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TECHNOLOGY – TOPICS

Fear of 5G network is a product of fake news

Digital market is still very fragmented in the Western Balkans, with evident digital gap between the region and the EU

Fifth generation networks are a continuation of mobile network evolution and serve as a basis for further development of society and economy in the years to come, due to fast evolution of digital technology in all segments. The effects of new generation networks are already seen in communications and exchange of information, and after their integration in business and public processes, economic productivity will increase and so will the quality of public services.

Introduction of 5G technologies will take the next 10 years; in the first phase it will be a continuation of 4G network in order to increase the speed and thus enable application of new advanced solutions by 2025. The comprehensive Europe 5G Readiness Index 2019 report by inCITES Consulting S.A.R.L states that Finland ranks best prepared European country for introduction of 5G technologies with index of 71.8 points while ranking last is Bosnia and Herzegovina with more than half the index of only 35.2 points. Results of the analysis show that there is a significant gap in 5G readiness between western and eastern European countries.

Digital literacy in the Western Balkans

Digital market is still very fragmented in the Western Balkans. Digital gap between us and the EU is evident. We are significantly lagging behind the EU averages. Digital infrastructure is still under-developed, broadband networks are not widespread in WB.

Development and usage of e-services, as well as cybersecurity and digital literacy in the region, are below the optimal level, believes Majlinda Bregu, Secretary General of the Regional Cooperation Council (RCC), and adds: “According to our Balkan Barometer 2019, more than 76% of the WB citizens say they use internet, but only 4% say they are paying bills online, and just 2% use government e-services. According to same data majority, 58% of businesses in WB see digitalisation of public services as the key avenue for increasing transparency and predictability of government conduct.” So, there is a lot to do in this field in order to improve well-being and the quality of life of the citizens. Within the Multi-Annual Action Plan for a Regional Economic

Area in the Western Balkans the RCC has pinpointed areas where regional cooperation can contribute in reaching this goal, says Bregu.

According to the above Index, best ranking ex-Yugoslav country is Slovenia at 19 place, with Croatia at 31 and Serbia at 33 place. D. Sc. Boštjan Batagelj of Faculty of Electrical Engineering, University of Ljubljana, explains how Slovenia is successfully addressing this technologically demanding process: "We all need digitalisation of society and applied information technologies. This is possible only with broadband telecommunications network which will enable transfer of large quantity of data in short time. New applications set new requirements for the network and new methods for data delivery".

Difference between 4G and 5G networks

It is possible to increase the capacity and efficiency of the existing 4G network structure by upgrading it to 5th generation network, and thus the users will slowly and gradually move from 4G devices to 5G mobile phones. "Some are happy with 4G speed used to transfer data at home, bypassing xDSL and fibres to home. This is the function of applications people use. On the other hand, new smart TVs allowing downloading high resolution films and requiring user interactivity are currently fixed equipment and are thus best supplied with high speed data channels such are high speed optical fibres," believes Batagelj. He further adds that the more important question, which is impossible to answer given that the answer is multidimensional, is who is the user and what he/she needs the connection for, and how much the user is willing to pay. Long-term advantage is found in both systems, wireless (such as 4G, 5G or WiFi) and optical. They cannot be regarded separate from one another; they are converged and free of charge. New applications will perhaps require fibres which deliver several Gbit/s, while new mobility requirements may need wireless systems delivering more than 1 Gbit/s. There are also new systems emerging which directly combine optical and wireless network, and it is expected that they will have a bright future and potential to deliver data where traditional wireless and fibre systems are limited. For example, microwave photonics, where different wireless (radio) signals are transmitted via fibres to be delivered to remote antennas or inside buildings.

