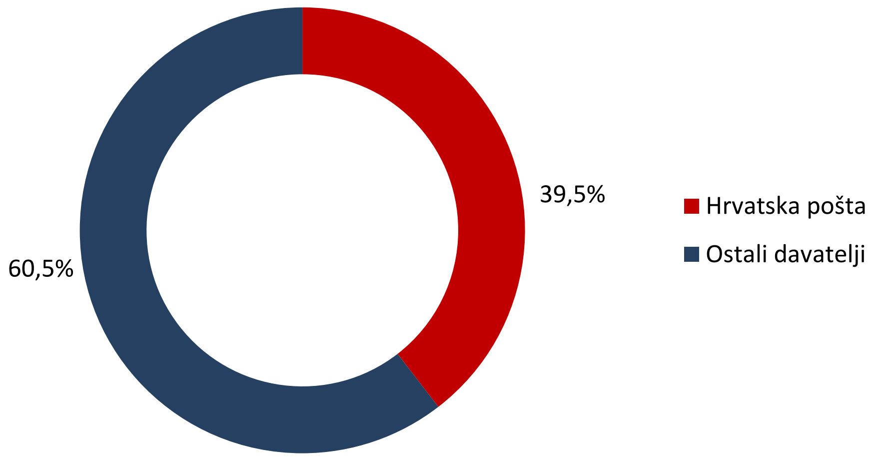
It is obvious in the structure of other postal services (Figure 3.12.) that postal items with provided 4.9 million services made almost six percent of all postal services, the deliver of printed matter made 35.9 million, which is almost 41 percent, direct mail services with 34.9 million of services almost 40 psercent, and packages of 11.1 million of services amounted to almost 13 percent of all other postal services.

Figure 3.12. Shares of provided other postal services per type



All providers of postal services reported total revenue of HRK 571.8 million from the provision of other postal services in 2013, which is about 16 percent less than the year before, out of which HP made HRK 226.1 million in revenue or almost 40 percent, and other providers earned HRK 345.7 million (Figure 3.13).

Figure 3.13. Share of revenue of providers of other postal service



3.2 Overview of regulatory measuresin the postal services sector

HAKOM carries out its regulation of the postal services market in the two basic ways:

1. proactively – by giving initiatives for further development of the postal services market;
2. correctively – reaction to noticed situations and development trends on the postal services market.

The proactive component of HAKOM's activities includes collecting, analysis, sorting and publishing of data, notifications and documents on the situation on and development of the postal services market. In addition, HAKOM strengthened and confirmed its role of the market regulator by means of frequent contacts and cooperation with all providers of postal services on the market and by guiding postal services providers towards complete market liberalisation.

As part of the corrective component of activities, HAKOM undertakes appropriate measures for guiding the development of the postal services market in accordance with the PSA.

3.2.1 Regulatory activities in the sector of postal services

The legislative framework regulating the postal services market in the RoC was set out in the PSA which entered into force on 1 January 2013 and which fully liberalized the postal services market in the RoC. Therefore, HAKOM's activities on the postal services market in early 2013 were primarily focused on regulation of a fully liberalized market aimed at creating equal conditions for all providers so that users could have the possibility to choose between postal services and providers according to their desires and needs. For that purpose, HAKOM adopted subordinate legislation under its competence and at the same time strengthened contacts and cooperation with all stakeholders on the postal services market and provided equal support to all providers of postal services to enable them to adjust to the new regulatory framework.

The most important subordinate legislation adopted by HAKOM is the Ordinance on the provision of universal service[16] laying down the requirements and criteria that have to be fulfilled by the postal network of the universal service provider, the conditions of participation in the tender for the selection of the universal service provider that must be fulfilled by providers of postal services, conditions, manner and procedure for the provision of postal services, exemptions from the delivery of packages at the recipients address, exemptions from the deadline for delivery of postal items, the list of Croatian standards for measuring the quality of universal service, constituent parts of the annual report on the quality of provision of postal services, constituent parts of the calculation of net cost, location and conditions of access to the postal network of the universal service provider, content of the application and the contract, questions concerning access to the universal provider's postal network and other issues concerning the provision of universal service.

The majority of HAKOM's activities at the beginning of the year were focused on the alignment of notifications and terms and conditions of the existing providers of postal services with the new PSA. In 2013 HAKOM issued 26 certificates of receipt of complete notifications for the provision of interchangeable and other postal services and adopted three decisions on the provision of interchangeable postal services. The adoption of a decision on the provision of interchangeable postal services is preceded by the assessment of the notified services and the request for opinion of the Competition Protection Agency.

Three regulatory disputes concerning network access appeared before HAKOM out of which two were resolved in 2013, and one is pending.

[16] OG No. 41/13

HAKOM's activities were focused on sustainable provision of universal service, especially on their quality, affordability and availability thus offering to all users e equal rights and possibility to use the universal postal service the continuous provision of which is guaranteed by the RoC on its entire territory. Therefore, HAKOM focused its attention on exceptions from derogation from the existing five-day obligation for the delivery of postal items, which is regularly notified to HAKOM by HP. It was established that the delivered exemptions are in compliance with the existing regulations according to which they may not amount to more than 10 percent of Croatia's total population. HAKOM also followed and analysed the situation on and development postal services market in order to ensure fair and efficient competition.

Furthermore, special attention was focused on consumer protection because European practice has shown that rights of users are most frequently violated in the transitional period and the resolution of questions of users is a priority in everyday activities.

3.2.2 Accounting separation (Regulatory accounting)

The PSA prescribes the obligation of accounting separation for all postal service providers with a special emphasis on the obligation of the universal service provider - HP. Pursuant to the PSA, a universal service provider must keep separate accounting of income and revenue earned by providing universal service and income and revenue earned from interchangeable postal services, and separately from income and revenue earned from other services, per type of service and product. The purpose of such accounting separation is to gain relevant foundation for monitoring and/or executing the prescribed obligations, that is, for the adoption of regulatory decisions, or as a source of information for the calculation of net cost of universal service. Existing regulatory practice has shown that the implementation of a cost accounting system, which must comply with specific regulatory requirements, is a particularly demanding and long process.

Furthermore it is prescribed in the PSA that HAKOM shall adopt a decision on the manner of accounting separation for the universal service provider. Therefore, HAKOM adopted a Decision on the manner of accounting separation for universal service provider on 27 March 2013 (hereinafter: Decision) the constituent part of which is the Instructions for accounting separation and cost accounting (hereinafter. Instruction), which is an additional regulatory act the main purpose of which is to support the implementation of a legislative framework based on the EU regulatory framework in the postal services sector. The above-mentioned Decision and the Instructions contain a detailed description of the manner of accounting separation, lay down a framework of necessary information for the regulatory report and the frequency of submission of the report, that is, all provisions that must be applied with a view to fulfilling the regulatory obligations. The objective of this document, that is, of the laying down of more detailed and transparent accounting procedures, separation and reporting is to assist HP in the fulfilment of its regulatory obligations supervised by HAKOM.

Following the adoption of the said Decision and the Instructions, HP, as the universal service provider, delivered the regulatory report for 2012, in compliance with those acts. The formal compliance of the submitted regulatory report with the Instructions was analysed in the initial stage, as well as certain content-related elements. The verification included the organization of workshops with HP's representatives and five such workshops were organized in 2013. On the basis of the carried out verification and analysis, it may be confirmed that the form, content and methodology of the regulatory report comply with the requirements laid down in the Instructions. Furthermore, it may be concluded that the applied model represents significant progress compared to former models of previous regulatory reports. Since the 2009 Postal Services Act was in force in 2012, with different classification of postal services and different obligation of accounting separation, the submitted annual regulatory report for 2012 will enable HAKOM to verify the implementation of cost accounting by HP, in compliance with the PSA and the Postal Services Directive. As it was mentioned earlier, it is a very complex and demanding task and HAKOM envisaged independent audit and supervision of implementation of cost models to be completed in 2014.

3.2.3 Quality of provision of universal service

In 2003, HAKOM focused on supervision and monitoring of quality of universal service since the attainment of the prescribed quality is one of the important objectives of the common postal services market in the EU. Measuring of quality is envisaged in the PSA and in the Ordinance and it is carried out by continuous measuring of the time needed for the delivery of individual priority postal items (in accordance with the HRN EN 13850 norm) and individual non-priority items (in accordance with the HRN EN 14508 norm) and by measuring the number of complaints and compensation for damage (in accordance with HRN EN 14012 norm). The PSA prescribes quality criteria for the provision of universal service according to which universal service provider in domestic traffic must ensure the delivery of 85 percent of postal items of the fastest category (priority mail) within a single day, that is, 95 percent within two working days, and for all other postal items, 95 percent within three working days. In international traffic with member states of the EU only criteria for postal items of the fastest category have been prescribed, meaning that 85 percent must be delivered within three working days, that is, 97 percent within five working days. Furthermore, the PSA prescribed HP's obligation to deliver to HAKOM, at the latest by 1 April of the current year, the Report on the quality of provision of universal service for the previous year, and it also laid down criminal provisions in case of non-delivery of the Report, that is, in case of non-compliance with the prescribed quality of provision of universal service.

During 2013, HAKOM continuously measured quality in accordance with the prescribed norms, and delivered to HAKOM the Report on the quality of universal service for 2013. (hereinafter: the Report). The report shows that HP participated in several measuring operations of postal items in international traffic in 2013, including the continuous measuring of the quality of delivery of priority test postal items with the EU member states. The mentioned measuring, which is carried out by an independent measuring authority (UNEC) for the majority of Member States showed that the prescribed quality criteria have not been fulfilled since 59.1 percent of postal items were delivered in the D+3 time frame, that is, 88.2 postal items were delivered in the time frame of D+5. The mentioned shares remained the same compared to the year before.

The measuring of quality of universal service in domestic traffic was carried out by independent agents and continuous measuring of delivery of priority and non-priority postal items. The results of measuring according to which 85.2 percent of priority postal items were delivered within the time limit of D+1, and 95.8% within D+2, and 95.1 percent of non-priority postal items within D+3 show that all the prescribed quality criteria in domestic traffic have been for the first time fulfilled in 2013. Furthermore, with the assistance of an external audit firm HAKOM audited the 2012 Reports in order to check the compliance of methodology for measuring with the set standards, including the accuracy and reliability of results, and it undertook corrective measures to ensure the compliance of the quality of universal service with the PSA. On the basis of the results of this audit, a series of activities were undertaken aimed at improving the quality measuring system in 2013.

The number of complaints was also measured in 2013, as well as the number of compensations for damage showing that HP received a total of 30 105 complaints of users to universal service, out of which 76 percent in domestic traffic. Out of the total number of received complaints, HP solved 97 percent within the prescribe deadline and in 9.4 percent of cases it established own responsibility. The majority of complaints referred to the loss of postal items, that is, the exceeding of the time limit for delivery and damage of postal items. On the basis of that, it may be concluded that quality of universal service improved in 2013, which is obvious in domestic traffic where quality of delivery was within the prescribed limits.

3.2.4 Postal network of the universal service provider

Postal network is a system of organization and all means which are mutually interconnected into a single technical and technological whole and used by the universal service provider for providing universal service in the entire territory of the Republic of Croatia; Service provider must establish, maintain and develop a postal network so as to ensure the provision of postal services in the entire territory of the Republic of Croatia in the manner prescribed in the PSA and in the Ordinance. The Ordinance prescribes the density of access points network where the postal offices network must be established in such a manner that one postal office covers a maximum of 80 km^2 , that is, a total of 6 000 inhabitants, and that there must be a minimum of 700 regular postal offices.

At the end of 2013, HP had 1 018 postal office, which is more than the prescribed minimum. In the course of 2013, HP closed a total of 24 postal offices. Nine offices were closed on 1 July 2013 at border crossings (at the border with Slovenia and Hungary) because of accession of Croatia to the EU since there was no need for their existence and on the basis of agreement with the Ministry of Finance. Out of the remaining 15 postal offices, one was closed in the in each of the following counties Splitsko-dalmatinska, Osječko-baranjska, Virovitičko-podravska i Međimurska, two offices were closed in Dubrovačko-neretvanska, Sisačko-moslavačka i Ličko-senjska County and five were closed in the County of Istria. All of the closed postal offices were regular offices and HP closed them in compliance with the provisions of the Ordinance ensuring a minimum level of quality of provision of universal service for users of postal services in compliance with the prescribed criteria. Since the new manner of organisation of business operations did not place users into a less favourable position compared to the previous organisation, that is, the prescribed quality of the provision of postal services was not jeopardised, HAKOM agreed with the proposed closing of postal offices.

Following the adjustment to organizational changes and alignment with the Ordinance in 2013., working hours were changed in almost 200 postal offices. The majority of changes referred to the shortening of working hours where there was no significant deterioration of the quality of provision of universal service.

3.2.5 Inspection supervision

After the entry into force on the new PSA, inspection supervision tasks were transferred from the competence of the Ministry of Maritime Affairs, Transport and Infrastructure (hereinafter: MMATI) to the competence of HAKOM. In accordance with that, two employees of the MMATI, who were in charge of inspection supervision, transferred to HAKOM on 1 March 2013.

During 2013, a total of seven inspection supervisions were carried out over postal service providers. The object of one supervision was postal services provider ZUM 2010 d.o.o. and it was established that the provider did not exist at the notified address. Since it was impossible to establish contact with the provider, it was proposed that this provided be deleted from the register of postal service providers and from the list of postal service providers published by HAKOM on its website, after the expiry of the prescribed deadline in compliance with the provisions of the PSA.

Six *ex officio* inspection supervisions were carried out over the postal service provider CITX EX D.o.o. Inspection supervision was based on the application of provisions of the PSA and regulations adopted pursuant to the PSA prescribing the obligation of accounting separation of revenue earned from interchangeable postal services and revenue earned from postal services provided on the basis of a notification (other postal services) per type of service, use of stamp of the postal service provider and resolution of complaints of postal service providers. HAKOM's postal inspector adopted a decision ordering to postal service provider CITX EX d.o.o. to start applying accounting separation so that revenue earned from interchangeable postal services may be separated from revenue earned from postal services provided on the basis of a notification, per type of service, for the purpose of provision of postal service activity with the PSA.

In non-administrative cases related to procedures and tasks which are pursuant to the provisions of the PSA under the competence of HAKOM, and which are pursuant to the Annex to the Agreement on the taking over of civil servants and continuation of activities concluded between MAFTI became HAKOM's documents, three judgments were received by the Misdemeanour Court in Zagreb. In those two cases providers and responsible persons in providers were found guilty (CITY EX d.o.o and HP) , and in one case the provider was acquitted (CITY EX d.o.o.).

3.2.6 Monitoring the situation and the development of the postal services market.

Pursuant to the PSA, HAKOM is competent for monitoring the situation and development of the postal services market nad HAKOM collected in 2013 statistical and other data from postal service providers. Market data were collected for each individual trimester and, at the annual level, the coverage of data was aligned with the new division of services in compliance with the PSA. The collected and processed data was used for monitoring and analysing the situation and developments on the postal services market in the RoC and for different requirements of European bodies for the purpose of monitoring and analysing the situation on the European postal services market (EUROSTAT, ERGP): HAKOM regularly published at its website quarterly data on the situation on the postal services market and indicators for the previous year, and quarterly data were presented to the public in the form of announcements in the media. HAKOM also regularly published and updated at its website a list of postal service providers.

4 CONSUMER PROTECTION

The provision of clear and transparent information to end users is ensured through the implementation of the established principles and objectives of the policy for the development of the electronic communications and postal services markets under the competence laid down in the ECA, PSA and special laws. Benefit of end users is ensured by applying the principle of objectivity, transparency, non-discrimination and proportionality in the protection of competition. A special emphasis was placed on ensuring a high level of protection of users of services in their relations with operators/service providers, in particular by making available simple and inexpensive dispute resolution procedures.

4.1 Protection of users of electronic communications services

The area of electronic communications is one of the most dynamic Croatian markets with services that are frequently used by an exceptionally large number of users. There are almost 5 million users of mobile communications networks in Croatia, around 1.5 million phone connections in the fixed public communications networks, over 1.3 million connections for broadband internet access, and over half a million of households that may watch TV programmes over cable networks and IPTV. No other services have such a wide base of users and the pressure on ensuring the protection of users in electronic communications is greater than on any other market. Furthermore, users of electronic communications are often more familiar with the protection of their rights than consumers on other markets, and all operator's mistakes may be easily noticed by users.

The existing legislative framework is optimum and enables satisfactory protection of such a large number of users.

4.1.1 Objections, complaints and user disputes

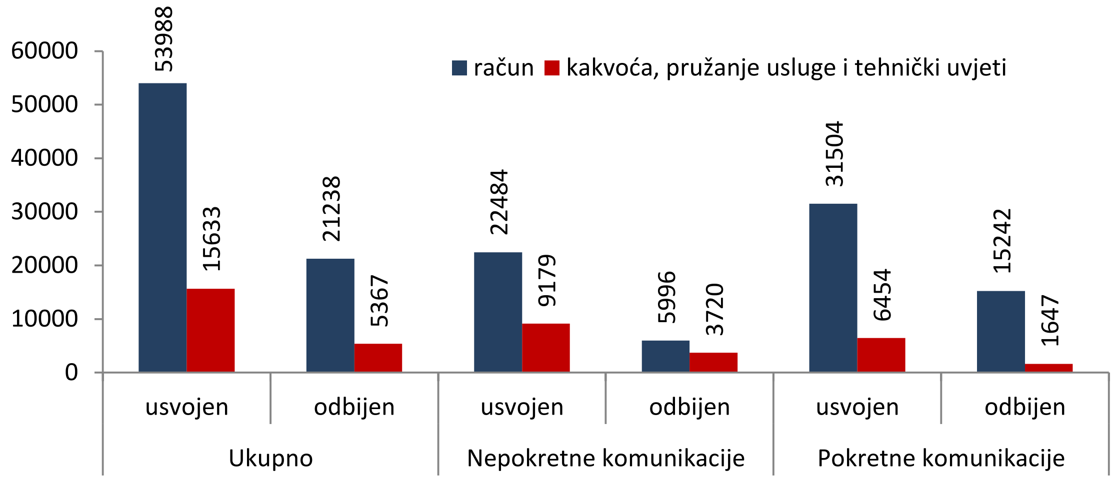
The rights of users of electronic communications to complain to operators are regulated by the ECA as an out-of-court procedure of three instances. If the user is unsatisfied with the amount of the bill, with the quality of the provided service, with the service or with the violation of the provisions of the subscription contract, he must submit a written objection to the operator within 30 days. If the user receives a negative reply from the operator, that is, if the user is unsatisfied with the received reply, the user may file a complaint to operator's Consumer Protection Commission. If the user is not satisfied with the Commission's reply or if he or she did not receive a reply, he or she may initiate dispute resolution proceedings before HAKOM aimed at examining all the available facts and adopting a binding decision. An administrative claim may be filed against HAKOM's decision.

This manner of out-of-court dispute resolution procedure between users and operators appears to be an efficient manner of protecting users rights because it is much shorter than a regular court proceedings and does not incur costs for the user.

Complaints for operators

As it was already mentioned, complaints are a first instance of in complaint resolution procedure against the operator. Figure 4.1. shows a total number of compliant submitted by users to operators of mobile and fixed communications networks, and the relation between accepted and rejected objections.

