



SUSTAINABILITY REPORT

2016



EGYÜTT. VELED



2.

RESPONSIBLE SERVICE

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2.1 CLOSING THE DIGITAL DIVIDE



Digital divide is the phenomenon when different groups of society have differing opportunities to access information technology (due to geographical location, social situatedness or other reasons).

Access to information and communication technologies is crucial for economic development in today's world. The transformation of social relations and communication makes it important for us to be familiar with new technologies and the opportunities offered by them.

With its digitally enabled sustainability program Magyar Telekom aims to overcome the digital divide and enable communities to access benefits of communication technologies and access to information.

Supporting people living with disabilities

Magyar Telekom set an objective to offer comprehensive services for people with disabilities. Working closely with support organizations, we created the hello holnap! fleet tariff packages that are available to people living with physical impairments, visual impairments, intellectual disabilities and autism.

For further details on the tariff packages, please visit (HU only): https://www.telekom.hu/rolunk/fenntarthatosag/ugyfeleinknek/hello_holnap_dijcsomagok

HELLO HOLNAP! TARIFF PACKAGES

We recognized that access to and use of telecommunication services make disabled people's lives easier as everyday electronic services become available to more and more people and their homes are more livable and accessible. Magyar Telekom was the first to offer specific, comprehensive services to people with disabilities in Hungary. In order to use hello holnap! tariff packages one only has to be a registered member of one of the support organizations (AOSZ, ÉFOÉSZ, MEOSZ, MVGYOSZ). The services are offered on a lower price, than our other residential tariff packages – in the form of prepaid and postpaid packages.

In 2016 we initiated discussions with the involved organizations to redesign the hello holnap! tariff packages allowing them to become even cheaper and more suitable for our customers. As a result of the renewing process hello holnap! gives access to more services, and allows a person to buy 2 subscriptions, providing easy access to a helper or a family member as well.

Supporting isolated, disadvantaged groups and small settlements

The Digital Bridge for Small Settlements program allowed the volunteer team of Magyar Telekom to visit disadvantaged settlements of less than 3000 residents to offer efficient and customized IT education.

The purpose of Magyar Telekom's Digital Bridge for Small Settlements Program (Digitális Híd Kistélepüléseken) is to increase awareness of the opportunities offered by information and communication technologies. It aims to enable disadvantage groups and regions to bridge their digital gap, which over time could deepen into a serious divide. The local participants of the program gain an understanding of the multiple ways their lives could be made easier through making use of the advantages of getting along in the online world. Another important task of the Digital Bridge activities is to develop, maintain and foster relationships with participants, keeping track of their development in the long term.



hello holnap! tariff packages to people with disabilities

Digital Bridge Fest

In 2009 the Digital Bridge for Small Settlements Program was supplemented by a new element, called Digital Bridge Fest (Digitális Híd Fest). Within the frame of the event volunteers of Magyar Telekom continue to educate local people about the benefits of digital literacy. As a new component, Telekom is facilitating a talent contest among local participants and the winners are offered the opportunity to show their talents and perform their art to the online community.

Along the program, during the summer school holiday we have organized 7 Digital Daycare events. In addition to the events of daycare service, we have provided an interactive education program to increase the digital literacy of the attendants.

For videos, pictures and further information about the Digital Bridge program visit: https://www.telekom.hu/about_us/society_and_environment/society/digital_bridge www.facebook.com/DigitalisHid



Digital Bridge

Telekom Smart Digital Program Conscious use of the internet - for children and adults

We believe that as a responsible large enterprise we do not simply provide services to our customers but also help them in the safe and responsible use of the internet while exerting efforts to close the digital divide in Hungary. The objective of the Telekom Smart Digital Program is to educate as many customers as possible on the safe and conscious use of content and to facilitate the use of electronic communication tools.

We strive to ensure that future generations should not simply use the internet but also be able to take advantage of the opportunities offered by the digital world in a smart and knowledgeable way.

Within the frame of the Telekom Smart Digital Program the company's volunteers visit various schools and educate children about the underlying risks of mobile phone and internet use, also showing them how to avoid these risks in a safe and responsible way. The success of the program is enhanced by offering the opportunity to discuss these topics with experts who have hands-on work experience and extensive practical knowledge in this area.

When designing the lessons we give priority to topics that would require professional knowledge but are seldom discussed in details at school or at home. Along with the key aims of the program, the content of these lessons is continuously updated. On the one hand it is due to the advancement of technology and on the other hand each sequence of lessons is based on the feedback provided by children and their teachers. Last year we updated the format and the content of our curriculum: we created an interactive Prezi presentation to focus on topics that proved to be the most interesting for the young generation.

The Telekom Smart Digital program presentations were delivered to more than 2300 children in 64 schools across the country.

The Telekom Smart Digital program was part of the Digital Theme Week (Digitális Témahét) events and during the summer holiday the program was taken to the Interchurch summer camp, too. This November our colleagues took part in the "Parents' Academy" (Szülők Akadémiája) open education series, organized for parents by the local municipality of the 12th district of Budapest.

Several education initiatives have been combined in the Telekom Smart Digital Program where volunteering professionals teach children, parents, grandparents to the use of the digital world across the entire country. It is our mission to actively contribute to the development of Hungary's digital maturity, digital literacy and the safe, conscious use of the internet by future generations.

We would like to educate as many people as possible, allowing them to become confident digital citizens of the digital world. We use our best efforts to reach out to everyone who is interested in the opportunities offered by the internet, making this knowledge accessible to different generations in larger cities and small municipalities alike. This is facilitated by our complex, modular and free education program.

During the 45 minute lessons our expert volunteers drive their students' attention to the different factors they have to pay attention to while using their mobile phones. They discuss topics like passwords, muted operation mode, Facebook data

protection and safe chatting. Our presentation to secondary school students - besides the safe use of the internet - also touches topics of personal branding and online etiquette. One of the most important factors in furthering the knowledge of children is the expertise and knowledge of their teachers. If teachers are well prepared and authentic to the digital world that surrounds their students, they can influence their digital maturity to a large extent. Our lessons, designed to schoolteachers is there to help this interaction (2 x 45 minute lessons and two-day trainings).

Not only children but their parents should also be aware of the rules of conscious and safe use of the internet. We also prepared a lesson series for parents too, so that we equip them with the knowledge with which they can help their children to find their way in the digital world. In the course of these lessons - besides basic online topics - we also discuss key topics like internet security and cyber bullying.