Telecom operators all around the world are testing 5G, and in many countries, 5G networks are already commercially launched. By the end of 2019, 15 players have launched commercial 5G services in 9 EU Member States. 5G testing is on the way in Western Balkans as well. Albania and Serbia already have 5G pilots, and Montenegro and North Macedonia are planning to do so this year. "One of the key milestones in 2019 has been the signing of the Regional Roaming Agreement by all WB 6 in April 2019. It enabled significant reduction of roaming costs to all WB mobile end-users from 1 July 2019. We are now looking forward to the third Western Balkans Digital Summit that is to take place in Tirana in April. Previous ones were held in Skopje and Belgrade. So, things are moving forward, but we need to step up the speed. Competition is fierce in all fields. Fourth Industrial Revolution is not waiting for anyone. Innovative organisations survive and thrive in it. Others perish," believes Bregu.

According to official data, Bosnia and Herzegovina is lagging behind in this process, since 4G network has been set up only in 2019; however experts are involved in this issue and are trying

to follow the standards. “In September last year I chaired the session on the hot topic of integrated microwave photonics in Sarajevo during the **EUIWMP** project conference on Fiber Optics in Access Network (FOAN 2019). I will definitely advise investing in wireless as well as optic infrastructure. And bear in mind that optic infrastructure can transfer the same amount of data with 1000 times less energy consumption,” says Dr Batagelj.

Should we fear 5G network?

Matjaž Klančar, editor of Ljubljana’s Monitor, says: “Our magazine regularly publishes articles which dispel pseudoscience and sensationalism. Just recently we focused on 5G and fear of electromagnetic radiation. State radio and television recently also tackled this topic in its TV and radio shows. Unfortunately, some magazines, TV shows of small private broadcasters, especially some Internet groups, are active in spreading dreadful campaigns. It is therefore most important to improve media literacy in the country, which will help people with all kinds of disinformation. However, a very long way is still ahead of us, especially because it seems that we have been walking backwards since the onset of social media.”

During January, protest were held in Zagreb, Belgrade and Ljubljana, warning people of the dangers brought about by the project to introduce 5G networks. Regarding these dangers Batagelj states: “Allow me to first clarify one thing. 5G technology dangers some unknown people presented are entirely made up. All dangers are product of fake news travelling through Internet social media (e.g. Facebook) much like viruses. The truth is quite opposite. There is no need to worry about health, since 5G radio part is very similar to the 4G radio part. In fact, 5G base station will radiate less power than 4G base station”. Bagatelj emphasises that 5G has more green technology and less carbon footprint than 4G. Large part of scientific development is focused on reducing energy consumption and increasing efficiency. Also, there is no need to worry about safety and privacy regarding 5G network; 5G does not allow large data or face recognition, because these technologies have been developing for over 10 years without 5G network and 5G network is not guilty of their development and use. Thus, fear of 5G technology is completely unfounded.

Western Balkans and Slovenia

In many areas Slovenia can serve as a model to other WB countries, both regarding meeting the EU accession standards and its attitude towards science and technology. Regarding the current activities Batagelj says: “Mobile operators in Slovenia are testing 5G technology in some smaller areas. They are preparing for the first commercial introduction which will not happen this year, because our regulatory agency has to first run 5G spectrum auction.”

Still, significant concrete benefits of 5G network are not yet felt by Slovenia. “I think people in Slovenia are still far from the moment when we will be able to see some benefits of 5G technology. In my opinion, for the time being we do not need 5G network, because we have a very advanced 4G. On the other hand, we have to bear in mind that 5G is not a revolutionary technology marketing wishes to present. Since we already have 4th generation mobile networks before 5G, we can say that 5G is an evolution of mobile network technology. Mobile system has been developing incessantly for the past 30 years and 5G is something mobile technology can

do (today) and was not able to do 10 years ago. 5G network will enable enhanced mobile broadband network experience, ultra-low communication latency with 10 times reduced end delay and 10 times better reliability. It will enable up to a million linked devices per square kilometre,” estimated Batagelj.

In the end Bregu says that the region should make the right decision and work together even closer in the future to make the most out of the Fourth Industrial Revolution for our economies and our citizens. To relish in the good it is bringing, but also to make sure that ‘the bad’ is remedied to serve our purpose.