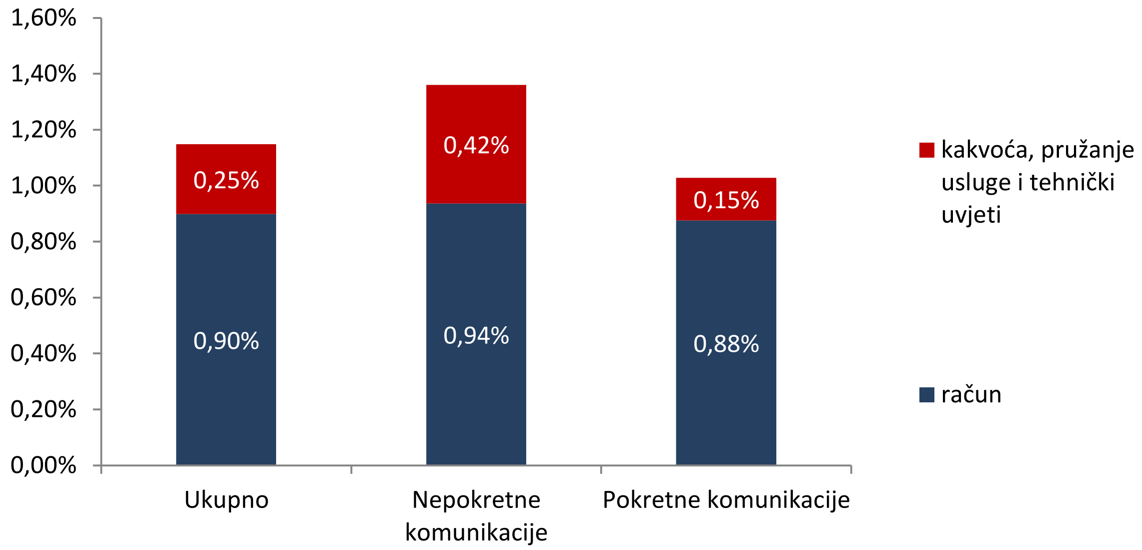
Figure 4.1. Number of accepted and rejected complaints (1st instance)



The percentage of complaints that were accepted by operators is very high. As much as 72 percent of all complaints were accepted in the first instance of complaint resolution procedure. The percentage rises to almost 77 percent if only fixed communications are observed, and it is somewhat lower in mobile communications and amounts to 69 percent.

Although it seems at first sight that the number of complaints is high, if included in the total number of basic electronic communications services (public voice service, TV and Internet), it seems that complaint is received for every hundredth service once a year. The majority of complaints still refers to debts on accounts.

Figure 4.2. Share of complaints in the number of basic services

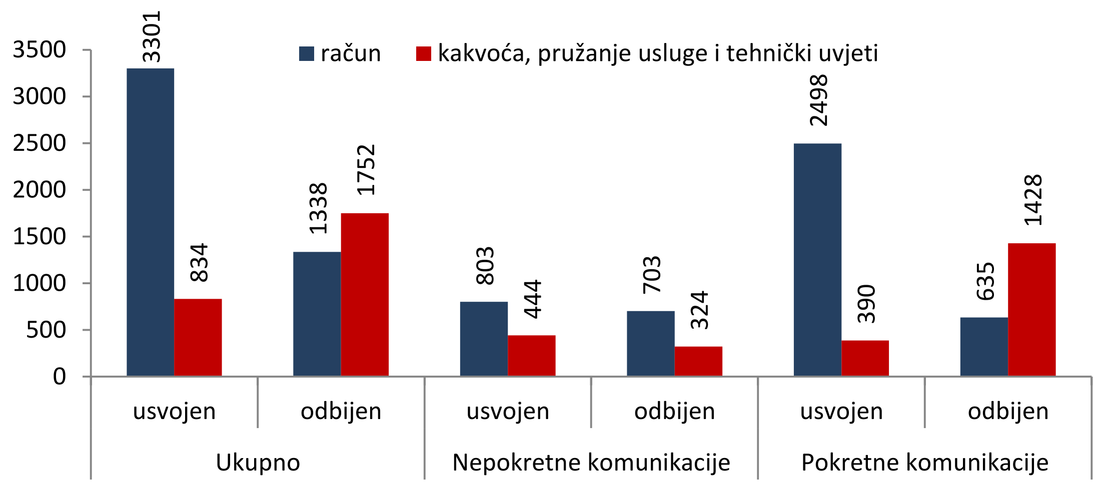


It may be concluded from the previous images that there are more complaints from users of services of mobile communications networks operators, but their share is relatively smaller, taking into account the total number of users in mobile communications.

Objections to operators

The second instance in the resolution of individual user complaints is submission to the Consumer Protection Commission. Any user that is unsatisfied with the operator's reply to his complaint has the legal obligation to continue with the procedure and complain against the Commission.

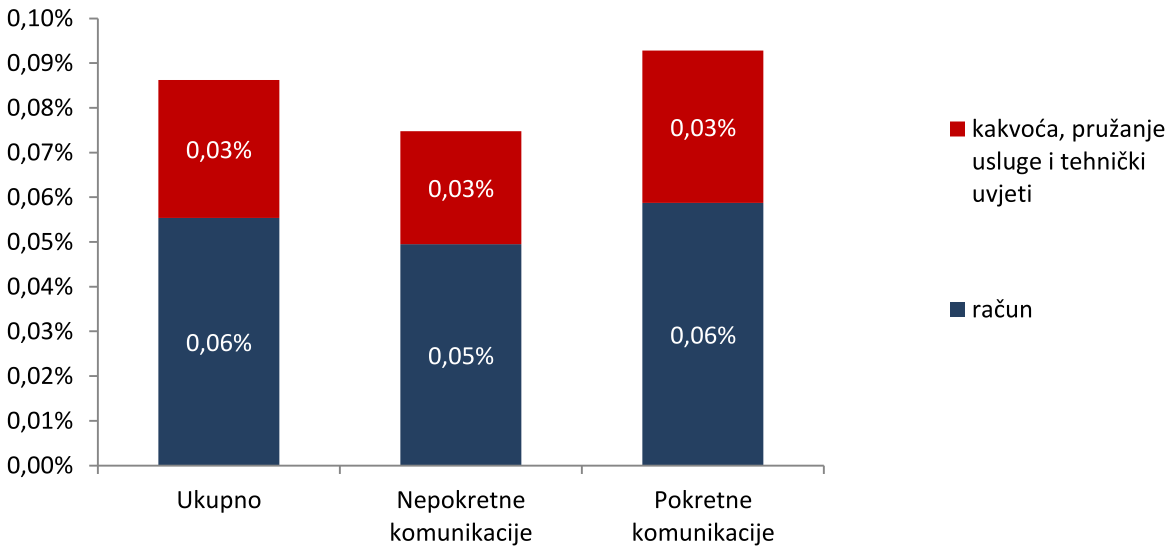
Figure 4.3. Number of accepted and rejected complaints (2st instance)



There is significantly less users that continue with the complaints procedure in the second instance and the percentage of accepted complaints in the 2nd is lower compared to the percentage of accepted complaints in the 1st instance. This situation is to be expected, and the number of accepted complaints amounts to 57 percent.

The share of complaints in the total number of services is presented in Figure 4.4. It is obvious that complaints make less than 0.1 percent of all services.

Figure 4.4. Share of complaints in the number of basic services



Disputes before HAKOM

After filing a complaint to its operator, the user fulfils a legal requirement to initiate a dispute before HAKOM - an independent regulatory authority competent to review user complaints. The dispute is the third and last instance in complaint resolution procedure. If the user filed a complaint or an objection within the deadline because he is unsatisfied with the amount of the bill, quality, service or due to the violation of the subscription agreement, and believes that his or her rights have been violated, the case may be brought to HAKOM by submitting a dispute resolution request. If is established that all the legal preconditions for dispute resolution have been fulfilled, the case is examined and a binding decision is adopted. HAKOM's Consumer Protection Commission also participates in the adoption of decisions, rulings on suspension or rejection with the proposal for action. The Commission is composed of HAKOM's experts and representatives of the Federation of Consumer Protection Associations. The dispute does not represent a direct cost for the user because it is free, and may be initiated electronically by using HAKOM's web application e-complaints.

Table 4.1. Analysis of disputes solved by the Consumer Protection Commission

Disputes	Positively	Negatively	Subsequently positively[17]	Deadline exceeded	Lack of competence	Withdrawal of complaint
1696	306	589	377	220	188	16

Table 4.1. presents an analysis of resolution of dispute resolution requests at sessions of HAKOM's Consumer Protection Commission. It is obvious that the ratio between positively and negatively solved disputes is almost 1:2. This means that operators mostly adopt justified decisions in complaint and objection procedures and that HAKOM forces operators to act differently only in one third of cases. It is worth mentioning that 377 disputes have been solved positively without the need for adopting a decision. During the procedure, when HAKOM underlines the mistake, operators often change the original opinion themselves and accept user's complaint and the procedure is completed by a decision at the user's satisfaction. It may also be seen that 220 disputes had to be rejected. A total of 125 disputes because requests were not submitted on time, and 95 due to incomplete documentation. One of the reasons for the rejection of disputes is because uses are unfamiliar with the regulations, that is ,with prescribed deadlines for the submission of complaints, objections or for initiation of dispute resolution procedures.

The analysis of initiated disputes per operators is illustrated in Table 4.2. HT has the largest share in disputes, which is to be expected considering its large user base, but it is not sufficient to present this data separately. For that reason, the share of disputes per user base of a single operator is presented as a measure of frequency of requests for the protection of rights at HAKOM. It is obvious that it changes from one to five users to 10 000 users, depending on the operator.

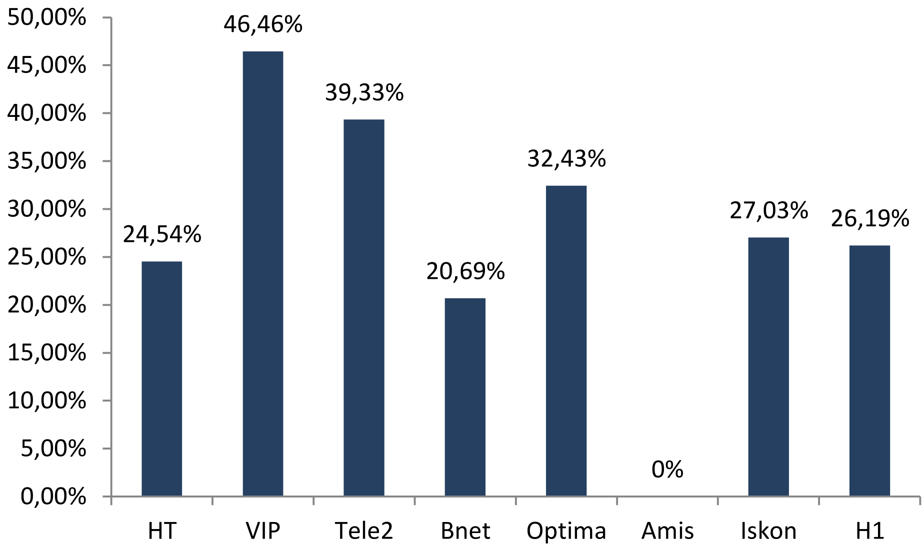
Table 4.2. Analysis of initiated disputes per operators

Operator	Number of disputes	Shares of operators in disputes [%]	Share of disputes in relation to number of users [%]
HT	269	30.06	**0.01**
Tele2	239	26.70	**0.03**
VIP	198	22.12	**0.01**
Optima	74	8.27	**0.04**
H1	42	4.69	**0.05**
Iskon	37	4.13	**0.04**
Bnet	29	3.24	**0.04**
Amis	4	0.45	**0.02**
Other	3	0.34	-

[17] Disputes were positively solved by the operator in the dispute resolution procedure, that is, the operator accepted the user's complaint before adopting HAKOM's binding decision.

An interesting measure that can be used to compare and asses the work of the service for user complaints and objections is illustrated in Figure 4.5.

Figure 4.5. Shares of different actions of operators and HAKOM in the user complaint resolution procedure



It has already been mentioned that in the 3rd instance of user complaint resolution procedure, that is, in dispute resolution procedure, HAKOM receives only cases rejected by operators as unfounded complaints and objections. If consumer protection services of operators acted in the same way as HAKOM would act in an individual case, than HAKOM's decision is negative for the user. The percentage of negative decisions is around 66 percent on average, and in the remaining 34 percent of decisions HAKOM concluded that operators were not right and that the user should have been treated differently.

In comparison to the previous years, there was a slight increase in the number of dispute resolution requests, which became stable after the final alignment of the ECA with the acquis in 2011.

Table 4.3. The structure of resolved disputes at the meetings of HAKOM's Commission per years

Structure of resolved disputes	2009	2010	2011	2012	2013
Positively	193	408	75	279	306
Subsequently positively	98	185	285	407	589
Dismissal of proceedings	62	171	380	502	393
Negatively	217	255	311	421	408
Total	**570**	**1019**	**1051**	**1609**	**1696**

4.1.2 Complaints to HAKOM

Dispute resolution requests are not a representative sample for detection and prevention of precisely defined market problems. A request addressed to HAKOM is a third instance in complaint resolution procedure and it is used, as a rule, only when the user has exhausted all possibilities to solve disputes with the operator. For that reason, some problems may be missed or their importance may not be discovered if users do not submit dispute resolution requests.

Therefore, data from all user cases or inquiries are used in the analysis of complaints in HAKOM's new business system e-complaints. The basic division is presented in Table 4.4. and represents types of complaints addressed to HAKOM in the last 5 years.

Table 4.4. Types of complaints

Type of complaint	2009	2010	2011	2012	2013
Bill complaints	687	764	1129	1392	1217
Quality complaints	111	124	138	224	229
Carrier pre-selection complaints	24	37	39	32	34
Number portability complaints	77	50	68	205	199
Complaints against business procedures	31	36	71	383	475
General questions			338	78	137
Total complaints	**930**	**1011**	**1783**	**2314**	**2291**

A total number of user complaints remained in 2013 at around 2300 cases in which users contacted HAKOM directly. The number of bill complaints is less by 12.5 percent, and the number of complaints against business procedures is 25 percent higher than the year before. The reason for the increase in complaints against business procedures is an increased number of cases where users complain against a contract or a termination of a contract with the operator. This is related to an increased number of ported numbers (Figure 2.7. and 2.8.) in 2013 as a consequence of new, more favourable tariffs on the market because every ported number means a new contract with a new operator. Other categories of complaints are comparable with the previous year.

Bill complaints

Bill complaints are the most frequent category of complaints and their share in the total number is constantly falling and in 2013 it amounted to a little more than 50 percent.

Table 4.5. Structure and number of bill complaints

Type of complaint	2009	2010	2011	2012	2013
Basic services[18]	216	391	684	1013	939
Other debts[19]	20	15	29	38	45
Internet traffic	202	192	269	283	199
Special tariff services	248	74	71	36	24
SMS services with special tariffs	156	127	78	23	10
Total	**687**	**764**	**1129**	**1392**	**1217**

[18] Monthly fees, tariffs, packages and contracts
[19] Dunning letters, interest rates and late payments

The number of all types of complaints was lower compared to the year before, except for those where users complain against dunning letters, interest rates or late payments. The reason for the decrease is that operators adopted a practice to notify users about increased spending. Accession to the EU and consistent implementation of the Roaming Regulation, which prescribes obligations concerning the notification of users about prices, resulted in the decreased number of bill complaints for data roaming services to 29.

Quality complaints

Table 4.6. Structure and number of quality complaints

Subject of complaint	2009	2010	2011	2012	2013
Internet access speed	1	4	11	22	18
Accessibility	7	8	12	14	26
IPTV	44	2	36	7	20
PCM devices	20	53	23	32	21
Overburdened lines	3	16	1	3	2
Other technical problems	20	3	22	106	103
Noise, interference, crosstalk and signal interruption	16	15	26	33	31
Other in provision of services	0	23	7	7	8
Total	**111**	**124**	**138**	**224**	**229**

In accordance with the total number of complaints, the number of quality complaints may be compared to the year before. A similar division of complaints according to certain segments of quality confirms the stabilization of the user environment - operators adopted a regulatory framework and are applying t to end users.

Analysis of complaints against operators' business practice

In order to prevent possible omissions in the behaviour of operators, HAKOM dedicates special attention to complaints against business operation of operators because they may indicate system or intentional issues. One of such categories is the operators' advertising, that is, failures that lead the users to draw wrong conclusions.

Table 4.7. Complaints against operators' business practice

Type of complaint	2009	2010	2011	2012	2013
Operator's advertising	31	36	71	44	136
Carrier pre-selection	24	37	39	32	32
Number portability	77	50	67	205	181

Number porting is a second category in which the trend initiated in 2012 continued. There are several reasons for this - more users have been changing operators than ever before, and operators are obliged to pay late fees to users in case of delayed porting. The amount of the fee is HRK 10 for every delayed hour of number porting into another network.

4.1.3 Preventive activities in user protection

With a view to achieving a high level of user protection, HAKOM regularly conducts preventive activities. One of the most important activities started by HAKOM in 2012, and continued in 2013, is the implementation of an IT system entitled "e-Tariffs":

The purpose of the e-Tariff system is to provide to users the necessary information about the prices of public communications services and their amendments in real time with the offer on the market. For that purpose, HAKOM will offer to end users at its website an independent assessment of charges arising from the prices of public communications services. The e-Tariff system will also enable HAKOM to supervise in a simple and transparent manner the offer of public communications services of operators on the market and to promote the development of competition and greater transparency of prices. It is expected that the system will be completed and put into operation in 2014.

What follows is an overview of other preventive activities applied by HAKOM in 2013 to increase the efficiency of user protection:

- control and alignment of terms and conditions of operators (terms and conditions of business and pricing systems) defining their business operations and special obligations concerning consumer protection in electronic communications; the terms and conditions of operators were reviewed, aligned with the new law, and approved.
- all requests for existing and new prices, service packages and promotional offers of operators have been subject to investigation and control;
- operators' questions related to the interpretation of regulations and expert opinions were processed,
- questions from the media and consumer protection associations related to changes in terms and conditions of use of tariff models and user protection were processed,
- training users via the web-site and the „Ask us“ section of the website; HAKOM answered 850 questions in the area of consumer protection within the shortest possible time;
- training of users through Facebook; publication of rights of users and obligations of operators and replies to users' questions;
- preparation and distribution of leaflets for users; 300000 leaflets[20] containing useful information were inserted into national editions of daily newspapers;
- a direct telephone line for contacting HAKOM's experts was introduced and is available during regular business hours for information about specific cases, that is, assistance and instructions on what and how to act in case of problems encountered when using public communications services,
- HAKOM's experts answer users' questions about protection and about their rights and they also participate in TV shows about user protection which include user protection: radio shows „ Svi smo mi potrošači“ on Croatian Radio's second channel, „ Se bum vas tužil“ show at Radio Sljeme, „Glas potrošača“ at Channel ! of the Croatian Radio and TV shows „Što vas žulja“ i „Potrošački kod“
- actively participates in the work of other state institutions on projects concerning user/consumer protection (round table of the Ministry of the Economy on consumer protection, participation in the work of the National Consumer Protection Council).

[20] the leaflet is available to all citizens in the pdf format at http://www.hakom.hr/default.aspx?id=1504

4.2 Protection of users of postal services

Pursuant to the provisions of the PSA, HAKOM is competent for protecting the rights of users of postal services and for resolving disputes between users and providers of postal services. The new PSA aligned the level of protection and complaints resolution procedure of users of postal services with the procedure for the protection of end users of public communications services with operators of public communications services on the basis of the ECA, as a three instance procedure.