Telekom forum

Telekom Forum is an online social platform where our existing and potential customers can chat, find information about our services, and about the use of internet, smart devices and smart devices, and also information about access to various online contents. The page is public and worth to visit for all who wish to gain first-hand information about Telekom products from the most reliable experts: the users themselves. The page is moderated and supported by Magyar Telekom experts.

Mobile Experts

Our Mobile Experts (Mobiltudósok) are to be found in Telekom shops offering help and support to visiting customers in the use of our devices and services. They provide information on how the internet can improve the customers' lives (administration, banking, online shopping). Our experts can also be found online: they share their knowledge about the latest technical improvements, products and interesting facts. Their blog can be found on the Mobiltudós blog and on Telekom's Facebook page.



Become an IT expert! training

Internet Academy Lectures

Our Internet Academy Lectures are targeting the elderly focusing on practical issues such as online citizenship and administration, communication through the web, reading the news, searching for recipes, etc. After each presentation we offer the chance for private consultations. All participants also receive printed handouts to help them understand the presentation and as an aid in their self-education.

Become an IT expert! – Career-guidance program

We have designed the Become an IT expert! (Legyél Te informatikus!) for high-schoolers and their parents, providing them an easy, hands-on introduction to the world of IT, and to the range of career opportunities that are there for everyone who chooses this path as their profession. Teenagers who need to make choices about their higher education and their parents who support their children in finding a career both profit from the benefits of this program. We aim to discuss the opportunities and the future of this sector by erasing all the blocks, stereotypes, providing answers to concerns and supporting the career-planning process of individuals. The program has finished its first successful year in 2016. For the detailed results and our plans for the future, please visit chapter **6.1. Social investments** of this report.

Partnership for Digital Hungary

The Hungarian Government and Magyar Telekom, a subsidiary of the Deutsche Telekom Group, have entered into a partnership of cooperation to enhance Hungary's digital development. As outlined in the official document, Magyar Telekom intends to make further investments so as to foster the provision of high-speed broadband internet in Hungary. The intense use of innovative technologies and information and communications technology (ICT) solutions contributes to improving the quality of life for people in Hungary, the efficiency of businesses and the international competitiveness of the country's economy. Furthermore, the company aims to promote digital literacy and the widespread adoption of safer internet use. (Digital Bridge, Telekom Smart digital Program.

The aim of the Partnership for Digital Hungary is to make high-speed broadband internet available for every home by 2018.

As a result, Hungary could achieve the objectives specified for 2020 in the Digital Agenda for Europe before the deadline, and could serve as an example for other member countries.

Magyar Telekom is strongly committed to innovation, and keeps developing its newest and most advanced services. Besides the full implementation of a high-speed broadband internet network, future plans include a number of other developments that could elevate the domestic digital infrastructure and the associated services to be among the best in the world by 2018. Magyar Telekom's subsidiary, T-Systems Hungary serves business and public administration customers and therefore actively contributes to enhancing the digital economy and utilizing EU funds spent on ICT projects that could increase the competitiveness of Hungary's economy.

Plans include improving the safety of homes and residential areas with intelligent and user-friendly solutions; providing devices that ensure simple management of energy needs for the population and businesses; introducing convenient and secure mobile payment solutions; and making business and public administration processes simpler, more transparent and faster with the help of the most up-to-date internet-based services. In addition, Magyar Telekom significantly supports the acceleration of digitalization processes at enterprises and SMBs alike by means of the latest ICT technologies ranging from IT infrastructure to application solutions.

Access to broadband internet is an important, but in itself by no means sufficient basic condition to creating equal opportunities digitally, which is one of the general objectives of this strategic partnership. Most internet users in Hungary still only use the basic services and many of them abstain from online shopping, electronic transactions and other advanced solutions. Magyar Telekom focuses on increasing consumer awareness and

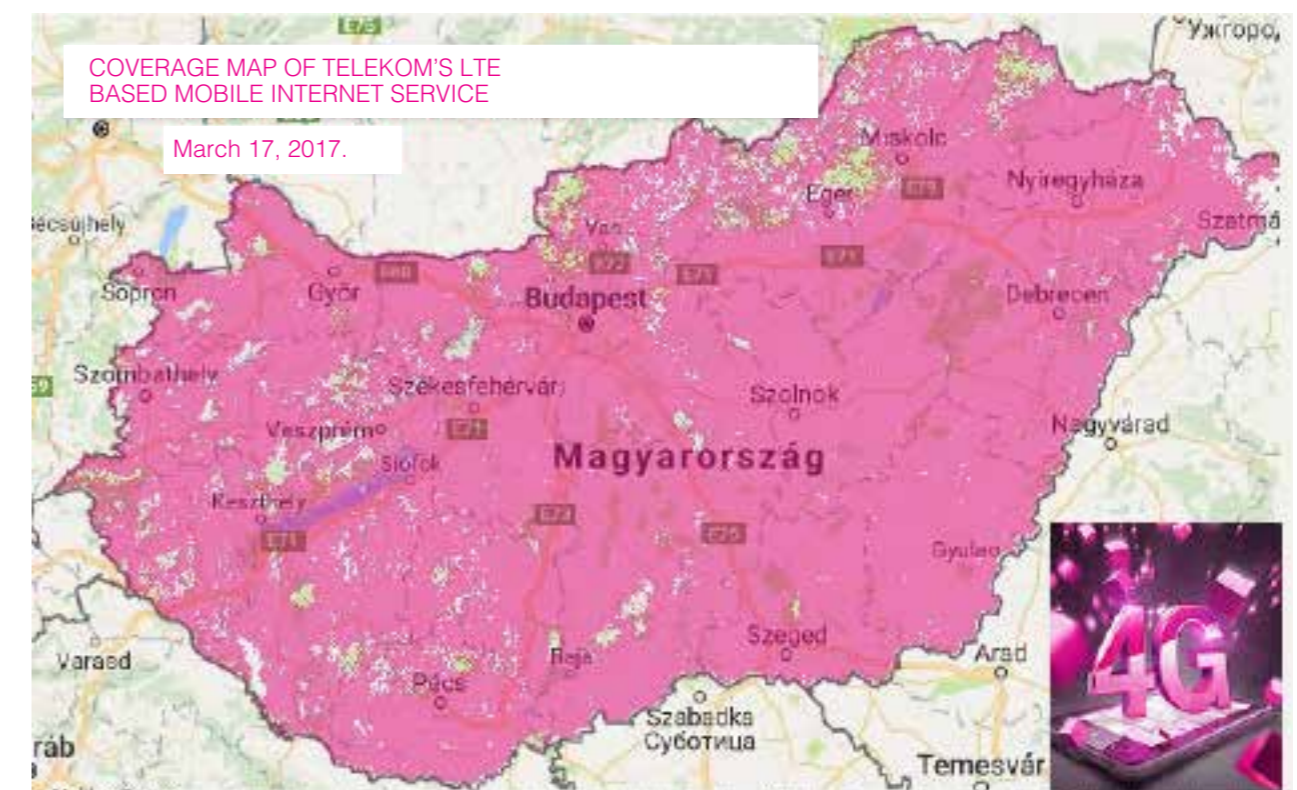
cooperates with its partners to ensure that the number of citizens using the modern services in Hungary may reach the EU average and then exceed it. Furthermore, Magyar Telekom plays a pioneering role in facilitating digital literacy.

In March 2015 we started our cooperation with Telenor Hungary within the frame of which we jointly build the LTE800 network in the countryside of Hungary. The network will be built by Telekom in the areas east from the Danube while Telenor will design and build the facilities in the western part of the country. The cooperation does not involve operations in Budapest area.

Our main objective is to jointly achieve the coverage commitment made to the National Media and Info-Communications Authority (NMHH). With the joint effort we can build cutting-edge mobile technology facilities for our customers in the countryside and the cooperation scheme was designed in a way that none of the companies have to abandon their plans to complete important developments, not even if it is not a preferred option by the given partner.

Besides, the 10-10 MHz bands, acquired by the two companies, will be shared thus both enterprises can build 20 MHz bandwidth which results in double nominal speed. By the end of 2016 we put 2,200 stations into operation within the frame of the joint project.

As a summary of the joint effort we may conclude that the actual winners of the cooperation are the subscribers of both companies. As a result of the combined effort users may enjoy higher bandwidth from an earlier as a result of a cost-effective, joint network-development process.



SERVICE AVAILABILITIES

Annual availability (%)	2012	2013	2014	2015	2016
Cable television analogue/digital	99.95 ✓/99.93 ✓	99.94 ✓/99.88 ✓	99.94 ✓/99.90 ✓	99.93 ✓/99.84 ✓	99.97 ✓/99.89 ✓
SatTV	99.86 ✓	99.94 ✓	99.948 ✓	99.924 ✓	99.92 ✓
IPTV	99.82 ✓	99.86 ✓	99.83 ✓	99.898 ✓	99.85 ✓
Fixed line internet (ADSL/GPON/CableNet)	99.93 ✓/ 99.99 ✓/99.90 ✓	99.89 ✓/ 99.96 ✓/99.87 ✓	99.89 ✓/ 99.90 ✓/99.86 ✓	99.90 ✓/ 99.97 ✓/99.92 ✓	99.88 ✓/ 99.96 ✓/99.90 ✓
Mobile internet (2G/3G/4G)	99.40/99.55	99.40/99.57/99.67	99.66 ✓/ 99.74 ✓/99.67 ✓	99.66 ✓/ 99.74 ✓/99.67 ✓	99.56 ✓/ 99.79 ✓/99.35 ✓
Telephone/VoIP/VoCa	99.95/99.93/99.84	99.93/99.90/99.87	99.94 ✓/ 99.88 ✓/99.90 ✓	99.94 ✓/ 99.92 ✓/99.91 ✓	99.94 ✓/ 99.90 ✓/99.91 ✓
Mobile telephone (2G/3G/4G)	99.93/99.88	99.91/99.88/99.84	99.907 ✓/ 99.883 ✓/99.849 ✓	99.907 ✓/ 99.883 ✓/99.870 ✓	99.907 ✓/ 99.901 ✓/99.844 ✓

We are in lead position in terms of quality of mobile networks

In 2015 we won the 'P3 Best in Test' certification, with what the P3 company carrying out the independent measurements, on the basis of its measurement test results, has proven that in Hungary Magyar Telekom has the best mobile network. In 2016, the network of Magyar Telekom again proved to be the best, achieving 862 scores from the maximum 1000 scores.

The data of OpenSignal also reconfirm that the mobile internet network of Hungary is ranked among the cutting-edge networks of the world.

In 2016 we could countrywide further increase our 4G coverage in the residential customer segment.

As a result of the one-year common work of IP and Transport Networks branches, we have implemented with success one of the key milestones of Magyar Telekom's **IP core network modernization project**, a first project initiated at DT-level by an international tender.

In the frame of the project, with the devices of the winner of the common tender valid for the entire DT Group, we have implemented Telekom's 100 Gbps IP network, which meant installation and network adaptation of Cisco's at the present most advanced state of the art network switches in 2 key locations in Budapest and 3 rural locations. The backbone connections of devices deployed within the IP-EDGE project in the recent years have been moved over onto this new network. In the backbone network – serving the IP network with wide area optical connections – it meant relocation and establishing of more than 220 pieces of 10 Gbps and 12 pieces of 100 Gbps links! The new 100 Gbps connections have been implemented already as a fully integrated network, i.e. the optical connectors form part of the routers (IPoWDM concept), so thus we could avoid using additional devices and could save significant costs.

Digital development in the region

In order to close the digital gap, **Makedonski Telekom** has made the following contributions in 2016:

- The 98% of households are covered with fixed access network. In rural areas where we do not have coverage, any customer request for Voice service is considered with FGSM solution or with Satellite based solution as ASTRA.
- With 398 locations where xDSL equipment is installed, broadband access is provided on the whole territory of Macedonia with 92.8 % Households reachable (more than 3Mbps). Starting from 2016 and continuing in the next years we have implemented VDSL Vectoring equipment that can offer increased BB access speed for households in already covered low speed areas. Also for increased speed demands in the low speed areas hybrid access solution (xDSL+LTE) was implemented.
- MKT fiber optic network (as of EoY 2016) provides more than 26 % of coverage of households enabling access speeds >40Mbps and we will continue with its further rollout.
- Mobile BB access to our customers is provided using 3G network with 99.5% and 4G networks with 80% coverage of population respectively. LTE Advanced using Carrier Aggregation was also implemented on several locations enabling speeds with more than 200 Mbps.
- Additionally, BB access in rural areas will be improved with implementation of UMTS 900 and LTE 800 MHz

At **Crnogorski Telekom** along with offering the most advanced technologies, both services and products, the company continued enabling the internet to become a part of everyday life for the majority of Montenegrin citizens. By the initiative "connecting the unconnected", as a part of the Company's CSR strategy, Telekom continued to provide free of charge services to selected subjects in 2016 as well. The beneficiaries of these donations were preschool institutions, elementary schools and high schools as well as associations and organizations which gather persons with disabilities. For the tenth year in a row, Crnogorski Telekom is enabling free internet access via ADSL to all elementary and high schools in the country.