Pursuant to the provisions of the PSA , an user of postal services may submit a written complaint to a postal service provider in case of loss of a postal item, non-compliance with the deadline for the delivery of a postal item, if the postal service provider did not provide the service or did not provide it entirely or in case of damage or loss of contents of a postal item. Upon receipt of a written reply of a postal service provider, the user is entitled to submit a complaint to the Consumer Complaints Commission of the postal service provider. In case of dispute between the user and provider of postal services concerning the resolving of the complaint, the user may submit to the Agency a motion for dispute resolution within 30 days from the day of having received the reply from the Consumer Complaints Commission.

HAKOM resolves disputes by adopting a decision, on the basis of the opinion of the Consumer Complaints Commission, an advisory body established with HAKOM, in accordance with the act regulating user protection. HAKOM's decisions in disputes between users and providers of services are final and may not be appealed but an administrative dispute may be initiated.

In 2013, HAKOM received 46 requests for dispute resolution between users and providers of postal services. Out of the total number of requests, 45 refer to disputes with universal service provider, HP.

A total of 37 disputes were resolved in 2013, out of which 28 were received in 2013, and 9 in 2012.

Out of a total number of disputes, 14 were solved by a decision, out of which one was dismissed, and the remaining 13 requests were rejected as inadmissible because they were submitted by unauthorised persons or did not involve the provision of postal services. Decisions were adopted in 23 procedures and 15 requests were rejected as unfounded, 4 were fully adopted and 4 requests were partially adopted. A total of 29 disputes concerned domestic traffic, and 8 concerned international traffic.

Only one administrative dispute was initiated against HAKOM's decisions in 2013.

Concerning types of complaints, 10 requests referred to unfulfilled contractual obligations, that is, obligations that were not fulfilled in their entirety, and 8 to registered mail. A total of 5 disputes were initiated due to loss of a postal item, 6 disputes referred to non-compliance with deadlines for delivery, and 12 disputes were initiated because of damage or loss of contents of a postal item.

4.3 Protection of children

As parts of its competence, HAKOM actively participates in different activities related to the promotion of protection of children and safe use of the Internet and electronic communications services. During implementation of the project "Allocation of numbers for services of social value in the Republic of Croatia", HAKOM allocated the number 116006 and 116000 to the Victims of Crime Call Centre and to the Hotline for Missing Children as part of harmonized European short codes from the 116XXX range intended for services with special social sensitivity. The right of use was approved to the Association for Support to Victims and Witnesses for 2 years, while the Centre for Missing and Abused Children was granted the right of use for 3 years.

With a view to increasing protection of children on the Internet to a higher level, HAKOM joined the Safer Internet Centre as a strategic partner[21]. The Safer Internet Centre merged activities of several different institutions and organization dealing with the protection of children on the Internet - psychological, educational, computer, IT, legislative and sociological. The Centre will enable users (children, parents, teachers and other internet users) to find information and educational material all in one place covering all the mentioned aspects of safety of children on the Internet, and to be able to report violation of online safety of children in one place. Furthermore, the Centre could, in cooperation with its partners, develop information and education material that would cover topics concerning the safety of personal data and privacy, online cooperation and communication, online learning and research, safe browsing on the Internet, making friendships, hanging out with friends and online entertainment. The objective of the centre is to assist in institutional keeping of computer and information security in the educational system, for example, as part of the IT curriculum for elementary and secondary schools.

One of the more important objectives of the centre is to promote computer and IT security and to raise awareness about the importance of creating a safe online environment for children as a precondition for healthy and successful development and growth.

4.4 Access to services by persons with special needs

In addition to regular activities aimed at ensuring Internet access for disabled persons, HAKOM paid special attention to applications for disabled persons as part of its Internet and broadband access development programme. This programme included the following applications intended for disabled persons:

- adjusting of websites of the Croatian Institute of Public Health (HZJZ) - the objective is to adjust the website of the institute for use by blind and sight-impaired persons to improve their quality of life. Content should be adjusted in compliance with the generally accepted norms.
- web advertising for disabled persons - an application intended for establishing free advertising space for disabled persons, in the first place from the areas of special state concern, hilly and mountain areas and islands, to enable them easily put on the market their products and services. The purpose of the application is to enable greater inclusion of disabled persons into information society and to promote self-employment.
- personal therapist project - system of assistance in health care. The objective is to ensure a tool for individual access to each patient, and the advantage of the system is to enable the carrying

[21] Strategic partners of the Safer Internet Centre: Croatian Personal Data Protection Agency, Croatian Education and Teacher Training Agency, CARNet - Croatian Academic and Research Network, Ministry of Social Policy and Youth, Ministry of the Interior of the RoC, MInistry of Public Administration, Ministry of Science, Education and Sports, Veliki Bukovec Elementary School, Polyclinic for the Protection of Children of the City of Zagreb, Zagreb Polytechnic, Pupil Dorms of Hrvatski Radiša, Association „Partners in Learning", 15th Grammar School in Zagreb.

out of a rehabilitation programme outside of specialized health-care institutions, for example, in homes of patients equipped with the system. The above-mentioned project enables the creation of individual exercises and trainings, ensures their correct implementation and the possibility of analysis of the completed therapy by the therapist and the patient.

5 PUBLICITY OF WORK

The obligation of publicity of HAKOM's work was defined in Article 14 of the ECA and other special regulations, such as the Right of Access to Information Act, General Administrative Procedure Act and Public Procurement Act.

Restrictions in relation to public access to HAKOM's work exist only to the extent to which this obligation refers to the obligation to respect confidentiality of certain data and to obligation to protect personal data.

In the course of 2013, HAKOM kept the basic structure of its website which is easy to use and provides a user friendly overview of data on the website, from strategic documents such as annual work plans and reports to detailed databases in registers kept by HAKOM.

The website is regularly updated, and at the end of the year, a process of additional adjustment of the website for users that need information about consumer's rights consumers and operator's obligations.

They regularly published on its website the following:

a) all adopted decisions and other administrative acts, and all judgements of the Administrative Court and the High Administrative Court of the Republic of Croatia;

b) pursuant to Article 22 of the ECA, 39 public consultations were organized on regulations adopted by HAKOM under its competence, and on proposals of regulatory measures;

c) public consultations on important issues which are not covered by formal procedures were carried out, such as consultations on network neutrality;

d) available databases on registers were regularly updated and made available;

e) statistical data on markets of electronic communications and postal services were published regularly.

In addition, HAKOM publishes information on important decisions, judgements and regulations on the electronic communications and postal services markets. HAKOM's representatives participate in radio and TV shows intended for informing the public about important issues in the electronic communications and postal services markets. The majority of public appearances referred to user protection.

As a special form of publicity of its work, HAKOM answers all questions asked on the "Ask us" application on its website[22]. A total of 1920 questions were asked in this manner during 2013.

HAKOM continued to use its Facebook page[23] with a view to informing users and public about rights of users and activities carried out by HAKOM:

During 2013, HAKOM received 42 requests for access to information pursuant to the Act on the Right of Access to Information. All requests were resolved within the time limit. Furthermore, the Office for Associations of the Republic of Croatia received information about conducted public consultation with a view to preparing a report on consultations with the interested public in procedures for the adoption of laws, regulations and other acts in 2013.

[22] http://www.hakom.hr/default.aspx?id=59
[23] http://www.facebook.com/HAKOM

6 COURT PROCEDURES

HAKOM's judicial proceedings are administrative proceedings initiated against HAKOM's final decisions and misdemeanour proceedings initiated by HAKOM against legal and natural persons violating the provisions of the ECA. HAKOM is also in charge of enforcement proceedings against legal and natural persons for non-payment of fees.

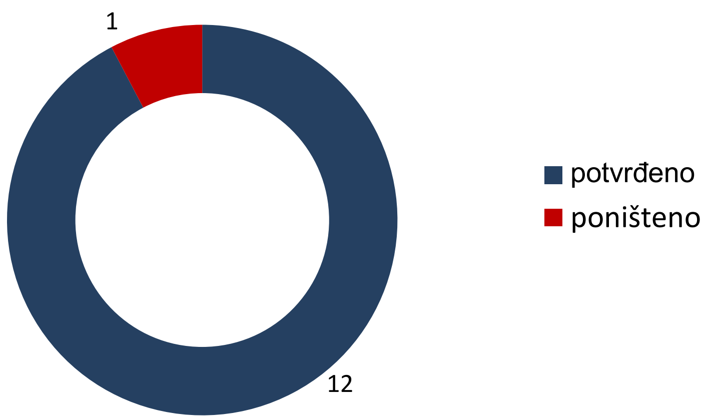
Administrative disputes

Pursuant to the ECA, all HAKOM's decisions adopted in administrative proceedings are final and may not be appealed, but they may be disputed before the High Administrative Court of the Republic of Croatia.

However, with amendments of the ECA in 2013, one part of competences concerning the resolution of administrative disputes changed. It was envisaged in the amendments that administrative proceedings may be initiated in disputes between end users of services and operators before the competent local administrative court.

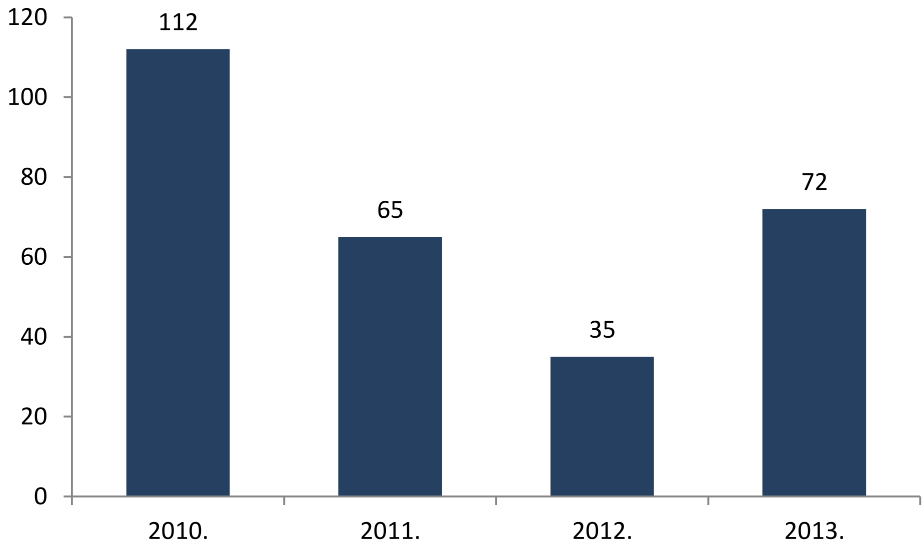
The total of 72 administrative proceedings have been initiated against HAKOM in 2013. The High Administrative Court adopted 13 decisions in administrative disputes initiated against HAKOM's decisions. A total of 12 HAKOM's decisions were confirmed, and 1 was annulled.

Figure 6.1. Result of High Administrative Court judgments



At the end of 2013, there were 72 disputes pending before the High Administrative Court of the Republic of Croatia against HAKOM's decisions. Compared to 2012, the number of administrative disputes against HAKOM's decisions almost doubled. However, compared to 2012, the High Administrative Court adopted significantly less decisions which is a consequence of amendments to the ECA which slowed down the work of the court.

Figure 6.2. Number of filed administrative complaints



Misdemeanour proceedings

In accordance with its legally prescribed authority, HAKOM issued in 2013 the total of 8 misdemeanour orders and submitted 7 misdemeanour motions-

Taking into account the previous years, only 11 first-instance misdemeanour proceedings were instituted against HAKOM before the competent misdemeanour courts.

No judgments were adopted in 2013.

All of the 5 final decisions adopted in misdemeanour proceedings in the previous years were in HAKOM's favour.

Enforcement and other proceedings

A total of 61 enforcement proposals were submitted in 2013 against various companies and a total of HRK 13,607,676 were enforced.

And finally, taking into account the previous years, HAKOM currently has 253 pending enforcement and civil proceedings.

7 COOPERATION

7.1 International cooperation

European Union (European Commission, Council)

During the year HAKOM followed the work of the Telecommunications Conformity Assessment and Market Surveillance Committee - TCAM. The committee discusses the conformity of R&TT equipment placed on the market in the EU, and the coordination of supervision over the placing on the market and use of R&TT equipment. The meeting is attended by representatives of national regulators of EU Member States and by representatives of the industry and other international organizations (ETSI, CENELEC, R&TTE CA). Participation in the work of the committee is important for the purpose of systematic following of all novelties and active participation in international campaigns of market supervision concerning the use of R&TT equipment.

HAKOM and European Commission for the Information Exchange (TAIEX) organised a two -day workshop entitled “Investment Models for Investments into Broadband Access Infrastructure” on 13 and 14 May 2013. The objective of the workshop was to collect and transfer experiences of EU Member States in the application of different investment models into broadband infrastructure at the local and regional level on the basis of financing from available EU funds. More about the workshop is available in Chapter 8.5. EU Funds. The Cullen Forum on the electronic communications market was held on 30 and 31 October 2013 in Budva, Montenegro. The Forum represents a European Commission project on the monitoring of data on the development of the electronic communications market and information society in candidate countries and potential candidate countries for membership of the European Union and in the Republic of Croatia as the accession country. Since Croatia is now a Member State of the EU, this was the last meeting it attended.

Since July 2003 HAKOM represents the Republic of Croatia in the High Level Group for Internet Governance in the coordination of European views and actions for internet management.

BEREC

After accession of Croatia to the EU, HAKOM became an active member of BEREC, Body of European Regulators for Electronic Communications, which means that it started participating in the voting on all decisions adopted by BEREC at the plenary sessions taking place four times a year. Before the entry of Croatia into the EU, HAKOM had observer status in BEREC.

At the last plenary session held in December 2013., HAKOM was elected vice-president of BEREC. Regulatory authorities of all Member States of the EU recognized proactivity, expertize and vision demonstrated in the process of liberalization of the Croatian electronic communications market, its leading role in the region and a significant contribution of HAKOM's experts to the work of BEREC. HAKOM's experts participated in the development of Guidelines on international roaming that will enable to citizens of EU Member States to use services at lower prices.

The election of HAKOM's representative for vice-president, less than six months after HAKOM acquired full membership of BEREC, will enable Croatia to participate even more actively in the creation of preconditions for the establishment of the common European market for electronic communications. In creating those conditions, HAKOM will focus on preserving and further developing conditions on the Croatian market achieved through liberalization of the electronic communications market.

ITU

HAKOM's important role in the region was confirmed by an invitation to participate in several regional and international conferences where HAKOM's experts lectured.

At the invitation of the International Telecommunications Union (ITU) and the Ministry of Communications and Information Technology of Azerbaijan, HAKOM's representatives participated in a global conference dedicated to cooperation in the area of safety of digital data (Global Cybersecurity Cooperation: Challenges and Visions), which took place in Baku on 2 and 3 December 2013. The conference gathered many ministers and high representatives of state institutions from all continents and the organizers are, in addition to ITU and the Government of Azerbaijan, and the World Bank, the World Economic Forum, the European Parliament and Interpol.

CEPT

International cooperation and participation in the work of international institutions from the radio communications sector included the work of the Electronic Communications Committee which is an umbrella body developing joint strategies and regulation in electronic communications and coordinating the use of the RF spectrum for Europe. Several working groups were organized in 2013 within the ECC out of which the most important ones for Croatia were CPG-15 and TG6.

As part of preparations for the upcoming World Radiocommunications conference WRC -15, which will take place in Geneva in 2015, the ECC organized a working group CPG-15 (Conference Preparatory Group-15). CPG-15 is dealing with preparation and alignment of European attitudes related to the allocation of the RF spectrum for WRC-15. Global and regional allocation of the RF spectrum is defined at the WRC, including guidelines on future use of certain technologies. The alignment of joint views of CEPT administrations ensures a stronger approach at the global level and the protection of interests of European countries. For that reason HAKOM joined this working group and, in the period between 23 and 26 September 2013, it organized 3 meetings of the CPG-15. The meeting was attended by 110 representatives of regulators from the CEPT group of administrations, regional organizations (CITEL, RRC), ITU, industry and other international organizations (NATO, EBU, ESA, IARU).

There are 4 special project teams in CPG-15. The most important one is Project team D – PTD. PTD is in charge of the allocation of the additional spectrum for mobile communications (IMT; broadband internet access) and the allocation of the 700 MHz frequency band for the mobile service in Region 1 or the so-called „the second digital dividend“. Since the development of mobile technologies has the most important influence on the development of electronic communications market, HAKOM has been actively participating in the work of this project team.

In June 2013, the ECC established a working group TG6 (Long Term Vision UHF) aimed at researching the future of use of the UHF frequency band, with a special emphasis on the 470-694 MHz band. The TG6 working group is in charge of identification of development scenarios related to the development of this key part of this spectrum. In this part it must take into account technical and regulatory requirements, as well as economic, social and cultural issues related to this part of the spectrum. TG6 research is focused on the development of a framework for the most efficient future use of the RF spectrum and is therefore of exceptional importance for HAKOM.

In 2013, HAKOM participated in the work of the ECC Working Group Frequency Management - WGFM. The purpose of participation in the work of the mentioned group is continuous monitoring of development of use of the RF spectrum and the coordination of use of the RF spectrum in the RoC with international use at the level of CEPT.

Furthermore, HAKOM participated in the work of the WGSE (Working Group Spectrum Engineering) within the ECC. WGSE's main tasks include the development of guidelines for use and harmonization of the spectrum and the implementation of compatibility studies between different radiocommunications services within the same or different frequency band and the technical basis for the development of European reports, decisions and recommendations. Reports of the SE19 working group on fixed network, SRD/MG (Short Range Devices / Maintenance Group) and ECC PT1 and SE/ on mobile communications networks were followed last year.

The PT1 project team deals with issues related to IMT technology through the entire RF spectrum. Special attention is dedicated to possible future use of the second digital dividend (694-790 MHz) which is used in the majority of EU Member States for broadcasting, and HAKOM followed the work of this working group in 2013. All possible reallocations of this part of the spectrum will require detailed long-term planning and international cooperation to mitigate transfer between technologies to the greatest possible extent. PT1 also deals with the issue of use of mobile communications networks in airplanes and aircrafts and with their international coordination.

In 2013 HAKOM participated in the work of the working group for short-range devices (SRD) which are produced and which use the RF spectrum without the need for individual licences (alarms, medical devices, RFID, transport systems and communications equipment, such as WiFi). The industry showed significant interest for SRD frequency bands and it is necessary for more countries to have harmonized use of those parts of the RF spectrum. It is estimated that several million of SRD devices are sold in the EU every year.

Other

HAKOM's employees participate in numerous other international gatherings as authors, lecturers or panellists. During 2013, 38 HAKOM's representatives actively participated in different academic and expert conferences and working groups. A total of 45 works and presentations were published at academic conferences, expert gatherings and other events and one paper was published in the Telecommunications magazine.

The third meeting of the working group of countries of Central and South-eastern Europe was held in Bucharest (Romania) on 9 May 2013. The meeting was attended by representatives of eleven countries in the region, including Croatia. The topics discussed at the gathering included use and alignment of the digital dividend for mobile communications networks, and Croatian representatives shared their experience with the digital switchover and freeing of the frequency spectrum for the digital dividend.

HAKOM organized a special session on RF spectrum management at the international symposium ELMAR 2013 where papers from the radiocommunications and broadcasting sectors were presented. The Session entitled Spectrum Engineering was organized with a view to promoting the importance of efficient RF spectrum management, as a limited natural resource of the RoC, and linking the academic community and industry into electronic communications fields. Several papers authored by HAKOM's employees were presented at the session. These papers resulted from active participation of HAKOM's experts in the work of international working groups (in the first place within CEPT) and expert analyses and measuring conducted regularly to protect radiocommunications systems and ensuring the efficient use of the RF spectrum.