2.2
ICT FOR SUSTAINABILITY

One of the key priorities of the sustainability strategy of Magyar Telekom Plc. is to increase the revenue from sustainable products.

In line with this objective, in 2011 we incorporated the product sustainability assessment into the regulation of the sustainability coordination process; defined the process players as well as their tasks and their layers; then in 2012 the sustainability assessment of our handset portfolio was also made part of the regulations so that this information is accessible to our customers. The process players were identified again in the new organization structure, building daily contacts with them for the implementation of the objectives. In 2014 we reviewed our products and services. Within the frame of the revision the sustainable product database was updated, i.e. cancelled products were deleted whereas new products–upon their assessment–were entered in the database of sustainable products and services. We expand the sustainability assessment for the T-Systems' portfolio, too.

Our revenue from sustainable products and services increased year by year, while in 2011 it was only 13% in 2016 we reached the 28% ratio.

<http://www.telekom.hu/rolunk/fenntarthatosag/ugyfeleinknek> (HU only)

List of the most important products and service groups with a sustainability impact in 2016:

- Technology for health
- Climate-friendly and cost-effective business
- Sustainable digital solutions
- Equal chances in a digital world
- Sustainable products

The purpose of the sustainability assessment is to identify the sustainability impacts of our products and services and determine whether the given product or service has favorable environmental and social impacts, or whether it contributes to long-term economic growth and is favorable for the customer.

Magyar Telekom assesses its products and services from sustainability aspects, too. The assessment reveals whether the product or service in question has any favorable environmental or social impact, whether it contributes to long-term economic development and if it is beneficial for the customer. The sustainability impact of products/services is measured in 3 dimensions, in 15 topics and through 42 questions. According to related regulation sustainability assessment covers all products and services of the company

- For years we have been using the same methodology for the sustainability assessment of our products and services, based on three pillars of sustainability:
- Social pillar: assessment of the contribution of the product/service to health, access to information, equal opportunities and personal growth.
- Economic pillar: assessment of the contribution of the product/service to sustainable consumption, competitiveness and actual needs.
- Environmental pillar: assessment of the contribution of the product/service to the preservation of resources, reduction of the environmental footprint and climate protection.

For further details please read the Sustainability Report of 2009: http://www.telekom.hu/static-tr/sw/file/Sustainability_report_2009_eng.pdf

At **Crnogorski Telekom** ICT sustainability also represents the responsible acquisition, installation, use and disposal of information and communications technologies and services in order to utilize resources more effectively, improve efficiency and increase productivity, and reduce the environmental impact of operations. It also includes the effective use of information and communications technology and identifies the steps of applying available environmental standards in ICT industry, in order to promote more sustainable practices in the community.

Translated to our everyday work routine, this means the development of skills and knowledge of staff responsible for the purchase, deployment and disposal of ICT equipment and consumables.

Some activities in that direction are:

- managing energy consumption in sense of power usage effectiveness (for example, VDI instead of traditional PC devices),
- reduction of Carbon monoxide,
- energy savings (LED lighting instead of traditional bulbs) with Smart cities, homes and offices projects,
- reducing the number of equipment in data center by consolidating and virtualizing servers,
- reduced hardware obsolescence,
- deploy wireless networks to facilitate more flexible work environments and reduce cabling and power requirements,
- replace power-hungry cathode ray tube (CRT) monitors and televisions in hotel industry with more efficient Light-Emitting Diode (LED) monitors,
- intelligent energy management in buildings, etc.

Being one of the best ICT providers and system integrators in the country, one of **Makedonski Telekom's** key strategic priorities is to assure that the products from the ICT portfolio as well as the activities and projects in the system integration area align with the principles of sustainability.

However, implementing technology per se is not our main objective. Although we possess strong technical capabilities, our aim is not to position ourselves solely as technology experts, but rather as business partners who have an understanding of the customers' business and master the most suitable technology in service of their success.

Supported by our best technology network, we develop sustainable and cost-effective ICT solutions that address customers' needs and help them utilize their resources more effectively, while improving efficiency and increasing productivity, and reducing the environmental impact of all operations.

Our ICT products and services are based on our solid network and reliable infrastructure, which helps us to design and develop an innovative product portfolio. By utilizing the benefits of our infrastructure, we offer a range of solutions to reduce the operational costs of businesses, increase efficiency and reduce the initial investments, thus saving energy, contributing to the growth of the local economy and protecting the economy.

2.3 INNOVATION FOR SUSTAINABILITY

Research and development

Tender Project

In 2016, the Research and Development activities at Magyar Telekom covered the maintenance of R&D grant project launched and won in the frame of a tender obligation of the National Research, Development and Innovation Office. In 2016, several prototypes had further developments, within the framework of a tender project entitled "Info communication R&D&I umbrella" implemented by Magyar Telekom.

Own Risk based Research and Development

In 2016, in addition to the tender obligation, we have launched several product and service developments of projects, based on our R&D activities earlier in 2015, such as the Big Data related "Mobile Insight" data acquisition module. Along with that development, certain smart-watch R&D functionalities have been made available in operation (for example: Smart Watch Mobile Payment application)

In 2016, we have launched new, smaller R&D projects, especially in the area of Big Data, IoT, TV/ Entertainment and Transport. Their first results are expected in the first half of 2017.

R&D cooperation

In addition to innovative domestic SMEs, the R&D tasks are performed by Magyar Telekom's own research, product and service development staff. Along this line, the Company elaborates on further synergies utilizing its internal and external knowledge base, and engages in partnerships with well-known innovation centres and institutions of university education. Our main partners are renowned Hungarian universities, research institutes such as Budapest University of Technology and Economics, Corvinus University of Budapest, University of Szeged, University of Debrecen, and the Hungarian Academy of Sciences.

Magyar Telekom deems it important to support knowledge transfer projects of R&D nature as well; thus it participates actively as a professional cooperating partner and in the EU knowledge transfer program EIT ICT Labs KIC the Company joined in 2012, they are working together in more international R&D tender initiatives.

In-house incubation programme - Mission Telekom

Mission Telekom is an in-house incubation programme for employees. During the process, we are looking for ideas and project propositions in support of Telekom's strategic focuses.

Our goal is to bring the best tenders into practice, selected by a professional jury, with the active cooperation of the project initiators and professional/technical mentors in the year 2017.