HAKOM also participated in the international symposium ConTEL 2013. (International Conference on Telecommunications) as a co-organizer of the workshop on regulatory challenges on the electronic communications market. The workshop consisted of two parts in which economic and legal issues of the digital divided were discussed as well as “on-line“ tools and M2M challenges. It also dealt with issues of protection of user data in electronic communications, factors influencing the development of broadband access in rural areas, state aid for the development of NGN networks, electronic issuing of licences (e-licences), use of HAKOMeter for increasing transparency in the context of network neutrality and M2M services as a growing market and consequences for the existing regulatory framework. Some presentations are a result of a multidisciplinary research project Looking to the Future within which HAKOM cooperates with Croatian universities for the third year in a row.

A workshop Digital Agenda Going Local was organized under the auspices of the 36th International Gathering MIPRO 2013, which was organized by the Ministry of Public Administration of the Republic of Croatia from 20 to 24 May 2013 in Opatija promoting the initiative EC Digital Agenda for Europe.

It is one of the seven key initiatives envisaged in the strategy Europa 2020 which is aimed at promoting and enabling the application of digital technology in everyday life and in business operations of companies. The conference was divided into two modules: Guidelines of the EC and the development of broadband access in the Republic of Croatia and Usefulness of Information and Communication Technologies for Society and a round table entitled „What does Croatia bring to the EU and what may be expected from the EU membership in the area of information and communication technology?“

An international conference entitled "Europeanization of public administration and policy: sharing values, norms and practices" organized by the International Political Science Association, ISPA, took place in Dubrovnik from 4 to 7 April 2013. The objective of the conference was to gather and connect experts that will discuss and exchange new experiences and knowledge related to current trends and development of public administration in the wider framework of European integration processes. The conference focused on various topics related to the development of European integrations and reform of public administration and procedures.

The tenth international conference on optical conferences, Fiber Week, took place in Supetar (island of Brač) from 23 to 25 April 2013. Fiber Week is the leading conference on the most recent research, development and implementation of optical technologies.

The fifth international science symposium EUROCON 2013 was held at the Faculty of Electrical Engineering and Computing (FER) in Zagreb between 1 and 4 July 2013. EUROCON is one of the leading international science conferences in the fields of energy, information and communication technologies and electronics organized by the biggest international engineering association IEEE. A total of 330 academic and expert papers were presented at the conference, 12 lectures, four panel discussions and two special sections.

The 21st international symposium SoftCOM 2013 took place in Split and Primošten from 18 to 20 September 2013. SoftCOM is an international conference on software, telecommunications and computer network organized by the University of Split and the Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, sponsored by the Institute of Electrical and Electronics Engineers (IEEE). The conference gathered scientists and experts from the entire world that represented their works with original results in all areas of the communications software, services and applications, telecommunications and computer networks.

An international conference entitled "Regulatory Activity in the Electronic Communications Sector" was organized part of the 20th INFOFEST in Budva from 30 September to 1 October. The organizers of this year's conference were the Agency for Electronic Communications and Postal Activity of Crna Gora (EKIP) and ITU. The conference, which dealt with the protection of users of public communications services, was attended by representatives of HAKOM and other regulatory agencies, ministries, operators of electronic communications, as well as representatives and experts from international organizations competent for regulation and policy of electronic communications.

The 31st symposium on new technologies in postal and telecommunications traffic PosTel 2013 was held at the Faculty of Transport in Belgrade, Serbia, on 3 and 4 December 2013. The symposium gathered around 400 participants, famous experts from the Republic of Serbia and countries of the region. The symposium was divided into three entities (Management of Processes in Postal and Telecommunications Traffics/ Postal Traffic - networks and services/ and Telecommunications traffic - networks and services) which included 41 lectures of experts from postal and telecommunications, and economic and legal sectors. The symposium also included a round table on consumer protection in postal and telecommunications traffic.

The 26th symposium on international electrical engineering on new technologies and the exhibition Days of Josip Lončar organized by the Zagreb Electrical Engineers Association (EDZ) took place from 5 to 8 May 2013 in Šibenik. The EDZ is a society organized with a view to promoting, developing and improving electrical engineering in Zagreb, gathering experts in the field of electrical engineering, promoting new knowledge and development and improving electrical engineering, and this symposium was only one of numerous activities of the Association. The work of the symposium was organized in 13 sessions and an introductory lecture where a total of 83 papers were presented, including round tables and an exhibition on current issues in the field electrical engineering.

A 27th international meeting “Planning and Design” was organized by EDZ in Zagreb from 6 to 9 September 2013 under the auspices of the Croatian Standards Institute. The objective of the conference was to familiarize participants with Croatian standards and with the alignment with Croatian regulations with EU directives. Designers and other participants of the meeting were informed about obligations and specific issues and about main issues in the design of projects in the field of construction, electrical engineering plants, industrial plants, electrical networks, communications infrastructure, optical installations, electrical installations electrical lighting, plants endangered by explosive atmosphere, fire protection, influence on the environment during building, technical protection, use and maintenance of electrical installations etc.

7.2 Domestic cooperation

In the course of 2013, HAKOM cooperated on a daily basis with actors on the market of electronic communications and postal services by resolving their requests, by organising public consultation on decisions which are important for market development, joint meetings, working groups and seminars.

HAKOM regularly cooperated with state bodies and ministries on joint activities and particular emphasis must be placed on cooperation with:

- MMATI,
- MCPP,
- Ministry of Foreign and European Affairs,
- Ministry of Defence,
- Ministry of Culture,
- Ministry of the Economy - State Inspector's Office
- Ministry of Public Administration,
- Agency for Electronic Media,
- Croatian Competition Agency (CCA),
- Central Office for Development Strategy and Coordination of EU Funds,
- Central Finance and Contracting Agency (CFCA),
- Croatian Standards Institute,
- Central Bureau of Statistics.

HAKOM actively cooperated with the Ministry of Physical Planning and Construction and units of local and regional self-government within a view to promoting investments into broadband access and building of an integrated infrastructure.

In 2013, HAKOM's employees have actively participated in several gatherings by participating at round tables and workshops and by presenting their activities. Furthermore, cooperation with universities, in particular with the Faculty of Electrical Engineering and Computing, must be stressed, as well as with the Zagreb Electrotechnical Society and the Croatian Chamber of Engineers and Electrical Engineering.

Among other things, HAKOM's employees actively participated in expert gatherings KOM 2013 (Conference on Electronic Communications Technologies and Standards in Information Technology), Days of Chartered Electrical Engineers, Symposium of Chartered Geodetic Engineers, Days of Electronic Media and Telekom Arena. Furthermore, HAKOM's employees also participated at the regional gathering *GDi Solution User Forum Spring 2013*, where the importance of electronic communications registers for market regulation in the RoC was discussed, including the implementation of GDi solutions in HAKOM.

HAKOM organized and participated in 6th Days of the Electronic Media, 19th Days of the Radio, 6th Days of Television, and 6th Days of the Internet. The Days of the Electronic Media are a traditional conference dealing with current topics of electronic media broadcasters that allows the broadcasters to communicate with regulators and representatives of public administration. The programme of the conference included lectures by HAKOM's experts in the area of frequency planning on the international coordination of radio stations in accordance with the Geneva agreements GE84 and GE06, and on local televisions in the Croatia and International Frequency Plan.

HAKOM's role in the protection of users and children is particularly important and has been recognized. HAKOM's competence and activities have been presented, among other things, at CARNet's user conference (CUC 2013) and at the conference entitled “116 Numbers for the

Protection of Children in Croatia" held on the occasion of the International Day of Prevention of Child Abuse.

8 HAKOM

8.1 Assistance programme

In 2013, HAKOM continued with activities concerning the allocation of state aid for high-speed broadband networks development in the areas of special state concern, hilly and mountain areas and on the islands (hereinafter: state aid): Activities are carried out pursuant to HAKOM's Programme for Internet and Broadband Development in Areas of Special State Concern, Hilly and Mountainous Areas and Islands (2011.) and in accordance with Measure 4 of the Implementation Programme for the Strategy for Broadband Development in the Republic of Croatia 2012 - 2013[24] The broadband ecosystem comprises the entire chain of broadband Internet access, which includes infrastructure for broadband access, broadband-based applications and services, and the necessary equipment for the realization of services and for use of Internet access. The aid programme was divided into three projects: access, equipment and services.

The objective and purpose of aid is the achievement of a balanced regional development, faster development of broadband, and connecting of target groups such as educational, health care and public institutions to the broadband network which represents a broadband ecosystem.

Access

In the first half of 2013, the control of infrastructure for target users from Ličko-senjska, Osječko-baranjska i Primorsko-goranska Counties constructed on the basis of state aid contracts from the first round of competitions was conducted, and state aid amounting to HRK 10,053,279.96 was paid to HT.

The second round of state aid competitions published in December 2012 was published and the award of aid was contracted in July 2013. A total of HRK 6,038,072.31 was awarded to VIPnet d.o.o. for Šibensko-kninska, Vukovarsko-srijemska i Zadarska Countes. A total of HRK 7,403,848.39 was awarded to HT for Požeško-slavonska i Splitsko-dalmatinska Counties. A total of HRK 1,285,039.83 was awarded to Pro-ping d.o.o. for Virovitičko-podravska county. A part of contracted state aid from the second round was controlled and paid by the end of 2013 amounting to HRK 5.087.812,66, and the remaining amount will be paid following the control of fulfilment of payment conditions during 2014.

Table 8.1. Contracted amounts of state aid for the building of broadband infrastructure

Tenderer	County	Contracted amount (Kn)
VIPnet d.o.o.	Bjelovarsko-bilogorska	1,865,270.59
	Dubrovačko-neretvanska	529,652.80
	Krapinsko-zagorska	169,128.71
	Sisačko-moslavačka	1,385,189.77
	Šibensko-kninska	842,523.08
	Vukovarsko-srijemska	1,000,300.14
	Zadarska	4,195,249.09
Hrvatski Telekom d.d.	Požeško-slavonska	972,412.11
	Splitsko-dalmatinska	6,431,436.28
Pro-Ping d.o.o.	Virovitičko-podravska	1,285,039.83
Total:		**HRK 18,676,202.40**

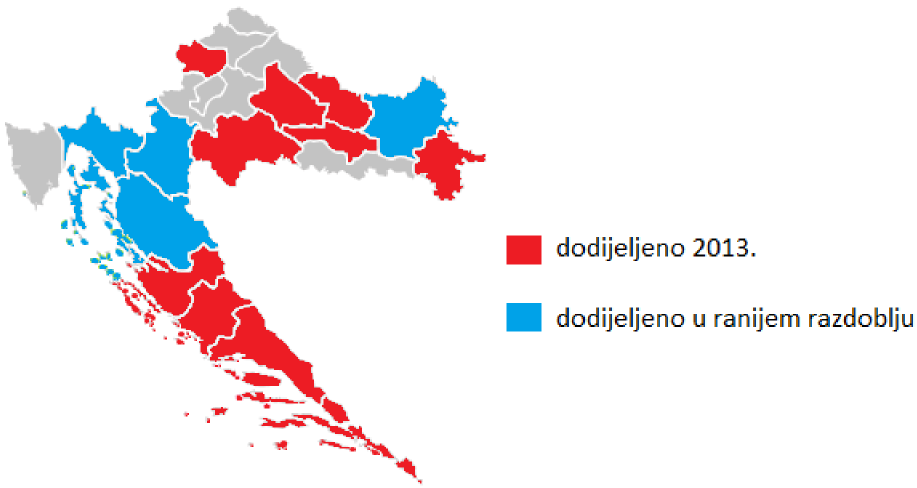
In early August 2013 a third round of tenders was invited and in late December a contract on the award of state aid for the building of infrastructure of broadband networks in areas of special state

[24] http://www.mmpi.hr/UserDocsImages/Strategija-DTV-novo%2010.pdf

concern, in mountain and hilly areas and on the islands for the Bjelovarsko-bilogorska, Dubrovačko-neretvanska, Krapinsko-zagorska and Sisačko-moslavačka Counties was signed totalling HRK 3,949,241.87 with the company VIPnet d.o.o.

Figure 8.1. shows areas, that is, counties for which state aid was awarded pursuant to HAKOM's Programme in 2013 and in the previous period.

Figure 8.1. Areas of awarded state aid



Services (applications)

In accordance with the Programme, HAKOM conducts tenders for the development and implementation of selected designs, selects contractors and contracts delivery and implementation of the application. Six public tenders were invited in 2013 for designs that had been previously selected through public invitations for the delivery of ideas for software applications and the purpose of which is to stimulate and harmonize the development of broadband in areas of special state concern, hilly and mountain areas and on the islands.

Response to both public tenders was significant and many designs were received. Their implementation will result in the improvement of quality of life in Croatia. A large number of designs (more than 200) are a clear indicator that the society recognized the importance of software applications, services and contents as main indicators for the development of broadband access.

The objective of public invitations was to collect designs for software applications and services supporting the development of the economy and quality of life in the Republic of Croatia, that is, supporting the development of education, health, agriculture, search and rescue, safety of citizens and services of e-Government.

Table 8.2. Contracted applications/services

Name of application	Contractor	Status
Adjustment of content to blind persons (www.zdravlje.hzjz.hr and www.hzjz.hr)	Manex d.o.o.	Completed
Informatizacija patronažnih sestara u RH	LED elektronika d.o.o.	Pending
Alerting fire-fighters	STORM Computers d.o.o.	Pending
Following of fire-fighting trucks vehicles and persons on interventions	Raptor d.o.o.	Completed
Books at the palm of one's hand	Bulaja naklada d.o.o.	Partially completed
Simulator for the calculation of cost-efficiency of building plants	Poslovanje 2 d.o.o.	Completed
Total Expo – virtual fair	Pardus d.o.o.	Completed
Teleradiology	Ericsson Nikola Tesla d.d.	Completed
A design of central website for access to information from public administration of the Republic of Croatia - Central State Portal	Globaldizajn d.o.o.	Completed
Development and establishment of a contents management system of central website for access to information from public administration of the Republic of Croatia - Central State Portal	Globaldizajn d.o.o.	Pending
Organization of a webinar - upgrading of the existing platform	HSM - informatika d.o.o.	Completed
Mobile application of use of e-textbooks/e-books	Lamaro digital d.o.o.	Pending
Personal therapist	BRADVA d.o.o.	Completed
ECDL online courses for independent learning	ALGEBRA d.o.o.	Pending
PLODORED - record of plant production	S Link, company for computer activities	Partially completed
Education of teachers in schools (TtT) and other employees of institutions of special interest related to basics of digital competences	Poslovanje 2 d.o.o.	Pending
Internet advertising for disabled persons in areas of special state concern, hilly and mountain areas and islands	Manex d.o.o.	Completed

Total value of the development of contracted applications listed in Table 8.2. amounts to HRK 4.6 million. New public tenders will be invited for the remaining selected designs during 2014.

8.2 e-Agency

Through the e-Agency programme, HAKOM is striving to provide quality public service to all participants on the postal and electronic communications markets by using modern IT tools and IT system. E-Agency relies on the ICT strategy of the Republic of Croatia and is a part of the e-business development strategy in the RoC. Implementation of e-Agency solutions enables all citizens, companies and organizations to do business with the operator in a simple and speedy manner with reduced costs. E-Agency has been developing intensively since 2010 and has been recognized by users of HAKOM's services. Although it has become an indispensable part of all main processes, further development is necessary to upgrade all interaction with users. Electronic business increases the availability of the regulator and makes public services more efficient and more attractive.

Several applications focused on improving business processes by using web-based technologies were implemented in 2013.

HAKOM published at its web portal an interactive map of areas of broadband availability with three categories of speed (for speed from 2 do 30 Mbit/s, from 30 Mbit/s do 100 Mbit/s and for speed 100 Mbit/s and higher) with the note that available speed is presented in such a manner that they may be achieved without significant investments, that is, more extensive work on electronic communications networks.

While preparing an overview of areas of broadband availability, HAKOM collected from operators data on broadband speed that is available at a certain house address, and on the basis of data collected in this manner, polygons were created representing areas of availability of broadband of certain speed in the entire territory of the RoC.

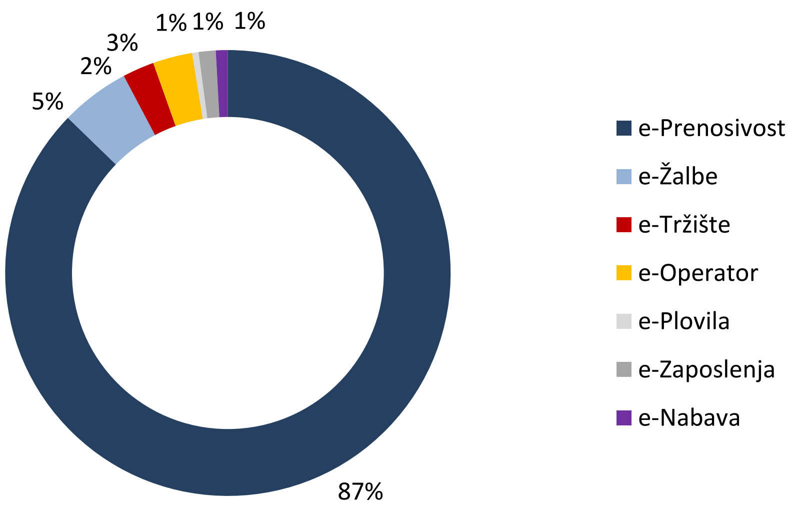
The interactive map of “Areas of Broadband Availability” will make it easier and speed up the development of projects for building next generation broadband access networks co-financed from the EU funds for units of local self-government and other interested investors.

E-Agency is a simple and modern portal with numerous web applications such as e-Vessels, e-Operator, Overview of Licenses, Public consultation, e-Complaints, e-Portability, e-Broadcasting, e-Microwave,, e-Market, e-Advice, e-Procurement, e-Careers. All e-applications have been realised on the basis of the principle of a unique application which is momentarily activated on the basis of user account parameters. The following e-applications have been developed on HAKOM's website:

- e-Vessels - the process of electronic submission of requests and granting of licences for devices using the RF spectrum on vessels; A web oriented application which integrates the functionality of a portal, Enterprise Resource Planning and Document Management System.
- Overview of Licences- overview of granted general and individual licences for use of the RF spectrum and licences for approved radio and telecommunications terminal equipment with a possibility for browsing according to several criteria,
- e-Procurement - provides an overview of all of HAKOM's procurement cases with the possibility to download tender documentation,
- e-Complaints – an application allowing a user, after registration, to file a complaint electronically and follow the status of the complaint The application was integrated with DMS and CRM systems in 2012 ensuring automatic registration of complaints, entry into the CRM and immediate notification of users.
- e-Certificates - a solution within the Document Management System which automates the process for the grating of the right-of-way certificate to infrastructure operators. It comprises the submission of the request, preparation of the certificate and its presentation on the portal.
- e-Portability - this application is the most popular one and it is used by users to follow the status of number porting and receive information about the current network, all in real time, all synchronized with the central number portability database;

- e-Market - application that allows the collection of information on the situation on the market, It is carried out electronically with the authorisation of users from a remote location by means of a web service or a web portal. The application enables flexible analysis of market developments,
- e-Operator - the application which supports the management of data on electronic communications operators. The central register of operators has been established as well as the database of the addressing and numbering space, the interface for entry of the necessary data by operators and HAKOM's employees has been made and data processing has been automated by means of software integration with other business systems used in the process.
- e-Careers - the application for online completion of forms for applications for employment at HAKOM. The solution exists on the website itself and offers the possibility for the publication of vacancies, enables prompt responses upon receipt of applications and browsing on the basis of several criteria.
- e-Broadcasting - the application is intended for radio broadcasters and operators providing the radio broadcasting service via a terrestrial network of broadcasters. It enables simpler and faster submission and resolution of applications for licenses for use of the radio-frequency spectrum. The procedure for the submission of applications and granting of licences is on average twice as fast than the traditional paper procedure.
- e-Microwave - an implemented application that significantly speeds up the business process of the submission of complaints and granting of licences, that is, of the authorizations for use of the radiofrequency spectrum in the microwave link,

Figure 8.2. An example of use of e-applications



8.3 Development of competences

One of HAKOM's strategic objectives is life-long learning which is based on continuous acquisition of knowledge and skills, appropriate attitudes and morality and the development of capacity for analysis, that is, the ability to analyse past events and predict future events.