A key element of the jury selection criteria is the sustainable value and of the proposals important element of the jury's point of view during the selection is the sustainability (CSR) of the project propositions.

The development of the concept of Mission Telekom program started at the end of 2016 and the Program was launched 6th February, 2017.



Footfall Analytics

Our Footfall Analytics device is active at the Hungarian market since September, 2016. The product is part of the Telekom Leading Data portfolio (<https://www.telekom.hu/uzleti/leading-data>) since November, 2016. We have already collaborated with OMV and Penny Market among others, but we are continuously serving requests from other sectors as well (e.g.: finance, tourism, transport).

The solution is based on that mobile phones leave a trace behind in the network systems. We create heat maps from the originated location data that we complete and compare with demographical data (e.g. gender, age) for further increase in value.

To increase customer experience, we visualize the analyses that also help in the easier, but all-out comprehension of the results. Thanks to the web-based visualized surface we insure access to the analyses that can be found there during any time of the contract period. Besides, after the specialization of the demands, with the help of our analyst team, with pre-harmonized schedule we insure to provide unique reports.

Our primary standpoint at every solution is the analogy to the data protection criterion. By our strict processes we insure perfect security maintenance of the data. The matters in hand are being made in a totally anonym method, with a 24 hour following period.

With the help of the device, lengthy, complex, expensive and manual investigations can be substituted. It gives answer to questions with the help of what the marketing and research costs until now can be significantly optimised. For example: How many people pass by the designated location every day? Which place would be the best to place my billboard, my leaflets? How should I optimize the opening hours? Where do my customers come from? In what scale does the saturation of each location change (e.g.: touristic spots)?



Smart Campaigns

With the help of Smart Campaigns, our localization based mobile marketing solution, SMS campaigns can be sent through self-service surfaces. During their aiming, beyond the classical demographic criteria, the customers' real-life place of residence, interest as well as other relevant characteristics can be taken into consideration.

The localization based mobile marketing means a mobile advertising service that uses the customer's currently used mobile phone cells' localization information. During the geotargeting, after appointing a geographical area surrounded with a geo-fence, we can address the chosen target group at a given point of time or during a time interval when their members move about the marked location, that is to say they cross the marked geo-fence. The geo-fence can be drawn up around any place of the physical world, so for example around shopping centres, urban parks or other advertising spots.

Due to the above-mentioned, the reached target group is smaller, but always "without waste", as only those receive the offer, who sojourn at the given location when the offer is available for them in space-time. Owing to the actuality of the offer, the proportion of the customer responses to the mobile marketing messages will be higher than at the traditional marketing solutions.

Of course, according to the expected procedure by the Hungarian regulation of electronic direct marketing, the database's members, who can be targeted with the location-based mobile advertisements, previously agreed in writing to be looked up with these kind of advertisements.

Wi-Fi Fon

Magyar Telekom, along with Fon, its international market leader partner, introduces a new, free of charge service offering broadband internet access called Telekom Wi-Fi Fon. Telekom's new nationwide Wi-Fi network will provide users the opportunity to use the internet safely outside their homes in reliable quality,

without any data limitation or excess charge, in nearly 2000 localities in Hungary and in some 20 countries worldwide over Fon's Wi-Fi network.

In exclusive cooperation with its partner Fon, Magyar Telekom is establishing Hungary's largest Wi-Fi network with the help of digital home gateway devices located in the homes of its fixed line broadband Internet subscribers. In addition, Telekom is going to integrate the hundreds of thousand hotspots established this way, into the world's largest Wi-Fi network. Telekom Wi-Fi Fon hotspots, as opposed to public hotspots, provide quality, reliable and safe broadband Wi-Fi connection for users, also away from their homes.

Initiatives to raise ICT awareness

From 2015, **Makedonski Telekom** has strongly dedicated its efforts towards exploiting the capabilities of new and innovative technologies in order to help cities become smarter and more efficient, thus providing citizens with better services and quality of life. Implementing advanced and innovative ICT solutions to provide balance between citizens' social, economic and environmental needs is one of the most important, yet challenging tasks for city authorities and we are proud to provide our technologic experience and expertise to create smart, sustainable and environment-friendly cities.

The smart transport project, as the first smart city project in Macedonia, provided a variety of economic and social benefits, not just for the city, but also for the citizens and the environment in general. The system managed to improve the quality of transport services, to enhance the compliance with the bus timetable and to reduce the passengers' waiting time.

Following the success of the first phase, the smart transport project was extended to all city busses, waving off paper tickets in the City's history and contributing towards the environment protection.

In light with our smart city involvement, we started another environment-friendly project in the field of smart lighting.

The street lighting system is a great example of a public service that can be managed more efficiently by the use of innovative technology. Our smart lighting system, brings significant electricity savings and enables real-time monitoring and control of the city infrastructure. However, the key environmental impact comes from the lower energy consumption and decreased emission of CO₂.

Moreover, our innovative spirit directed us towards a new and exciting project with the mission to enhance the education quality in our country. The project, although still in pilot phase, has introduced a new and innovative digital system, tablets for each student and interactive whiteboards with the aim to improve digital literacy and facilitate the education process by making the content more appealing and interesting for the young generations.

KITCHEN BUDAPEST: INNOVATION, INCUBATION AND EDUCATION WITH MAGYAR TELEKOM'S SUPPORT

The success of Hungary in the 21st century depends on the amount and quality of new ideas. To this end we need a workshop that serves as an incubator for the best forward-looking projects.

Kitchen Budapest (briefly KIBU) is an experimental innovation and incubation laboratory that was established in 2007 with the support of Magyar Telekom. The Company's support has granted sufficient background for KIBU's operations in the past ten years. The primary objective is to provide young talents with support in knowledge, social capital and infrastructure. Kitchen Budapest strives to solve global problems with an impact on mass culture so that ideas work not only on a theoretical-conceptual level theory, but also allowing them to pass the test and become leading examples in the given economic and social environment.

KIBU looks at the Startup Program launched in 2012 as an important milestone; it gives teams with budding ideas the opportunity to make their dreams come true. So far we received 900 requests and accepted 9 teams to our incubation program. It is part of our mission to help ideas come into life.

Since the launch of the Startup Program we experienced that there is high demand among young Hungarians for a program that supports idea development from a very early stage. As a response to this demand, we set up the Talent Program in 2013 where in every six months we give the opportunity to 4-5 teams to develop their ideas to the phase of building a prototype, under KIBU's professional mentoring. Several hundreds of applications were submitted to the special idea-development program, out of which 20 teams were successfully admitted and could present themselves on the closing Demo Day. The objective here was to elaborate product and service ideas that have a valid business potential or cultural vision that could successfully enter the Startup Program later on. A key quality of a good idea is that it provides a solid base for a business case or an innovative development.

The KIBU lift program, available for individual applicants, was launched in 2016 as a spin-off of the Talent Program. The lab offers a fully-fledged technological innovation team and a workshop for the teams or individuals who receive the education grant then the idea-owners have six months to transform the idea into a prototype or a proof of concept.

These investments and business opportunities can help Magyar Telekom Group to develop innovative products and partnerships. The ideas in the laboratories inspire our colleagues who work in the business development area thereby provide a better insight into the environment where our products are designed.

For more information please visit <http://www.kibu.hu>

2.4 PROTECTION OF OUR CHILDREN IN THE DIGITAL AGE

Magyar Telekom is committed to assist children's, parents' and teachers' safe use of the internet and uses its best endeavors to support it. The Company's child protection website helps this effort with controlled content, advise, education and events organized for children and their parents alike to be prepared for risks of the digital world.

For more information, please visit: http://www.telekom.hu/about_us/society_and_environment/society/protection_of_our_children

Child protection efforts of the Telekom Smart Digital Program

The objective of the presentations delivered by our expert volunteers is to present and prevent situations that these days are becoming increasingly destructive for young people: misuse of personal data, public humiliation, harassment, etc. Our primary objective is prevention; to recognize ways to avoid these situations. Besides, it is also important to present the advantages of using digital tools, the info-communication technology as well as the potentials of online communication and transactions that can make our children's lives easier.



Our objective is to contribute to the digital maturity of Hungary and our children's safe and conscious use of the internet.

We would not like to leave our children alone in the digital world. Therefore we encourage them to turn to their parents and teachers should they have any problems in this respect. That is why we have extended the scope of our trainings, to deliver the necessary knowledge not only to children but to adults - parents, grandparents, teachers as well so that they could become partners of our children in today's digital world. We continuously develop our training material and update it with the valuable feedback that we receive during the training sessions so that we could address all relevant questions.

Our presentations also pinpoint the dangers of internet use and provide opportunities for discussions on how to respond to a variety of unwanted situations. During these sessions we primarily focus on data protection issues, use of protection softwares, personality rights, cyberbullying, sexting issues but we are also ready to deal with other questions that may arise. Our presentations are considered to be very beneficial our audience - which is proven by the number of questions and positive feedback that we receive during the sessions.

Child friendly customer service

Magyar Telekom recognized the increased importance of responsible corporate citizenship in the area of child protection and does its best to live up to the relevant expectations. The child lock service on TV programs, the free downloadable content control software are good examples of these efforts.

There is a high demand for the protection of young generations either through parents or through teachers. In parallel to the rapid digitization of our world the number of exposures have also increased and there is an increased level of risk affecting minors through various communication channels. Therefore it is crucially important to equip our customer service staff with competence and expertise in child protection issues.

Our objective is to ensure that our customer service can adequately respond to children and adults alike on any security related question regarding the use of the internet, mobile phones or any other Telekom service.

At **Telekom New Media** we continuously monitor promotion material and mandatory customer information systems in relation to certain premium level fee services and pay special attention to the restriction of adult content.

Pornographic content and gambling

The coercive measures of blocking certain electronic data on the internet was introduced by the new Penal Code (Act C of 2012 on the Penal Code). The most important rules of this

measure are contained in **Act XIX. of 1998** (Act on Criminal Procedures - "ACP") - amended by **Act LXXVIII. of 2013**. The ACP distinguishes between two kinds of measures: the removal of electronic data where the primary target group is hosting service providers and the blocking of access to electronic data which is mainly applicable to telecommunications service providers.

The blocking or filtering of websites containing pornographic content is implemented in conformity with the ACP measures: the court may order to make electronic data temporarily inaccessible by way of temporarily blocking access thereto. When elaborating the new Penal Code the original objective of the above measure was to be able to take immediate action in serious cases (child pornography, crime against the state or act of terrorism) so that the authorities should not have to wait until a final court decision has been made.

However, the amendment of **Act LXXVI of 2015** has significantly extended the scope of criminal offenses where court resolutions can rule on the temporary blocking of content. Such crimes are as follows:

- trafficking of drugs,
- incitement to the use of narcotics,
- furthering the manufacture of drugs,
- drug precursor abuse,
- new psychoactive substance abuse,
- child pornography,
- criminal act against the state,
- act of terrorism
- or financing terrorism

or, if the electronic data is connected to the above criminal acts.

The technical implementation of temporary blocking is the responsibility and obligation of the National Media and Info-Communications Authority (NMHH) and the internet service providers.

In 2003, upon the implementation of the above coercive measure, a similar legislative measure was introduced by the National Tax and Customs Administration of Hungary (NAV) by promulgating

Paragraph 36/G of **Act XXXIV. of 1991** according to which the tax authority without the involvement of a court - is entitled to render any data provided through an electronic communications operator temporary inaccessible if the access thereto or the publication thereof is related to prohibited gambling.

The temporary blocking of content pursuant to the Tax Authority's resolution may last for 365 days.

The link between the potential sanctions of courts and the Tax Authority is so strong that the entity responsible for the enforcement of the measures is the National Media and Info-Communications Authority in both cases.

Since 2014, in accordance with 159/B (3) of **Act C of 2003 on Electronic Communications**, the National Media and Info-Communications Authority has been managing a central database on rulings to block access to electronic information (hereinafter referred to as "KEHTA"), and processes the data entries to that end. This database contains all court and Tax Authority rulings that order the blocking of websites. All electronic communications operators must join the KEHTA thereby all operators are obliged to block prohibited websites. Thus, in line with the provisions of law, Magyar Telekom has also been blocking the given web pages.

Magyar Telekom, as a company listed in the stock exchange, complies with all requirements of the Hungarian law and actively participates in the industry's self-regulation and the respective efforts of the NGOs.

Crnogorski Telekom implemented various measures to help the fight against child pornography on mobile phones since T-Mobile in 2009. These functionalities are active and in place.

There is technical solution (similar to the one in other countries), which relies on filtering websites flagged as child pornography. The list is prepared by the Internet Watch Foundation (IWF) from the UK.

We are also working with the local authorities in cases where child pornography is reported to our call center.

We are providing tips for parents and younger customers on how to protect their privacy, when using mobile phones on our websites.