The work and activities of HAKOM as a regulatory authority in the areas of permanent and fact technological changes representing challenges for all market participants are closely related to a certain number and educational structure of employees and requires the monitoring and assessment of complex issues in the area of electronic communications and postal and related legal and economic issues. In order to remain a modern organization susceptible to fast and frequent changes in markets that it regulates and capable of following changes in the development of technology and society, HAKOM continues to invest into its human resources as a basis for efficient regulation of a market of companies with highly motivated, highly educated and well-paid employees.

To be able to successfully participate in the creation of joint EU policies or use the available EU funds, HAKOM must strengthen its competitive advantages which is possible only through continuous learning process. The development of regulatory aspects in the world and in the EU is continuously followed through participation in international regulatory organizations, in conference and by reading literature in this area. In this manner, HAKOM is able to notice rules and peculiarities of the Croatian market, it recognises best practice of international, in particular European regulators, and defines a plan for the development of competences that relies on continuous cooperation with universities in the Republic of Croatia.

The approach to the development of competences that may be summed-up as life-long learning included in 2013 the professional training of HAKOM's employees through post-graduate studies, research projects, seminars, conferences, working groups, workshops and courses. HAKOM focuses on the upcoming issues and on issues that will influence the electronic communications market in the near future. The most important programmes aimed at increasing organization and individual regulatory capacity were the interdisciplinary post-graduate studies, the „Looking to the future“ programme and learning of foreign languages.

8.3.1 Interdisciplinary postgraduate studies

The fourth generation of HAKOM's employees was enrolled in the university interdisciplinary post-graduate study “Regulation of the Electronic Communications Market” in 2013. This course was launched by HAKOM in cooperation with FER, the Faculty of Economics and the Faculty of Law in Zagreb. The duration of the course is one academic year (two semesters) during which participants acquire knowledge and competences in economic, legal and technological aspects of market regulation and the ability to apply the regulatory framework and for the resolution of regulatory problems. Upon completion of the course, students will acquire the title of a Specialist in electronic communications market regulation.

Together with the fourth generation, a total of 30 of HAKOM's employees took the course, out of which the fourth generation of students are five employees who have fulfilled the requirements of the competition and the course, including a topics for the thesis which is of interest for HAKOM.

8.3.2 “Looking to the Future” project

In late 2010, in cooperation with the academic community, the Faculty of Electrical Engineering and Computing of the University of Zagreb, the Faculty of Electrical Engineering, Mechanical Engineering and Shipbuilding in Split, the Faculty of Electrical Engineering in Osijek and the Faculty of Economics and Business in Zagreb, HAKOM started a multidisciplinary research project "Looking to the Future". The implementation of the programme is planned for three years with a view getting an easier overview of all services and the manner of their regulation both for HAKOM and for participants on the electronic communications market. Other participants on the electronic communications market (operators and equipment producers) were invited to participate in the projects thus creating a forum that will be able to deal with the challenges expecting this market in the next 5-10 years. In addition to operators, the following equipment suppliers and integrators participated in the project: Ericsson Nikola Tesla, an Nokia Systems Networks.

General topics for the duration of the project:

A. Development of electronic communications sector up to 2016 Technological, business and market development stimuli.
B. Next Generation Network, architecture and technology of access and core networks. Internet, migration towards IP networks, IMS (IP Multimedia Subsystem) Relation between network operators and service providers in NGN. Development of NGN in the world and in Europe, migration strategies, plans of Croatian network operators.
C. Theoretic postulates of NGN regulation. The analysis of regulatory aspects of introduction and development of next generation networks (competition, social needs, limited resources, net neutrality), problems in the initial stage and the transitional period. Value chain of contents, services and networks, market participants and their relations, sustainable competition.
D. Policy for building elements of communications infrastructure as part of international, national, regional and local infrastructure projects, in particular in the energy and transport sectors. Influence of the electronic communications sectors on overall social and economic development. Situation in the world, Europe and the RoC.

In addition to general topics, the project also has specific topics agreed upon at the beginning of every year. The specific topics that were covered in 2013 include the following:

- Services to users of fixed, nomadic and mobile services, value added services, location-dependent services and location services, access to emergency services. Fixed-Mobile convergence, services on the retail market, representation in the world, in Europe and in the Republic of Croatia. Principles of regulation of converged services.
- Services in the NGN The quality of point-to-point services, principles of management and charging of services in the NGN. Protection of users in the IP network, privacy and security in the NGN, lawful interception in the NGN. Interconnection in the NGN, collection concepts, influence on business operations of network operators, influence on wholesale and retail prices. Development of Internet and IP-based services, in particular VoIP (Voice over IP) and IPTV (IP television) with a special emphasis on the quality of service.
- Network neutrality and alignment of solutions at the global level. Services on platforms and outside the platforms.
- The concept of the Croatian cloud computing ecosystem and new services (M2M - Machine-to-Machine).
- Business models in infrastructure with a special emphasis on the aspect of the public-public or public-private partnership. Building of the access and core networks, interoperability of networks, services and protocols in the transitional period from the introduction of NGN. Procedures for the analysis of the worthiness of investments into the access and core NGN networks

Project results are published on HAKOM's website and are available to all interested participants on the electronic communications market. The results for 2013 were presented at a special session during the Softcom conference which took place in Split.

8.3.3 Foreign languages

Considering HAKOM's policy which includes “continuous improvement of work procedures, regulatory knowledge and skills of our employees with a view to creating the best solutions for the electronic communications and postal services market in general” HAKOM continued with the organization of foreign language courses in 2013. The need to improve language skills arises from the need for further training and development in linguistic areas necessary for the realization of HAKOM's policy and for active participation in international regulatory organisations, at conferences and for reading literature in HAKOM’s field of competence.

In 2013, a total of 20 employees participated in foreign language courses.

8.4 ISO 9001 quality management system

The first supervisory audit was carried out in October 2013 by the certification company “Bureau Veritas Croatia”, and the results of the audit will serve as guidelines for further improvement of the quality system. The above-mentioned supervisory audit was carried out further to the 2012 re-certification audit when HAKOM's quality certificate 9001:2008 was extended for another 3 years, in addition to the regular carrying out of supervisory audits.

Taking into account that, in accordance with ISO 9001:2008, an organization must strive towards continuous improvement of its business procedures, HAKOM has been continuously working on the improvement of its business procedures, their shortening and improving, with a view to increasing user satisfaction by satisfying their requirements. For that reason, HAKOM's activities in 2013 related to the quality management system were focused on further improvements of the system.

As it was already mentioned, quality management is closely related to user satisfaction of all inserted parties, and employees. HAKOM has been systematically maintaining and developing successful relations towards its employees and quality has been included in all processes and into organizational culture.

8.5 EU funds

Since the Republic of Croatia has committed itself to a balanced and clear broadband infrastructure development and broadband services development with the adoption of the Strategy for Broadband Development in the Republic of Croatia 2012- 2013, and bearing in mind that one of HAKOM's strategic activity in 2013 was the promotion of investments into broadband access building, in cooperation with TAIEX, HAKOM prepared a workshop on models for investments into broadband access infrastructure. The workshop took place on 13 and 14 May in Zagreb.

The objective of the workshop was to collect positive experiences from EU Member States on the application of different investment models into broadband infrastructure at the local and regional level and to gain insight into the possibility of use of EU funds and other financing instruments for building broadband infrastructure. On the first day of the workshop, experts from EU Member States, Finland, Latvia, Lithuania, Spain and Great Britain spoke about the Digital Agenda for Europe and about results of conducted measures, the possibilities for financing broadband access network by the European Investment Bank (EIB), new EU Guidelines on state aid aimed at developing broadband access networks, models of public and private partnership. Topics discussed at the second day of the workshop included the exchange of experiences of successful projects for broadband access networks and investments into infrastructure for broadband access and acquired project implementation experiences.

The two day workshop was attended by 40 participants, including, in addition to HAKOM's employees, representatives of the Ministry of Maritime Affairs, Transport and Infrastructure, Ministry of the Economy, Ministry of Culture, Ministry of Regional Development and EU Funds, Ministry of Public Administration, city of Zagreb, city of Knin, city of Rijeka and city of Buzet, as well as representatives of several nongovernmental organizations and associations.

IPA 2009 - Component II (Crossborder cooperation) - SEE Digi.TV

The signature of a grant agreement with the Agency, on the basis of an European pre-accession programme
for regional development of the Republic of Croatia on 28 December 2011 ensured funds for the beginning of implementation of the project South East European Digital Television (*SEE Digi.TV*[25] (hereinafter: See Digi.TV). Partners in the project include HAKOM and EMA and 13 other partners from 9 countries in the region: Austria (RTR), Hungary (IVSZ, NMHH-observer), Italy (INFORMEST i AGCOM), Slovenia (APEK i SINTESIO), Albania (NCRT), Bosnia and Herzegovina (RAK), Macedonia (SRD), Montenegro (BAM i EKIP) and Serbia (RBA). The total value of the project is EUR 1,987,230.50, out of which EUR 140,959.97 was allocated to HAKOM and EMA for the purpose of joint implementation of the project in the RoC:. The EU was co-financing project activities with 85 percent of funds from the pre-accession instrument (IPA) and 15 is HAKOM's and EMA's share.

The general objective of the SEE Digi.TV project is to implement a common and harmonized territorial development connected with the process of digital switchover and prevention of possible negative social, economic and technical consequences in case of failure of this process at the national or regional level. The digital switchover in the region of South-eastern Europe is a far more complicated process than in other European countries due to great differences in infrastructure, legislative framework, technology, economy, social and institutional differences. The harmonized digitalization opens the door for the diversity of services of information and communication technology, which significantly contributes to sustainable development in the region and reduces the digital gap between countries participating in the project and in relation to EU Member States.

HAKOM found its interest in the areas of implementation of the project by taking examples of best practice from the region and participating in the harmonization of important areas of regulation related to digital switchover, efficient use of the digital dividend and further development of new broadcasting and communications services in the RoC and in the region.

Project results include guidelines the objective of which is to assist the countries in the region to improve their legal framework and ensure "painless" digital switchover in technical and economical sense, and to ensure preconditions for continuous development and introduction of new broadcasting and communications services for the benefit of the entire society. An important component of the project is the raising of public awareness about digitalization. A Communication Plan was prepared for that purpose and three brochures were disseminated.

The assessment of the technical framework included the description of the existing available technologies for terrestrial TV broadcasting and sound broadcasting and offered additional information for laboratory and field measuring and corresponding legislation. Regional guidelines for the development of switchover strategies and further development of digital television with the possibility for use the digital dividend for the introduction of new broadcasting and communications services were prepared for every country.

A total of 11 meetings of working bodies established within SEE DIgi.TV took place with a view to carrying out activities and delivery of project results, three international conferences and one domestic workshop on digital television and one domestic workshop on digital television for stakeholders on the Croatian regional market.

[25] http://www.hakom.hr/default.aspx?id=989

The SEE Digi.TV project was successfully completed in Croatia on 29 April 2013 and the general and financial reports of the project were approved by the Agency for regional development on 15 November 2013.

The implemented activities and results presented within the project are available on the official website www.see-digi.tv .

8.6 Staff

HAKOM consists of the Council and of the administrative service. HAKOM is managed by the Council of HAKOM which consisted of five members at the end of 2013, including the president and deputy president of the Council. The administrative service carries out administrative and technical tasks and it is governed by a Director appointed by the Council. At the end of 2013, HAKOM employed 172 people.

Figure 8.3. Structure of employees according to level education and title

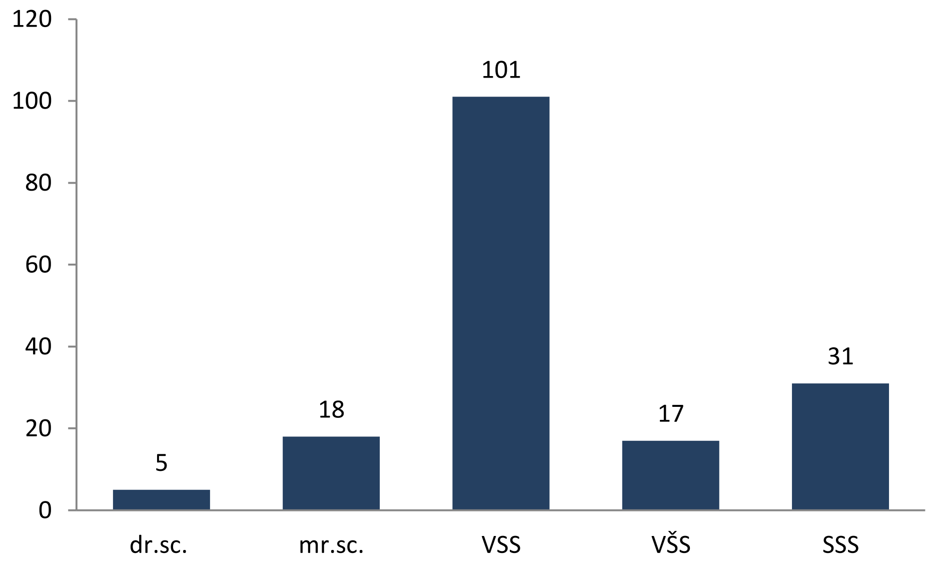


Figure 8.3 shows the structure of employees according to level of education Thirteen percent of HAKOM's employees have completed postgraduate studies in electrical engineering, transport, legal or economic sciences (PhD or master's degree). It is obvious that only 18 percent of employees have secondary school education.

Figure 8.4. Structure of employees according to profession

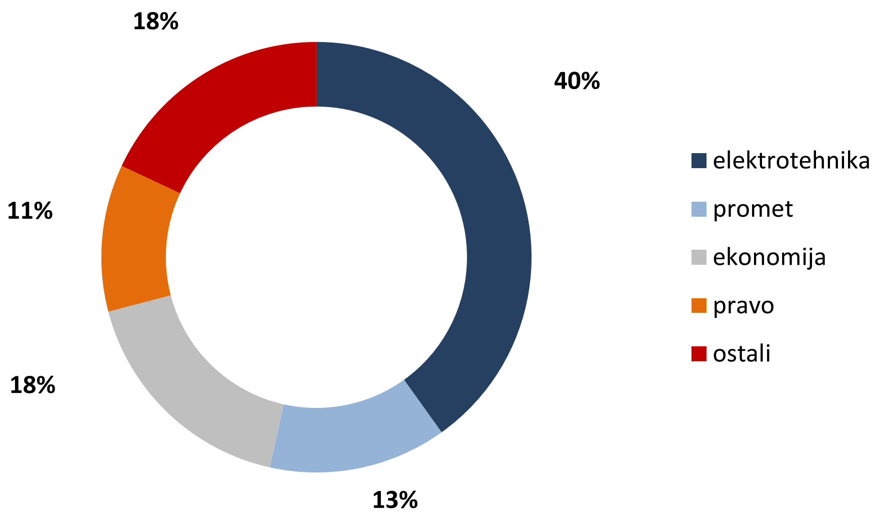


Figure 8.4. shows the structure of employees according to profession Since HAKOM's main activity is the regulation of electronic communications and postal services markets, which requires engineering knowledge and skills, it is not surprising that electoral engineers make up 40 percent of staff, followed by economists who make 18 percent, lawyers with 14 percent, transport engineers with 13 percent, lawyers with 11 percent and 18 percent of staff with other professions.

Figure 8.5. Structure of employees according to gender

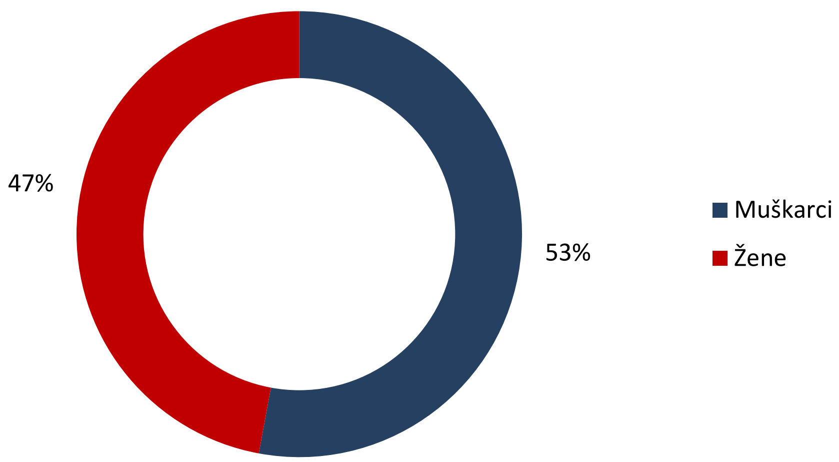


Figure 8.5 shows the percentage of workers per gender which shows that HAKOM pays special attention to non-discrimination during employment. 53 percent of staff are men, and the remaining percentage are women.

Figure 8.6. Structure of employees according to age

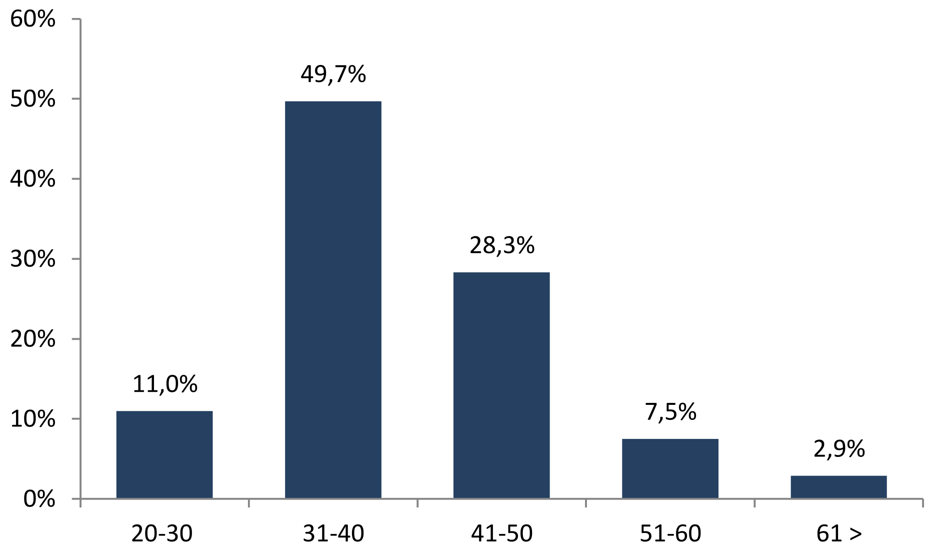
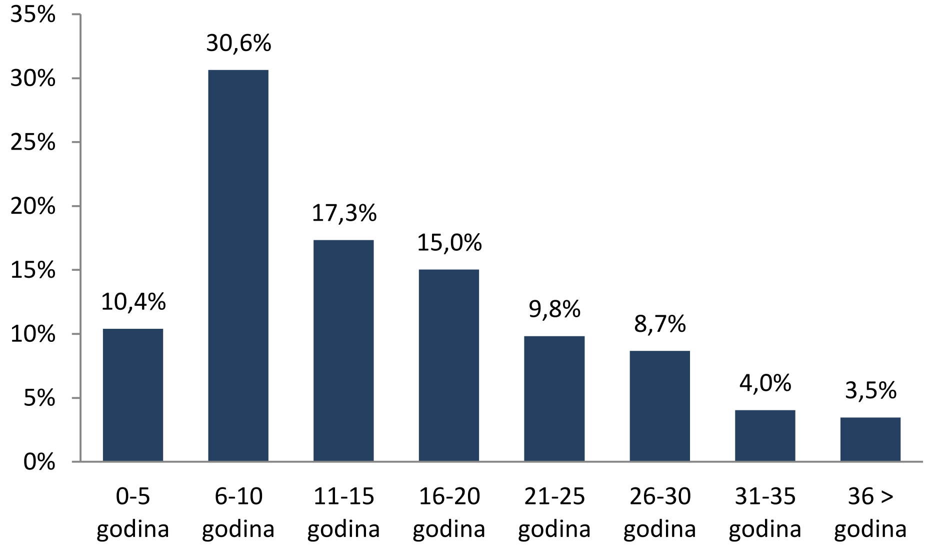


Figure 8.7. Structure of employees according to years of experience



It is obvious from Figure 8.6 and 8.7 that the majority of employees are young with experience in activities under HAKOM's competence

9 FINANCIAL AND FINAL STATEMENT

9.1 Legislation

HAKOM applies legislation on non-profit organisations. The accounting of non-profit organisations is laid down by the Regulation on the accounting of non-profit organisations and it is based on generally accepted accounting principles of accuracy, authenticity, reliability and single recording of positions. Revenue and expenditure is shown according to the principle of occurrence of events regardless of collection or payment.

The ECA prescribes separate recording of accounting events related to electronic communications and postal services. Revenue, expenditure and business results for the electronic communications and postal services sectors are separated in the financial and final statements. The final statement consists of the analysis of revenue, expenditure and surplus revenue, the analysis of surplus of collected funds, the balance sheet as of 31/12/2013, the analysis of investments and analysis of revenue of the State Budget of the Republic of Croatia.

The ECA prescribes that HAKOM will transfer the surplus of funds in relation to the annual financial plan to the following calendar year. The Ordinance on payment of fees for the carrying out of tasks by HAKOM prescribes the amount and manner of payment of fees to HAKOM.

The ECA prescribes that HAKOM issues invoices on behalf and for the account of the State Budget. State Budget funds are kept in the off balance sheet records per vendors and issued invoices.

9.2 Revenue

Table 9.1. Revenue earned in 2013 (in HRK)

	DESCRIPTION	Plan for 2013	Realised in 2013	Index (%)
1	Revenue from frequency fees	44,243,032	61,215,442	138
2	Revenue from fees for the carrying out of other HAKOM's activities	35,589,147	30,184,762	85
3	Revenue from fees for use of addresses and numbers	6,778,885	6,706,357	99
4	Revenue from annual fees for the carrying out of activities in the postal services sector	4,745,233	3,661,967	77
5	Revenue from EU pre-accession funds	370,000	143,500	39
6	Other revenue	2,500,000	4,359,358	174
	TOTAL	**94,226,297**	**106,271,386**	**113**

Funds for the carrying out of HAKOM's activities in 2013 were ensured in the following manner:

- for the electronic communications sector, on the basis of the approved HAKOM's annual financial plan from the fee for the use of addresses and numbers, fees for the use of the RF spectrum, fees for the carrying out of other HAKOM's tasks, fees for compliances, revenue from assets and revenue from applied and selected projects from pre-accession funds.
  Total revenue in the electronic communications sector for 2013 amounted to HRK 102,609,419.

- For the postal services sector, on the basis of the approved HAKOM's annual financial plan, as a percentage of the total annual gross revenue earned in the previous calendar year by providers of postal services.
  Total revenue in the electronic communications sector for 2013 amounted to HRK 3,661,967.

Figure 9.1. Earned revenue in 2013 compared to the annual financial plan (in HRK)

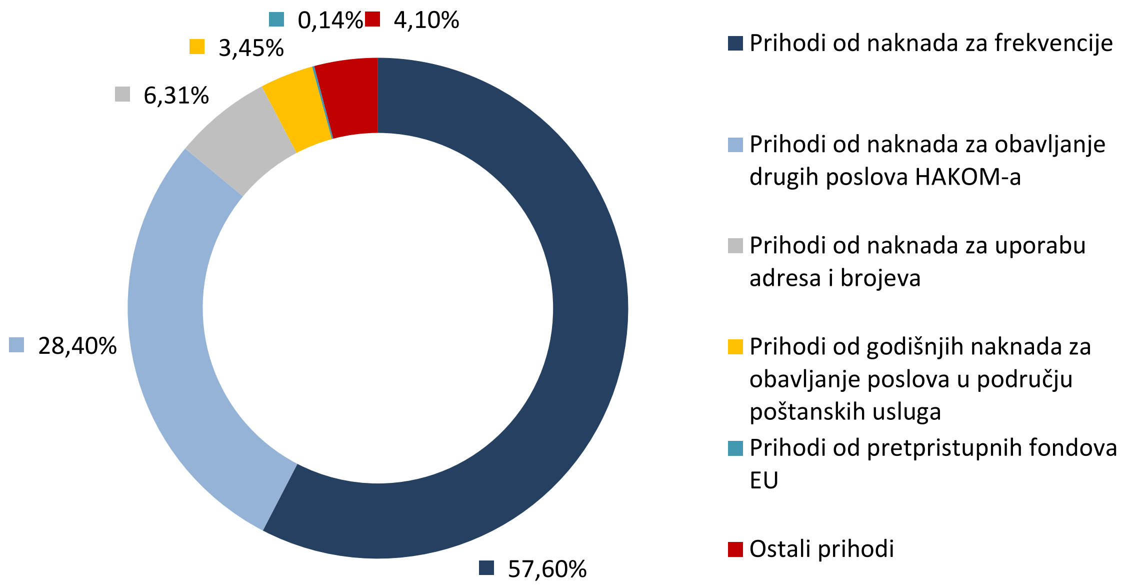


Table 9.2. Earned revenue in 2013 compared to the previous year (in HRK)

	DESCRIPTION	Realised in 2011	Realised in 2012	Realised in 2013
1	Revenue from frequency fees	62,209,619	60,866,955	61,215,442
	Index		98 %	101 %
2	Revenue from fees for the carrying out of other HAKOM's activities	37,247,532	31,761,807	30,184,762
	Index		85 %	95 %
3	Revenue from fees for use of addresses and numbers	6,938,862	6,797,519	6,706,357
	Index		98 %	99 %
4	Revenue from annual fees for the carrying out of activities in the postal services sector	4,332,308	3,814,989	3,661,967
	Index		88 %	96 %
5	Revenue from EU pre-accession funds	2,234,548	1,272,461	143,500
	Index		57 %	11 %
6	Other revenue	2,462,315	5,421,228	4,359,358
	Index		220 %	80 %
	TOTAL	**115,425,184**	**109,934,959**	**106,271,386**
	Index		**95 %**	**97 %**

Revenue from frequency fees

Revenue from frequency fees exceed by 47% percent the planned amounts. The remaining available RF spectrum in the 790-862 MHz band was allocated in 2013 (the digital dividend) to two mobile network operators (HT and VIPnet) following a public auction. Also, further development and increased use of broadband technologies increased the need for transfer capacity, resulting in greater than planned use of the RF spectrum used for microwave links. As a result, revenue from the radiofrequency spectrum is much higher than planned.

RF spectrum management is the subject of Chapter 2.1 of the Annual report.

Revenue from fees for the carrying out of other HAKOM's activities

The fee for the carrying out of other HAKOM's activities is expressed as a percentage of total annual gross revenue which was earned by operators in the previous calendar year for the provision of electronic communications networks and services on the market.

The total amount of revenue depends on the annual prescribed percentage, the number of providers of services and the total annual gross revenue. The amount of the prescribed percentage decreases every year on the basis of the Ordinance on the payment of the fees for carrying out of HAKOM's tasks and

The fall in revenue from the carrying out of other HAKOM's activities is mostly caused by the fall in annual gross revenue.

Table 9.3. The amounts of prescribed percentages for the electronic communications markets

Year	2009	2010	2011	2012	2013	2014
Percentage	0.32 %	0.29 %	0.28 %	0.25 %	0.25 %	0.20 %

Since 2014 pursuant to the Ordinance on payment of fees for carrying out of tasks of HAKOM, the fee for the carrying out of other HAKOM's tasks, expressed as a percentage of total annual gross revenue earned by operators in the previous calendar year during provision of the activity of electronic communications and services on the market, was reduced by 0.20 percent. It is also prescribed that the fee must be paid only by those operators that earned gross revenue exceeding HRK 1,000,000 in the previous calendar year.

Revenue from fees for use of addresses and numbers

The earned revenue from fees for use of addresses and numbers is at the planned level. Differences in this revenue from years to years are insignificant.

Addressing and numbering space management is the subject of Chapter 2.2 of the Annual Report.

Revenue from fees for the carrying out of activities in the postal services sector

Providers of postal services are obliged to pay the annual fee for the carrying out of HAKOM's activities in the postal services sector as a percentage of the total annual gross revenue earned from the provision of postal services in the previous calendar year. The calculation and the amount of the fee as well as the manner of payment are laid down in the Ordinance on payment of fees for the carrying out of tasks by HAKOM.

The total amount of revenue depends on the annual prescribed percentage, the number of providers of services and the total annual gross revenue. The amount of the percentage is decreased every year on the basis of the Ordinance on the payment of the fees for carrying out of HAKOM's tasks and the number of providers of services and the annual revenue are planned on the basis of results of the previous year.

Table 9.4. The amounts of prescribed percentages for the postal services market

Year	2010	2011	2012	2013	2014
Percentage	0.29 %	0.28 %	0.25 %	0.25 %	0.20 %

In 2011, revenue from annual fees for the carrying out of activities in the postal services sector amounted to HRK 4,332,308. In 2012, revenue from annual fees for the carrying out of activities in the postal services sector amounted to HRK 3,814,989. Further fall in this revenue was recorded in 2013 and the amount of the prescribed percentage of the total annual revenue earned from the provision of postal services remained unchanged. In 2013, revenue from annual fees for the carrying out of activities in the postal services sector amounted to HRK 3,661,967.

Since 2014, pursuant to the Ordinance on payment of fees for carrying out of tasks of HAKOM, the fee for the carrying out of other HAKOM's tasks, expressed as a percentage of total annual gross revenue earned by operators in the previous calendar year, was reduced by 0.20 percent. It is also prescribed that the fee must be paid only by those operators that earned gross revenue higher than HRK 1,000,000 in the previous calendar year.

Postal services market is discussed in Chapter 3 of the annual report.

Revenue from EU pre-accession funds

Revenue from pre-accession funds of the EU was insignificant in 2013. The SEE Digi TV project was completed in 2013.

The use of EU pre-accession funds is discussed in Chapter 8.5 of the annual report.

Other revenue

Table 9.5. Other realized revenue (in HRK)

	DESCRIPTION	Realised in 2012	Realised in 2013	Index
1	Revenue from financial assets	4,154,889	2,923,257	70
	- interest on term deposited funds and funds at sight	2,870,181	2,107,418	73
	- revenue from lawful interest rates	1,284,549	759,344	59
	- positive exchange rate differences	159	56,495	35,531
2	Revenue from damages and refunds	518,370	889,695	172
3	Revenue from sales of long-term assets	129,951	193,543	149
4	Other unmentioned revenue	618,018	352,863	57
	TOTAL	**5,421,228**	**4,359,358**	**80**

Other revenue is planned amounting to HRK 2,500,000. The realization of this revenue is significantly higher than planned. The realization of exceptionally high revenue from financial assets is achieved by term deposits of available funds.

Revenue from compensation for damage and refunds amounting to HRK 889,695 consists of HRK 649,035 in revenue on the basis of compensation for damage and HRK 240,660 revenue from refunds (BEREC, HZZO, Cullen and the European Commission).

Revenue from sales of long-term assets refers to four sold vehicles, three of make Citroen C4 and one Nissan Pathfinder. All four vehicles were sold to bidders who offered the highest price.

Other unmentioned revenue consists of revenue from compensations in nature, revenue from technical inspections and special authorizations.

9.3 Expenditure

9.3.1 Total HAKOM's expenditure per sectors

HAKOM's total expenditure in 2013 amounted to HRK 103,913,041.

Table 9.6. Total revenue - comparison with 2012 (in HRK)

	2012	2013	Index
Revenue in the electronic communications	86,224,332	82,710,917	96 %
Revenue in the postal services sector	2,867,598	2,444,310	85 %
Expenditure for capital donations	7,282,117	18,757,814	258 %
Total	**96,374,047**	**103,913,041**	**108 %**

Total HAKOM's expenditure in 2013 was 8 percent higher than HAKOM's total expenditure in 2012 Expenditure in electronic communications in 2013 was 4 percent lower compared to 2012 Expenditure in the area of postal services was 15 percent lower compared to 2012

Table 9.7. Total expenditure - realization according to plan (in HRK)

	2013 Plan	2013	Index
Revenue in the electronic communications	92,595,578	82,710,917	89 %
Expenditure in the postal services sector	4,677,133	2,444,310	52 %
Expenditure for capital donations	85,021,769	18,757,814	22 %
Total	**182,294,480**	**103,913,041**	**57 %**

Out of the total expenditure for the **electronic communications sector,** HRK 36,642,239 refers to employee expenses, HRK 28,305,513 refers to material expenditure, HRK 17,252,874 refers to expenditure from depreciation, HRK 73,238 refers to financial expenditure, HRK 74,914 refers to current donations and HRK 362,139 refers to other expenditure.

Out of the total expenditure for the **postal services sector,** HRK 1,607,490 refers to employee expenses, HRK 824,282 refers to material expenditure, HRK 9,761 refers to expenditure from depreciation, HRK 1,528 refers to financial expenditure, HRK 74,000 refers to current donations and HRK 1,249 refers to other expenditure.

Capital donations represent expenditure for the Programme for Internet and Broadband Development in Areas of Special State Concern, Hilly and Mountainous Areas and Islands and support for the development of broadband infrastructure for connecting central and regional schools on the islands and for the establishment of distance learning, as well as for the purposes of maintenance and repair of equipment and for procurement and maintenance of new equipment for the existing and new projects on the islands and in other geographically remote areas.

9.3.2 Total HAKOM's expenditure according to accounts from the accounting plan

Total **employee expenditure** is 11 percent lower than approved in HAKOM's annual financial plan. There was a slight increase in expenditure for salaries in kind, other expenditure for employees and contributions for employment compared to what was planned.

Other employee expenses include retirement bonuses, financial aid in case of death of a close family member, aid to women who have given birth and presents for employee's children on special occasions.

Total employee expenditure 16 percent lower than realized in 2012

Total **material expenditure** is 20 percent lower than approved in HAKOM's annual financial plan. Only three accounts under material expenditure are higher than planned, including: 4212 fees for travel expenses by 40 percent, 4255 compensations to other unemployed persons by 3 percent and 4263 energy by 1 percent

Total material expenditure was identical to 2012.

Travel expenses depend on transportation costs and on where the worker lives or stays. Expenditure for rent and lease depends on the exchange rate for euro.

Compared to the approved annual financial plan, business trip expenditure is lower by 17 percent, expenditure for professional training of employees by 49 percent, expenditure for post and transportation services by 30 percent, expenditure for services of current and investment maintenance by 24 percent, expenditure for promotion and information services by 50 percent, expenditure for intellectual and personal services by 58 percent, expenditure for computer services by 24 percent, expenditure for supplies and energy by 17 percent and other expenditure by 13 percent.

Out of total material expenditure, HRK 3,897,594 refers to reimbursements to employees, HRK 8,164 refers to compensation of costs to members of representative and executive bodies, HRK 61,825 refers to compensations to external contractors, HRK 21,921,137 refers to expenditure for services, HRK 2,029,834 refers to expenditure for material and power, and HRK 1,211,241 refers to other expenditure.

Total **financial expenditure** is 10 percent lower than approved in HAKOM's annual financial plan.

Donations include current and capital donations. Current donations are at the level approved by the annual financial plan.

Capital donations do not represent expenditure related to the carrying out of regular HAKOM's activities and are not financed from HAKOM's regular revenue. Funds for the coverage of this expenditure are included under surplus funds. The surplus funds are discussed in the Chapter 9.6. These funds are on a separate giro-account increased by the regular interest rate on a vista funds.

9.3.3 HAKOM's realized revenue compared to the annual financial plan

The Table below shows expenditure realized in comparison with HAKOM's annual financial plan in total and then separately for the electronic communications sector and separately for the postal services sector.