Service 'Norton internet security' is offered to our customers from 2011. Customers who use this service can protect

themselves not only for viruses, but as well activate option that is so called "cybernannies".

In 2016, Crnogorski Telekom supported initiative "End violence online" implemented by local UNICEF office. The company promoted the application NETfriends that teach children aged 9-11 how to use the Internet safely. The app contains an educational role-play game, which takes children through real life scenarios and makes them learn how to recognize, prevent, stop and report violence.

2.5 DATA PROTECTION

Among the 2016 sustainability objectives, Magyar Telekom pays special attention to the protection of personal data. Magyar Telekom ensures the highest standard of data-security and technical and organizational measures regarding personal data management/processing.

Prior to developing new products and during provision of services, Magyar Telekom considers the protection of its customers' and business partners' personal data as top priority. Magyar Telekom manages personal data in accordance with the Hungarian legislation, the guidelines of the National Authority for Data Protection and Freedom of Information and the European Union directives regarding personal data protection. Magyar Telekom ensures the highest standard of data-security and technical and organizational measures regarding personal data management/processing. Magyar Telekom adopted the data privacy principles of Deutsche Telekom Group (Binding Corporate Rules Privacy).

Magyar Telekom regularly issues trainings prepared for employees and subcontractors to introduce the up-to-date regulations and internal processes regarding the protection of personal data.

In case of contracting with third parties as data processors, Magyar Telekom requests from its contractors and subcontractors to process personal data according to the highest standard of data security and technical and organizational measures.

Magyar Telekom provides multiple channels for its customers to request information and to send complaints regarding their

personal data management. We treat our customers' personal data related complaints and inquiries as matters of key importance, and provide factual responses within the relevant deadline.

In 2016, Magyar Telekom received requests and complaints either from the National Authority for Data Protection and Freedom of Information or either directly from customers, which were duly investigated by the Data Protection Group of Magyar Telekom, and the findings were reported to the complaining customer and/or the authority. In 2016 we received 14 requests, to investigate personal data management complaints and only 5 of these were found to have grounds. Based on the results of the investigation, we review our processes and make the necessary adjustments.

For further information, please visit the following website:
http://www.telekom.hu/about_us/data_protection

In 2015, **T-Systems Hungary Plc.** was operating a certified data and information protection system (ISO/IEC 27001), the objective of which is to ensure secrecy, unharmed operation and uninterrupted availability of our data and information. The data and information protection system manages the data files managed and produced by T-Systems Hungary, the company's business data, the data of its partners and employees, offices, commercial and developed software, buildings, offices, equipment and IT systems. The maintenance of the system is ensured through the application of new and continuously developing information and communication technology. We respond to information security exposures in a way that residual risks may not adversely impact our work and the company's operation.

Makedonski Telekom as a member of the Deutsche Telekom Group, pays great attention to personal data protection in all of its business processes, by implementing the standards stipulated with the personal data protection regulations in the Republic of Macedonia and the standards existing within the Group. The principles for personal data protection which are more thoroughly elaborated in the Binding Corporate Rules Privacy of Deutsche Telekom are implemented in the companies belonging to the Group, and in MKT inclusive.

The Binding Corporate Rules Privacy were adopted by MKT with a CEO Directive on May 2015. These Rules conform to the requirements of the Macedonian Law for Protection of Personal Data, as well as DT Group Privacy Regulations. On October 2016 the CEO Directive was supplemented with the Appendix which regulates more thoroughly the check of personal data protection level by the DPO's Team.

In 2016, the DPO function was performed by DPO and Deputy DPO. The DPO Team supported the projects with privacy relevance related to new products, services and IT systems. The anonymization of customer data in billing system, Single Sign On (SSO) services, OTT TV, OnEmail, Easy to partner (E2P), Data Center, Cloud Services, PAN IP Projects - creation of service for cross border production were the major projects and activities with privacy relevance.

The other main activities of the DPO Team during 2016 were the following:

- active participation in defining of the rights and obligations regulated by the Commissioned Data Processing Agreements and active involvement in drafting requests to Macedonian Directorate for Personal Data Protection for approval of data transfer in non EU countries,
- conducting of the data protection trainings (face to face) for the employees in Call Center and online training for all employees in Chief Operating Officer Consumer Area (the trainings were recorded in employee's personal files)
- giving the opinions whether the data which are treated as a confidential communications according to Law on Electronic Communications, could be provided to the state authorities upon their request and interpretation of the relevant legal provisions that refer to the lawful interception

During the reporting period in MKT were conducted the data protection audits/inspections, as follows:

- Regular inspection by Directorate for Personal Data Protection (the conducting of this inspection was continued in 2017)
- Few extraordinary inspections by Directorate for Personal Data Protection based on customers complaints (it should be emphasized that no penalty was imposed)
- Employee Data Protection Audit conducted by Internal Audit Department

One of main focuses of DPO Team is the follow up/overview of the implementation of the imposed measures with the Reports from the performed audits/inspections.

Crnogorski Telekom data protection related activities in 2016:

- amendments to the Data protection Directive in regard to special data processing - adopted on October 2016
- ICS control done
- Supporting in HR Aramis project
- Supporting in PanIP project
- Supporting in OneErp project (one CDPA concluded for all OneErp processes)
- CDPA concluded with Post Office as major processor of CT's customers personal data
- CT quarterly reports to Group Privacy
- Intensive cooperation with National Data Privacy Agency

2.6 SAFE USE OF MOBILE PHONES, ELECTROMAGNETIC FIELDS

In order to provide high-quality services to the Hungarian, Macedonian and Montenegrin mobile telephone subscribers through the mobile telecom network, UMTS licenses were distributed among operators in Hungary in December, 2004, for operators in Montenegro in June, 2007 and for operators in Macedonia in June, 2009. Besides, in December, 2011 Magyar Telekom acquired the right to launch the LTE service and the commercial rollout started in 2012. By the end of 2016 the frequency right acquired in the 800 MHz band allowed that almost 100% of Hungarian citizens can use Magyar Telekom's LTE service.

However, the rollout of the LTE related networks may heighten the interest of the communities in the issue of electromagnetic fields, which will increase the importance of the company's strategy in addressing the issue.

The electromagnetic exposure limits in Hungary have been determined in line with the guidelines set by ICNIRP (International Commission on Non-Ionizing Radiation Protection), which are based on the practice applied in most European countries and on Recommendation 1999/EC/519 of the European Commission. As a result of the relevant Hungarian decree adopted in August, 2004 (63/2004./VII. 26. - ESzCsM) on the basis of ICNIRP guidelines, the regulations in Hungary are compliant with the EU regulation on electromagnetic fields.

In the framework of the company's overall education program, new employees are informed about issues concerning electromagnetic fields as part of their mandatory orientation training.

Within Deutsche Telekom Group, issues related to electromagnetic fields are regulated as part of DT's EMF objectives, the so-called 'EMF Policy Recommendations', with special emphasis on transparency, information provision, support of and involvement in research. Magyar Telekom applies the relevant Deutsche Telekom recommendation as mandatory regulation since 2004, while T-Mobile Macedonia since March, 2011. The Management Committee of Crnogorski Telekom adopted the company's EMF regulations aligned to the DT regulations on October 27, 2011.

To support preventive action both Magyar Telekom and T-Mobile Macedonia set up dedicated EMF workgroups, which meet quarterly and monitor EMF-related national

and international developments and respond to the EMF-related queries of the authorities, residents or employees. Further information about T-Mobile International's EMF Policy Recommendations' adopted by Magyar Telekom is available in English on the website of T-Mobile International.

In the framework of this policy, Magyar Telekom and its subsidiaries address the complaints and inquiries in an efficient manner.

The EMF policy was also endorsed by Crnogorski Telekom and T-Mobile Macedonia. The policy sets forth the basic principles applicable to the responsible use of mobile communications technologies. In this document we assume commitment for greater transparency, for the provision of information and for involvement in the relevant processes.

Mobile network, network development

According to the Company's common practice station antennas are installed in a way that employees normally cannot stay in front of them, they cannot and do not have to work in the relevant zone, and passage ways do not cross the areas in question.

If, in extraordinary cases, people must pass or work in front of the antennas – this usually happens related to external contractors' work, e.g. when renovating a building, safety distance data are made clear and available. If necessary, site measuring can be conducted, or in justified cases the antennas can be temporarily relocated or the performance of the transmitter can be reduced.

If a Magyar Telekom employee performing work in the vicinity of an antenna detects unidentified signal source, he will use his RADMAN personal radiation detector to determine the boundaries of safe zone and prevent health risk.

Compliance with the value limits defined by law for Magyar Telekom mobile network is audited and certified by independent measurement bodies. In 2016, 11 on-site non-ionization electromagnetic exposure measurements were made, all of which found the emission levels to be under the relevant limits.

The company acts in accordance with the relevant laws and consults, cooperates with the relevant stakeholders in each and every case when building new base stations. If needed, citizens' forums are held with the participation of all concerned parties to reach an agreement.

Communication

Despite the fact that the radiation of Magyar Telekom's handsets and mobile base stations is well below the ICNIRP emission limits, the Company considers it important to provide information on handsets and base stations, both to employees and customers.

We coordinate these matters several times a year with the National Media and Info-Communications Authority's experts and supply measurement data for their purposes.

In addition to internal communication, in 2016 Magyar Telekom continued to respond openly to inquiries about the safe use of mobile phones.

The SAR values of the devices are included in the user manuals in the mobile set packaging and are available in Telekom shops as well.

Research

Exposure of the world's population to non-ionizing electromagnetic radiation and electromagnetic fields has considerably increased in recent years. Since a civilized society cannot avoid the use of equipment emitting non-ionizing electromagnetic radiation, like mobile telecommunication equipment, satellite and terrestrial television/radio broadcasts, flight navigation, meteorological satellites, radio astronomy, space exploration, the exposure of the environment and the population is expected to increase further in the future. World Health Organization (WHO) and several other international organizations, as well as research groups monitor the impact of technological development on human health.

The assumed health effects of mobile telecommunication have been studied and analyzed for more than twenty years. So far scientific researches have not confirmed any negative health impact of mobile telecommunication on the human body.

The largest research project of this type, the INTERPHONE project of WHO-IARC (International Agency for Research on Cancer) conducted with the participation of 13 countries, was closed in 2011. After closing the INTERPHONE project on May 31, 2011, WHO-IARC classified electro-magnetic fields into the 2B potential carcinogenic category. According to the Chairman of the WHO-IARC workgroup "the evidence, while still accumulating, is strong enough to support a conclusion and the 2B classification. The conclusion means that there could be some risk, therefore we need to keep a close watch for a link between cell phones and cancer risk". At present the following agents are classified to 2B category: coffee, petrol, the exhaust of petrol-fueled engines, nickel and alloys, talcum powder, network frequency magnetic field and mobile phone use as well.

Through its GSM Association membership, Magyar Telekom has directly contributed to the progress of independent research into the health impacts of mobile networks.

In 2015 Magyar Telekom and OSSKI (National Research Institute for Radiobiology and Radiohygiene) conducted yet another radio frequency micro-environmental personal exposure research. All measurement results of the research-development project were significantly below the ICNIRP threshold limit.

Every national affiliate of Deutsche Telekom is committed to supporting independent research aimed at extending the

Company's knowledge on the impacts of electromagnetic fields. This makes Deutsche Telekom Group one of the biggest supporters of research on this subject.

As a result of the three mobile operators' cooperation a new website - **EMF portal** - was created in 2006 and continued its operation throughout 2016 where questions can be asked regarding EMF issues, news are available about the topic and readers can access the findings of the EMF measurements purchased by the operators from external organizations.

All content provisioning related activities within **Makedonski Telekom** are in full compliance with all areas of all relevant regulations and legal framework, with increased focus on data protection regulation and copyright laws, but also all other relevant regulation related to the content service providing.

It is strictly regulated that the content and content related services shall not be in contrary to the public moral and the public order (meaning that indecent, vulgar, intimidating, threatening or other illegal content is forbidden) as well as that the content shall not be aimed at incitement or call for military aggression against the state order or stirring up ethnic, racial, gender or religious hatred and intolerance, terrorism related activities or violation of the rights and freedoms of other persons.

Crnogorski Telekom believes that the formation of the EU content Hub, supporting Natocs in acquisition of content will lead to cost savings and greater transparency among Natocs, while ensuring compliance with legal and ethical standards. Several activities in 2016 resulted in savings and new group contracts for content acquisition across the DT group. In addition there is a group level approach of reducing risk. Most content providers are now centralizing their sales activities, eliminating resellers, distributors and partners, which results in further risk reduction and Crnogorski Telekom is benefiting from joint acquisition.

Video on demand acquisition is also continuously handled on the group level, reducing legal and ethical risk.

The EMF policy of Crnogorski Telekom was approved by the Management Committee on 27. October 2011. The document is aligned with DT principles.