Table 9.8. HAKOM's realized expenditure in 2013 compared to the annual financial plan (in HRK)

Class	Subgroup	Section	TITLE	PLAN FOR 2013	REALIZATION 2013	INDEX
41			Employee expenses	42,837,811	38,249,729	89
	411		Salaries	36,217,218	32,118,758	89
		4111	Salaries for regular work	35,742,218	31,735,629	89
		4112	Payment in kind	365,000	380,977	104
		4113	Payments for overtime work	110,000	2,152	2
	412		Other employee expenses	1,180,000	1,210,157	103
		4121	Other employee expenses	1,180,000	1,210,157	103
	413		Contributions on salaries	5,440,593	4,920,814	90
		4131	Contributions for health insurance	4,871,041	4,343,102	89
		4132	Contributions for employment	569,552	577,712	101
42			Material expenditure	36,290,900	29,129,795	80
	421		Reimbursements to employees	4,995,800	3,897,594	78
		4211	Business trips	2,251,800	1,870,347	83
		4212	Travel expenses	700,000	979,936	140
		4213	Professional training of employees	2,044,000	1,047,311	51
	422		Reimbursement of costs to members in commissions and similar	20,000	8,164	41
		4221	Reimbursement of costs to members in commissions and similar	20,000	7,797	39
		4222	Reimbursement of business trip costs	0	367	-
	424		Compensations for external associates	68,000	61,825	91
		4241	Compensations for carrying out of activities	68,000	61,825	91
	425		Expenditure for services	27,372,925	21,921,137	80
		4251	Telephone, mail and transportation services	1,770,000	1,236,887	70
		4252	Services of current and investment maintenance	2,598,375	1,975,931	76
		4253	Promotion and information services	670,000	332,920	50
		4254	Utility services	1,100,000	1,084,142	99
		4255	Leases and rents	10,300,000	10,559,507	103
		4256	Health and veterinary services	420,000	412,615	98
		4257	Intellectual and personal services	5,044,050	2,101,090	42
		4258	IT services	3,570,500	2,373,269	66
		4259	Other services	1,900,000	1,844,776	97
	426		Expenditure for material and power	2,437,675	2,029,834	83

		4261	Office supplies and other material expenditures	942,675	626,946	67
		4263	Energy	1,310,000	1,316,715	101
		4264	Small inventory and car tyres	185,000	86,173	47
	429		Other unmentioned material expenditure	1,396,500	1,211,241	87
		4291	Insurance premiums	1,011,500	992,537	98
		4292	Entertaining	155,000	93,840	61
		4293	Membership fees	205,000	119,533	58
		4295	Other unmentioned material expenditure	25,000	5,331	21
43			Depreciation expenditure	14,600,000	17,262,635	118
	431		Depreciation	14,600,000	17,262,635	118
		4311	Depreciation	14,600,000	17,262,635	118
44			Financial expenditure	83,000	74,766	90
	443		Other financial expenditure	83,000	74,766	90
		4431	Banking services and payment transaction services	49,000	48,264	98
		4432	Negative exchange rate differences and currency clause	19,500	19,223	99
		4433	Penalty interest	1,000	187	19
		4434	Other financial expenditure	13,500	7,092	53
45			Donations	85,096,769	18,832,728	22
	451		Current donations	75,000	74,914	100
		4511	Current donations	75,000	74,914	100
	452		Capital donations	85,021,769	18,757,814	22
		4521	Capital donations	85,021,769	18,757,814	22
46			Other expenditure	3,386,000	363,388	11
	461		Fines, penalties and damages	33,000	13,628	41
		4611	Compensation for damages to legal and natural persons	30,000	7,070	24
		4612	Penalties, storage charges and other	0	6,558	-
		4614	Agreed fines and other compensations for damage	3,000	0	0
	462		Other unmentioned expenditure	3,353,000	349,760	10
		4621	Value not written-off and other expenditure from alienated and depreciated long-term assets	100,000	51,306	51
		4622	Expired debts	3,200,000	278,573	9
		4623	Expenditure for other taxes	29,000	19,881	69
		4624	Other unmentioned expenditure	24,000	0	0
			TOTAL	**182,294,480**	**103,913,041**	**57**

Table 9.9. HAKOM's expenditure in the electronic communications sector in 2013 compared to the annual financial plan (in HRK)

Class	Subgroup	Section	TITLE	PLAN FOR 2013	REALIZATION 2013	INDEX
41			Employee expenses	40,425,678	36,642,239	91
	411		Salaries	34,191,838	30,803,427	90
		4111	Salaries for regular work	33,766,838	30,437,513	90
		4112	Payment in kind	325,000	363,761	112
		4113	Payments for overtime work	100,000	2,152	2
	412		Other employee expenses	1,100,000	1,119,642	102
		4121	Other employee expenses	1,100,000	1,119,642	102
	413		Contributions on salaries	5,133,840	4,719,171	92
		4131	Contributions for health insurance	4,596,792	4,165,135	91
		4132	Contributions for employment	537,048	554,036	103
42			Material expenditure	34,130,900	28,305,513	83
	421		Reimbursements to employees	4,795,800	3,747,851	78
		4211	Business trips	2,151,800	1,797,786	84
		4212	Travel expenses	650,000	915,052	141
		4213	Professional training of employees	1,994,000	1,035,012	52
	422		Reimbursement of costs to members in commissions and similar	20,000	8,164	41
		4221	Reimbursement of costs to members in commissions and similar	20,000	7,797	39
		4222	Reimbursement of business trip costs	0	367	-
	424		Compensations for external associates	68,000	61,825	91
		4241	Compensations for carrying out of activities	68,000	61,825	91
	425		Expenditure for services	25,557,925	21,338,950	83
		4251	Telephone, mail and transportation services	1,690,000	1,196,123	71
		4252	Services of current and investment maintenance	2,568,375	1,955,504	76
		4253	Promotion and information services	640,000	325,126	51
		4254	Utility services	1,050,000	1,054,860	100
		4255	Leases and rents	9,800,000	10,239,396	104
		4256	Health and veterinary services	390,000	400,461	103
		4257	Intellectual and personal services	4,094,050	2,052,057	50
		4258	IT services	3,475,500	2,317,091	67

		4259	Other services	1,850,000	1,798,333	97
	426		Expenditure for material and power	2,337,675	1,969,303	84
		4261	Office supplies and other material expenditures	912,675	609,622	67
		4263	Energy	1,250,000	1,273,509	102
		4264	Small inventory and car tyres	175,000	86,173	49
	429		Other unmentioned material expenditure	1,351,500	1,179,420	87
		4291	Insurance premiums	991,500	964,773	97
		4292	Entertaining	140,000	92,930	66
		4293	Membership fees	200,000	116,555	58
		4295	Other unmentioned material expenditure	20,000	5,162	26
43			Depreciation expenditure	14,500,000	17,252,874	119
	431		Depreciation	14,500,000	17,252,874	119
		4311	Depreciation	14,500,000	17,252,874	119
44			Financial expenditure	78,000	73,237	94
	443		Other financial expenditure	78,000	73,237	94
		4431	Banking services and payment transaction services	45,000	46,956	104
		4432	Negative exchange rate differences and currency clause	19,000	19,010	100
		4433	Penalty interest	1,000	186	19
		4434	Other financial expenditure	13,000	7,085	55
45			Donations	85,096,769	18,832,728	22
	451		Current donations	75,000	74,914	100
		4511	Current donations	75,000	74,914	100
	452		Capital donations	85,021,769	18,757,814	22
		4521	Capital donations	85,021,769	18,757,814	22
46			Other expenditure	3,386,000	362,139	11
	461		Fines, penalties and damages	33,000	13,255	40
		4611	Compensation for damages to legal and natural persons	30,000	7,070	24
		4612	Penalties, storage charges and other	0	6,185	-
		4614	Agreed fines and other compensations for damage	3,000	0	0
	462		Other unmentioned expenditure	3,353,000	348,884	10
		4621	Value not written-off and other expenditure from alienated and depreciated long-term assets	100,000	51,307	51
		4622	Expired debts	3,200,000	278,573	9
		4623	Expenditure for other taxes	29,000	19,005	66
		4624	Other unmentioned expenditure	24,000	0	0
			TOTAL	**177,617,347**	**101,468,731**	**57**

Table 9.10. HAKOM's expenditure in the postal services sector in 2013 compared to the annual financial plan (in HRK)

Class	Subgroup	Section	TITLE	PLAN FOR 2013	REALIZED in 2013	INDEX
41			Employee expenses	2,412,133	1,607,490	67
	411		Salaries	2,025,380	1,315,331	65
		4111	Salaries for regular work	1,975,380	1,298,116	66
		4112	Payment in kind	40,000	17,215	43
		4113	Payments for overtime work	10,000	0	0
	412		Other employee expenses	80,000	90,516	113
		4121	Other employee expenses	80,000	90,516	113
	413		Contributions on salaries	306,753	201,643	66
		4131	Contributions for health insurance	274,249	177,967	65
		4132	Contributions for employment	32,504	23,676	73
42			Material expenditure	2,160,000	824,282	38
	421		Reimbursements to employees	200,000	149,745	75
		4211	Business trips	100,000	72,561	73
		4212	Travel expenses	50,000	64,884	130
		4213	Professional training of employees	50,000	12,299	25
	425		Expenditure for services	1,815,000	582,186	32
		4251	Telephone, mail and transportation services	80,000	40,764	51
		4252	Services of current and investment maintenance	30,000	20,427	68
		4253	Promotion and information services	30,000	7,794	26
		4254	Utility services	50,000	29,282	59
		4255	Leases and rents	500,000	320,112	64
		4256	Health and veterinary services	30,000	12,154	41
		4257	Intellectual and personal services	950,000	49,032	5
		4258	IT services	95,000	56,178	59
		4259	Other services	50,000	46,443	93
	426		Expenditure for material and power	100,000	60,531	61
		4261	Office supplies and other material expenditures	30,000	17,324	58
		4263	Energy	60,000	43,207	72
		4264	Small inventory and car tyres	10,000	0	0
	429		Other material expenditure	45,000	31,821	71

		4291	Insurance premiums	20,000	27,764	139
		4292	Entertaining	15,000	910	6
		4293	Membership fees	5,000	2,978	60
		4295	Other material expenditure	5,000	169	3
43			Depreciation expenditure	100,000	9,761	10
	431		Depreciation	100,000	9,761	10
		4311	Depreciation	100,000	9,761	10
44			Financial expenditure	5,000	1,528	31
	443		Other financial expenditure	5,000	1,528	31
		4431	Banking services and payment transaction services	4,000	1,307	33
		4432	Negative exchange rate differences and currency clause	500	213	43
		4433	Penalty interest	0	2	-
		4434	Other financial expenditure	500	6	1
46			Other expenditure	0	1,249	-
	461		Fines, penalties and damages	0	373	-
		4611	Compensation for damages to legal and natural persons	0	0	-
		4612	Penalties, storage charges and other	0	373	-
		4614	Agreed fines and other compensations for damage	0	0	-
	462		Other unmentioned expenditure	0	876	-
		4621	Value not written-off and other expenditure from alienated and depreciated long-term assets	0	0	-
		4622	Expired debts	0	0	-
		4623	Expenditure for other taxes	0	876	-
		4624	Other expenditure	0	0	-
			TOTAL	**4,677,133**	**2,444,310**	**52**

9.3.4 HAKOM's expenditure in 2013 compared to the previous year

The table below is an overview of HAKOM's expenditure in 2013 compared to 2012

Table 9.11. HAKOM's expenditure in 2013 compared to the previous year (in HRK)

Class	Subgroup	Section	TITLE	REALIZED in 2012	REALIZED in 2013	INDEX
41			Employee expenses	45,348,165	38,249,729	84
	411		Salaries	36,091,349	32,118,758	89
		4111	Salaries for regular work	35,256,375	31,735,629	90
		4112	Payment in kind	817,682	380,977	47
		4113	Payments for overtime work	17,291	2,152	12
	412		Other employee expenses	3,594,705	1,210,157	34
		4121	Other employee expenses	3,594,705	1,210,157	34
	413		Contributions on salaries	5,662,111	4,920,814	87
		4131	Contributions for health insurance	5,082,087	4,343,102	85
		4132	Contributions for employment	580,024	577,712	100
42			Material expenditure	29,001,835	29,129,795	100
	421		Reimbursements to employees	4,122,199	3,897,595	95
		4211	Business trips	1,661,795	1,870,347	113
		4212	Travel expenses	877,323	979,936	112
		4213	Professional training of employees	1,583,082	1,047,311	66
	422		Reimbursement of costs to members in commissions and similar	8,661	8,164	94
		4221	Reimbursement of costs to members in commissions and similar	7,844	7,797	99
		4222	Reimbursement of business trip costs	817	367	45
	424		Compensations for external associates	125,002	61,825	49
		4241	Compensations for carrying out of activities	125,002	61,825	49
	425		Expenditure for services	21,851,788	21,921,136	100
		4251	Telephone, mail and transportation services	1,369,817	1,236,887	90
		4252	Services of current and investment maintenance	1,818,373	1,975,931	109
		4253	Promotion and information services	244,570	332,920	136
		4254	Utility services	636,373	1,084,142	170
		4255	Leases and rents	8,411,834	10,559,507	126
		4256	Health and veterinary services	412,621	412,615	100
		4257	Intellectual and personal services	5,169,234	2,101,090	41
		4258	IT services	1,823,186	2,373,269	130
		4259	Other services	1,965,781	1,844,776	94

	426		Expenditure for material and power	2,028,586	2,029,834	100
		4261	Office supplies and other material expenditures	585,945	626,946	107
		4263	Energy	1,310,200	1,316,715	100
		4264	Small inventory and car tyres	132,441	86,173	65
	429		Other material expenditure	865,598	1,211,241	140
		4291	Insurance premiums	661,194	992,537	150
		4292	Entertaining	92,230	93,840	102
		4293	Membership fees	112,173	119,533	107
		4295	Other material expenditure	0	5,331	-
43			Depreciation expenditure	14,399,491	17,262,635	120
	431		Depreciation	14,399,491	17,262,635	120
		4311	Depreciation	14,399,491	17,262,635	120
44			Financial expenditure	87,639	74,766	85
	443		Other financial expenditure	87,639	74,766	85
		4431	Banking services and payment transaction services	43,598	48,264	111
		4432	Negative exchange rate differences and currency clause	33,590	19,223	57
		4433	Penalty interest	281	187	67
		4434	Other financial expenditure	10,170	7,092	70
45			Donations	7,356,117	18,832,728	256
	451		Current donations	74,000	74,914	101
		4511	Current donations	74,000	74,914	101
	452		Capital donations	7,282,117	18,757,814	258
		4521	Capital donations	7,282,117	18,757,814	258
46			Other expenditure	180,801	363,388	201
	461		Fines, penalties and damages	14,688	13,628	93
		4611	Compensation for damages to legal and natural persons	5,370	7,070	132
		4612	Penalties, storage charges and other	9,318	6,558	70
		4614	Agreed fines and other compensations for damage	0	0	0
	462		Other expenditure	166,112	349,760	211
		4621	Value not written-off and other expenditure from alienated and depreciated long-term assets	115,588	51,306	44
		4622	Expired debts	30,325	278,573	919
		4623	Expenditure for other taxes	20,200	19,881	98
		4624	Other expenditure	-	0	0

TOTAL	**96,374,047**	**103,913,041**	**108**

9.4 Business performance results

Table 9.12. Results of HAKOM's business operations total and according to sectors (in HRK)

	DESCRIPTION	Ostvarenje 2013.	Realisation electronic communications sector	Realisation podr. postal services
	REVENUE	**106,271,386**	**102,609,419**	**3,661,967**
1	Revenue according to special regulations	101,769,728	98,107,761	3,661,967
2	Revenue from assets	2,923,257	2,923,257	0
3	Revenue from donations	143,500	143,500	0
4	Other revenue	1,434,901	1,434,901	0
	EXPENDITURE	**103,913,041**	**101,468,730**	**2,444,311**
1	Employee expenses	38,249,729	36,642,239	1,607,490
2	Material expenditure	29,129,795	28,305,513	824,282
3	Depreciation expenditure	17,262,635	17,252,874	9,761
4	Financial expenditure	74,766	73,237	1,529
5	Donations	18,832,728	18,832,728	0
	- current donations	74,914	74,914	0
	- capital donations	18,757,814	18,757,814	0
6	Other expenditure	363,388	362,139	1,249
	Business performance results in 2013	2,358,345	1,140,689	1,217,656
	DESCRIPTION	Realisation 2012	Realisation electronic communications sector	Realisation postal postal services sector
	Business performance results in 2012	13,560,912	12,613,521	947,391

Total HAKOM's business performance results in 2013 amount to HRK 2,358,345. Results in the electronic communications sector amount to HRK 1,140,689, and in the postal services sector HRK 1,217,656.

The Regulation on the accounting of non-profit organizations prescribes that revenue and expenditure is shown on the basis of **accrual** regardless of collection or payment, and business performance results do not represent a surplus of **collected** funds transferred to the next year. The surplus funds are discussed in the next Section.

9.5 Surplus collected funds

Total surplus collected funds from 2008 amounts to HRK 64,315,556. Surplus collected funds include HAKOM's funds at the regular giro-account in the bank, time deposited funds and petty cash funds as of 31 December 2013 decreased by pre-paid revenue in 2014.

In HAKOM's Financial Plan for 2014 and its amendments a total of 44,092,481 was transferred to 2014 for the Programme for Internet and Broadband Development in Areas of Special State Concern, Hilly and Mountainous Areas and Islands and the Programme for the Elimination of Interferences and Improvement of Reception of Television. Furthermore, a total of HRK 20,223,075 was transferred for approved, unrealized projects in 2013, for purchase of measuring and control devices, for procurement of four transport vehicles and investment into computer software.

9.6 Surplus funds (legislation up to 2008)

In the TA (Article 16, paragraph 4), which was in force until 1 July 2008, it was prescribed that: "The amount and the methods of allocating the surplus of funds referred to in paragraph 1 of this Article and which represents the difference between the revenues and expenditure of the Agency at the end of the current budget year shall be defined by a decision passed by the Government of the Republic of Croatia within six months after the end of the current budget year."

Until 1 January 2008, the Ordinance on accounting of non-profit organisations prescribed the accounting principle of recording economic events. Since revenue and expenditure was recorded in accordance with the accounting principle, business results, that is, revenue surplus/deficit represented the surplus of funds.

Table 9.13. State of surplus funds on 31/12/2013 (in HRK)

Surplus funds per years	State of funds on 31/12/2012	Spent in 2013	Transferred for Internet Development Programme	State of funds on 31/12/2013
Surplus funds from 2005	222,801	0	222,801	0
Surplus funds from 2006	280,416	280,416	0	0
Surplus funds from 2007	320,753	0	320,753	0
TOTAL	**823,970**	**280,416**	**543,554**	**0**

Surplus revenue over expenditure for 2005, 2006 and 2007 was paid in 2013. Surplus revenue over expenditure was divided on the basis of a Government's decision.

On the basis of the approved financial plan for 2013, the remaining surplus revenue over expenditure was transferred for financing of the Internet Development Programme and Programme for Internet and Broadband Development in Areas of Special State Concern, Hilly and Mountainous Areas and Islands.

9.7 Balance sheet

9.7.1 Assets

Assets consist of resources controlled by HAKOM as a result of previous events and which are expected to give future benefits. Assets are observed by type, duration and function in the carrying out of activity, and, in the non-profit system, it is classified into:

- non-financial assets - class 0,
- financial assets - class 1.

Non-financial assets

Non-financial assets consists of produced and non-produced assets. The group of non-produced assets include investments into land and non-material assets. Produced assets are construction facilities, installations and equipment, means of transportation and computer programmes.

Value of construction land remained unchanged. It comprises construction land in Otok, Ravna Gora and Kostrena.

In 2013, the roof of the CMS in Zagreb was repaired. Other rights, that is, investments into non-owned assets were increased by the amount of the repair.

Business premises purchased after 1 January 2008 are entered in the „Business premises“ account the correction of value for which is expressed as the amount of depreciation. Business premises include regional offices and CMSs. They comprise regional offices in Rijeka and Osijek and CMS Veliki Bokolj and CMS Ozljak.

Business premises purchased after 1 January 2008 are entered under „Other business premises“ account the correction of value for which is calculated for the source of financing. Other construction facilities consist of CMS, Otok, CMS Ravna Gora i CMS Degman. A metal building iz Ozljak was depreciated in 2013, and an antennae system, the value of which was included under the facility until then, was transferred under special equipment.

The value of plants and equipment increased by 7 percent compared to the year before. The necessary communications equipment, maintenance and protection equipment and the necessary instruments and devices were purchased in 2013. The purchase value of the antennae system was transferred from CMS Ozljak.

The value of means of transport decreased by 3 percent for the amount of depreciated and sold business vehicles.

Investment into computer software was necessary for the purpose of modernization of software through the e-Agency programme.

Financial assets

Table 9.14. HAKOM’s financial assets (in HRK)

Calculation from the accounting plan	Balance as of 31/12/2012	Balance as of 31/12/2013	Index
11 cash in bank and petty cash	51,809,931	38,885,844	75
12 deposits, guarantees	50,978,795	52,460,897	103
16 receivables for revenue	19,922,538	29,077,320	146
19 revenue for future periods	0	220,540	-
TOTAL	**122,711,264**	**120,644,601**	**98**

A part of HAKOM's funds as of 31 December 2013 was time deposited in HAKOM's bank. The amount of deposited funds is equal to the one time deposited in 2012. The guarantee advance payment is an advance payment for ensuring the payment of monthly lease, individual consumption and regular maintenance of business premises.

Receivables for revenue

Table 9.15. HAKOM’s receivables for revenue (in HRK)

Description of receivables	State of funds on 01/01/2013	State of funds on 31/12/2013
Total receivables	19,922,538	29,077,320
Outstanding receivables	12,887,641	11,221,425
Receivables	7,034,897	17,855,895

Compared to the situation on 1 January 2013, total receivables for revenue and unpaid receivables increased significantly. The reason for significant increase of unpaid receivables are pre-bankruptcy settlements.

Court proceedings were initiated for receivables that were not paid within 30 days after the dunning letter. A total of 61 enforcement proceedings were initiated in 2013 compared to a total of 71 enforcement proceedings nitiated in 2012.

Enforcement proceedings are discussed in Chapter 6 of the Annual Report.

Table 9.16. HAKOM’s balance sheet as of 31/12/2013 (in HRK)

Calculation from the	DESCRIPTION	State as of 31 December 2011	State as of 31 December 2011	Index
	ASSETS	**180,120,250**	**174,166,389**	**97**
0	Non-financial assets	57,408,986	53,521,788	93
01	Unproduced long-term assets	3,626,697	3,955,487	109
011	Material assets - natural resources	93,397	93,397	100
0111	Land	93,397	93,397	100
012	Non-material assets	20,721,417	22,032,753	106
0123	Licences	2,636,622	2,874,414	109
0124	Other rights	9,006	92,872	1031
0128	Other non-material assets	18,075,789	19,065,467	105
019	Value correction of unproduced long-term assets	17,188,117	18,170,663	106
02	Produced long-term assets	53,782,289	49,566,301	92
021	Construction facilities	12,712,650	11,510,471	91
0212	Business premises	7,753,697	8,153,663	105
0213	Other facilities	4,958,953	3,356,808	68
022	Plants and equipment	134,536,300	143,979,303	107
0221	Office equipment and furniture	8,990,817	8,952,129	100

0222	Communications equipment	693,706	1,006,409	145
0223	Maintenance and protection equipment	333,706	551,529	165
0225	Instruments, devices and machines	120,022,661	128,973,826	107
0227	Devices, machines and equipment for other purposes	4,495,410	4,495,410	100
023	Means of transport	22,801,368	22,181,899	97
0232	Other means of transport	22,801,368	22,181,899	97
024	Books, works of art and other artifacts	28,174	28,174	100
0244	Other unmentioned artifacts	28,174	28,174	100
026	Non-material produced assets	25,575,752	28,348,626	111
0261	Investments into software	25,575,752	28,348,626	111
029	Value correction of produced long-term assets	141,871,955	156,482,172	110
042	Small inventory in use	561,570	542,203	97
049	Value correction of small inventory	561,570	542,203	97
1	Financial assets	122,711,264	120,644,601	98
11	Cash in bank and petty cash	51,809,931	38,885,844	75
111	Cash in bank	51,798,465	38,878,381	75
1111	Money on accounts in domestic business banks	51,798,465	38,878,381	75
113	Cash in bank	11,466	7,463	65
12	Deposits, guarantee deposits and receivables from employees and for overpaid taxes and other	50,978,795	52,460,897	103
121	Deposits in banks and other financial institutions	47,400,000	47,400,000	100
1211	Deposits in domestic banks and other financial institutions	47,400,000	47,400,000	100
122	Guarantee deposits	2,422,010	2,481,416	102
123	Receivables from employees	678	461	68
124	Receivables for overpaid taxes and contributions	7,974	9,204	115
1241	Receivables for overpaid taxes	7,974	9,204	115
129	Other receivables	1,148,133	2,569,816	224
1291	Receivables for refundable fees	69,987	88,920	127
1293	Receivables for advance payments	893,982	2,480,896	278
1294	Other unmentioned receivables	184,164	0	0
16	Receivables for revenue	19,922,538	29,077,320	146
163	Receivables for revenue pursuant tospecial regulations	17,687,164	26,235,951	148
164	Receivables for revenue from assets	2,235,374	2,841,369	127
19	Expenditure for future periods and outstanding collection of revenue	0	220,540	-

191	Revenue for future periods	0	220,540	-
	LIABLITIES AND OWN RESOURCES	**180,120,250**	**174,166,389**	**97**
2	Liabilities	52,436,120	44,330,768	85
24	Liabilities for expenditure	5,300,399	4,091,585	77
241	Employee liabilities	3,813,531	3,148,396	83
2411	Liabilities for net salaries	1,970,045	1,722,589	87
2412	Liabilities for net salaries - net	7,501	15,481	206
2414	Liabilities for income tax and surtax on salaries	664,737	454,065	68
2415	Liabilities for contributions from salaries	662,006	541,960	82
2416	Liabilities for contributions on salaries	503,337	414,048	82
2417	Other liabilities for employees	5,905	253	4
242	Liabilities for material expenditure	1,269,111	722,291	57
2421	Reimbursements to employees	77,138	81,812	106
2425	Liabilities towards domestic suppliers	1,162,168	640,479	55
2426	Liabilities towards foreign suppliers	29,805	0	0
245	Liabilities for collected assistance funds	39,225	12,295	31
249	Other liabilities	178,532	208,603	117
29	Delayed expenditure payments and future revenue	47,135,721	40,239,183	85
291	Delayed payment of expenditure	866,746	0	0
292	Unpaid future revenue	46,268,975	40,239,183	87
2921	Pre-paid revenue	57,857	21,970,288	37973
2922	Delayed recognition of revenue	46,211,118	18,268,895	40
5	Own resources	127,684,130	129,835,621	102
51	Own resources	4,573,198	4,366,344	95
511	Own resources	4,573,198	4,366,344	95
5221	Surplus revenue	123,110,932	125,469,277	102
5222	Revenue deficit	0	0	-
Off-balance sheet records				
61	Off-balance sheet records -assets	58,617,042	54,194,550	92
62	Off-balance sheet records - liabilities	58,617,042	54,194,550	92

9.7.2 Liabilities

Account 24 contains Liabilities for expenditure referring to salaries for December 2013 and to obligations towards suppliers.

Account 2921 Delayed recognition of revenue contains delayed revenue, that is, revenue for 2014 paid in 2013. Since a significant amount of fees are paid one year in advance (which does not correspond to a calendar year), the proportionate part of the fee represents income for the following business year.

Account 2922 Delayed recognition of revenue contains delayed revenue, that is, revenue for 2014 paid in 2013.

Account 51 Own sources shows the decrease in own sources resulting mostly from value corrections and disposal of assets procured in 2007 and before.

Account 5221, surplus revenue, contains surplus of revenue over expenditure from 2005 to 2013, amounting to HRK 125,469,277 .

9.8 Investments

Table 9.17. Revenue earned in 2013 (in HRK)

	DESCRIPTION	Plan 2013	Realisation 2013	INDEX
I.	Licences	618,950	352,874	57
II.	Other rights - Investments into someone else's assets for the rights of use	84,000	83,866	100
III.	Other non-material assets - expenditure for development project and studies	1,875,000	1,215,000	65
IV	Business premises	7,960,000	399,965	5
V	Computers and IT equipment	2,008,500	611,821	30
VI	Other office equipment	326,000	185,373	57
VII	Office furniture	150,000	131,359	88
VIII	Communications equipment	625,000	348,731	56
IX	Maintenance and protection equipment	467,600	232,195	50
X	Measuring and control devices	8,387,500	7,479,797	89
XI	Investments into software	6,496,036	2,772,874	43
	TOTAL	**28,998,586**	**13,813,855**	**48**

9.9 State Budget revenue

The off-balance sheet records keep track of the assets of others. It records revenue of the State Budget of the RoC expressed as liabilities from users, which liabilities towards the budget of the RoC expressed at the same time. HAKOM only invoices these fees for the benefit of the State Budget, and amounts of the fees are paid directly into the State Budget. Off-balance sheet records are recorded analytically by buyers and issued invoices for the benefit of the budget.

The total of HRK 680,304,775 was invoiced in 2013 for the benefit of the State Budget. Out of the total invoiced amount, HRK 655,417,325 (96 percent) refers to fees for use of the radio frequency spectrum. Other refers to fees for authorisations and licences, addresses and numbers and legal penalty rates.

According to our records, a total of HRK 681,057,926 were paid into the State Budget in 2013. Old liabilities which are paid into HAKOM's account (2008 and before) and funds paid by mistake to HAKOM's account instead of to the State Budget are regularly paid by HAKOM into the State Budget. A total of HRK 665,982 into the State Budget in 2013.

Table 9.18. Realisation of State Budget revenue in 2013 (in HRK)

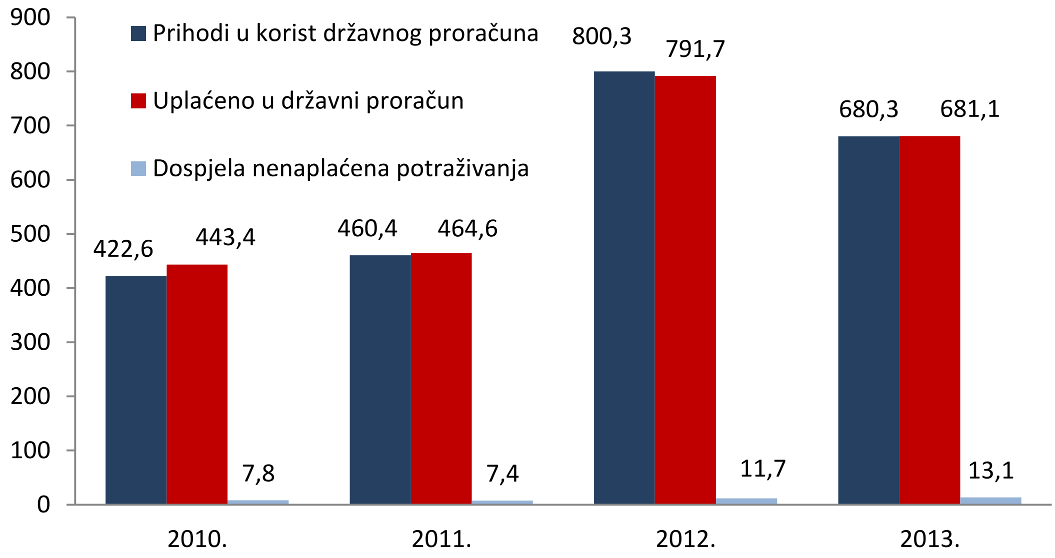
DESCRIPTION	2010	2011	2012	2013
State Budget revenue	422,628,911	460,363,129	800,256,828	680,304,775
Paid into the State Budget	443,427,780	464,621,464	791,650,001	681,057,926

Table 9.19. Receivables - state budget (in HRK)

Description of receivables	State of funds on 31/12/2011	State of funds on 31/12/2012	State of funds on 31/12/2013
Total receivables SB	50,261,176	58,617,042	54,194,550
Outstanding total receivables SB	42,900,619	46,874,985	41,127,827
Receivables SB	7,360,557	11,742,057	13,066,723

Increase of outstanding unpaid receivables is partially a result of pre-bankruptcy settlements.

Figure 9.2. State Budget revenue, payments and receivables per years (in HRK million)



A total of 61 enforcements were initiated in 2013 for all receivables that were not paid even 30 days after the issued dunning letter. The recovery of HRK 1,649,085 for the benefit of the State Budget was attempted through court and HRK 133,335 were collected.

9.10 Independent audit report (summary)

An independent audit firm performed the audit of financial statements of the Croatian Post and Electronic Communications Agency covering the balance as of 31 December 2013, and the revenue and expense accounts for the period from 1 January to 31 December 2011, and notes to financial statements. Financial statements have been prepared in accordance with the prescribed in legal form for non-profit organization.

In accordance with an audit's firm opinion, financial reports present, in accordance with significant determinants, HAKOM's financial position on 31 December 2013, as a result of its business operations for the year ending on that date, in accordance with the Regulation on the accounting of non-profit organizations.

Total assets of the Agency amounted to HRK 174.2 million on 31 December 2013, out of which non-financial assets amounted to HRK 53.5 million and financial to HRK 120.7 million.

A total of HRK 13.8 million of non-financial assets were procured, and all investments were in compliance with amendments to the financial plan for 2013. The total value adjustment in 2013 amounted to HR 17.5 million in 2012 while purchase value and value adjustment for depreciated non-financial assets amounted to HRK 2.0 million. A list of non-financial assets was published with the status as of 31 December 2013, and decisions were adopted pursuant to the proposal of the commission for listing assets recorded in the Agency's business books.

The most important item of financial assets are deposits in domestic banks and guarantees. Financial assets also include cash in bank and petty cash, receivables for revenue and expenditure for future periods expressed in accordance with the provisions o the Regulation on accounting of non-profit organizations. Balances on domestic currency accounts and petty cash balance are based on credible documentation (excepts from business banks and a petty cash balance as of 31 December 2013). The audit company verified the shown receivables on the basis of written confirmations from buyers.

The balance sheet liabilities as of 31 December 2013 consist of liabilities amounting to HRK 44.3 million, own sources amounting to HRK 4.4 million and business results amounting to HRK 125.5 million.

The most important item among liabilities is the postponed payment of expenditure and future revenue amounting to HRK 40.2 million. The company separated liabilities on revenues in the current and revenue in future periods.

The balance of own sources is a result of value adjustment and depreciation of assets purchased in 2007 and before.

Business results consist of cumulated surplus/deficit of revenue over expenditure in earlier years increased by the expressed surplus revenue in 2013 totalling HRK 2.4 million.

As of 31 December 2013 the Agency does not have significant potential liabilities. According to the attorney and the Agency's legal service, it is expected that legal disputes against the Agency will have a positive outcome.

Annexes:

A. List of abbreviations

ADSL - Asymmetric Digital Subscriber Line
AEM - Agency for Electronic Media
AGCOM - Autorità per le Garanzie nelle Comunicazioni
APEK - Agencija za pošto in elektronske komunikacije
ARS - Amateur radio station
CCA - Croatian Competition Agency,
BAM - Agency for Electronic Media of Montenegro
BEREC - Body of European Regulators for Electronic Communications
BRIFIC - Bureau Radio International Frequency Information Circular
CADB – Central Administrative Database of Ported numbers
CABP - Central Administrative Base of Portability
CARNET- Croatian Academic and Research Network
CCA/LRIC - Current Cost Account/Long Run Incremental Cost
CEPT - European Conference of Postal and Telecommunications Administrations
COCOM - Communications Committee
CPS - Carrier Pre-Selection
CRM - Customer Relationship Management
DAB - Digital Audio Broadcasting
DAB+ - Digital Audio Broadcasting – an upgraded version of DAB system
DCS - Distributed Control System
DG CONNECT - Directorate General for Communications Networks, Content and Technology
DMS - Document Management System
DSLAM -Digital Subscriber Line Access Multiplexer
DTV – Digital television
DVB-T - Digital Video Broadcasting – Terrestrial
DWH - Digital Warehouse
COCOM -Electronic Communications Committee
(ECC) PT FNI - ECC Project Team Future Numbering Issues
(ECC) PT FNI - ECC Project Team Number Portability
(ECC) PT TRIS - ECC Project Team Technical Regulatory Issues
ECO - European Radiocommunications Office
ECP - European Common Proposals
ECTS - European Credit Transfer System
EFIS - European Frequency Information System
EFTA - European Free Trade Association
FEBZ - Faculty of Economics and Business Zagreb
EC – European Commission
ECI – Electronic communications infrastructures
EKIP – Electronic Communications and Postal Services Agency of Montenegro
ELMAR - International Symposium "Electronic in Marine"
ERGP - European Regulators Group for Postal Services
ERP - Enterprise Resource Planning
EU - European Union
EUROSTAT - Statistical Office of the European Union
FEEC - Faculty of Electrical Engineering and Computing
FM - Frequency Modulation
FMC - Fixed-Mobile Convergence

FTTH- Fiber to the Home
FTTx - Fiber TO The x
GIS - Geographic Information System
GSM - Global System for Mobile Communications
HAKOM – Croatian Post and Electronic Communications Agency
HCM – Harmonised Calculation Method – International agreement for the harmonisation of frequencies for mobile and fixed terrestrial systems
HD- High Definition
HDTV - High Definition Television
HLIG - High Level Group for Internet Governance
HP - Croatian Post
HRM - Human Resource Management
HRN - Croatian Standard
HRN EN – Norm taken over from the CEN/CENELEC standardization system
HT - Hrvatski Telekom d.d. (Croatian Telecom)
CFC - Croatian Fire fighting Community
CIHI - Croatian Institute for Health Insurance
ICSMS - Information and Communication System on Market Surveillance
ICT - Information and Communication technologies
ICT - Information and Communicaton technologies
IMS - Internet Protocol Multimedial Subsystem– IP multimedial subsystem
IP - Internet Protocol - Network protocol for data transfer which is used for source and destination computers for data communication over computer network
IPA - Instrument for Pre-Accession Assistance in the process of accession to the EU - one of the EU pre-accession cooperation and assistance
IPTV - Internet Protocol Television
IRG - Independent Regulators Group
ISO - International Standards Organization
IVSZ - Informatikai Vállalkozások Szövetsége- Hungarian Association of IT companies
ITU - International Telecommunication Union
CMS – Control and measuring station
CMC – Control and measuring centre
CTV - Cable television
LTE - Long-Term Evolution - A technology which enables high transfer speed over 4th generation mobile communications systems
MCPP - Ministry of Construction and Physical Planning
MMS - Multimedia Messaging Service
MPEG -Moving Picture Experts Group –.
MSTI– Ministry of the Sea, Transport and Infrastructure

MUX - Multiplex a stream of digital signals containing several radio or television programmes and/or other data simultaneously transferred via one radio frequency channel;
MFEA - Ministry of Foreign and European Affairs
M2M - Machine to Machine
NCRT - National Council on Radio Television
NGN - Next Generation Network
NMHH - Nemzeti Média és Hírközlési Hatóság
OG – Official Gazette
OLT - Optical Line Termination - Unit or device serving as terminating point for an optical line changing the optical signal into the electrical signal
PAY-TV - watching of paid TV programmes
PCM Pulse Code Modulation –

MCMS - Mobile control and measuring station
PMR - Private Mobile Radio
PSTN - Public Switched Telephone Network
RAK - Regulatory Agency of Bosnia and Herzegovina for Communications
RAPEX – Rapid Exchange of Information System
RBA - Republic Broadcasting Agency
RF - radiofequency
RRC – Regional Radiocommunications Conference
RSPG - Radio Spectrum Policy Group
RoC – Republic of Croatia
R&TT – Radio and telecommunications terminal equipment
RTR (Rundfunk und Telekom Regulirungs)
SAT TV - Satellite television
S-DAB - Satellite Digital Audio Broadcasting
SD- Standard Definition
SINTESIO - Non-profit institution for issues of compliance of NGN and laboratory for testing interoperability with headquarters in the Republic of Slovenia
SDTV- Standard Definition Television
SEE Digi.TV - South-East European Digital Television
SIM - Subscriber Identity Module
SMS - Short Message Service
SNG - Satellite News Gathering
SRD - Short Range Devices
T - DAB - Terrestrial Digital Audio Broadcasting
TV – Television
UHF - Ultra High Frequency: RF band between 30 MHz and 300 MHz
UMTS - Universal Mobile Telecommunications System (3rd generation mobile network)
UPU - Universal Postal Union
USB - Universal Serial Bus
VAS - Value Added Service
VDSL - Very-high-bit-rate Digital Subscriber Line
VHF - Very High Frequency RF band between 300 MHz and 3 GHz
VoIP - Voice over Internet Protocol
WRC- World Radiocommunication Conference
WGFM - Working Group Frequency Management
WLR -Wholesale Line Rental
xDSL - x Digital Subscriber Line
xWDM -X Wavelength Division Multiplexing
ECA – Electronic Communications Act
PSA – Postal Services Act

B. List of figures

C. List of tables