



The road to 5G

Barcelona, 02 March 2015

Speech by Commissioner Oettinger at the Mobile World Congress

Good morning Ladies and Gentlemen

It is a great pleasure to be with you on the occasion of this plenary panel on "the road to 5G". It is my first time at Mobile World Congress and I am really impressed by what is on display here. Just one thing: I thought the show was about phones, not about cars!

This is precisely the point: everything is turning digital, from cars to cities to services to machines. The digital economy is simply becoming THE economy.

And the future network infrastructure, 5G, will become THE infrastructure. Everybody and everything will use 5G. Anywhere, at any time, and on the move, always best connected with almost zero delay and a perceived limitless capacity. Today, we can celebrate that Europe is back in front to continue the journey towards this bright 5G future.

5G

So let's start with it. This afternoon, the 5G-Public Private Partnership, which was launched here in Barcelona last year, will present our 5G vision, and I can already tell you that it is very exciting.

The digitisation of our economy and society is accelerating. It is unstoppable. With the Internet of Things, we see a new era of connectivity where billions of devices exchange data and instil intelligence in our everyday life. From watches to shoes. From fridges to heating. From hospitals to factories. Any industry will need to adjust to this new reality. But this requires a new generation of communication networks.

5G is expected to be the connectivity infrastructure that will foster this industrial and societal transformation. It is not "only" about more of the same: more capacity, more content, more speed. This is needed, but not good enough. It is about a network infrastructure that is as easy and pervasive as the air we breathe, one that can be used for all sorts of different and personalised usages.

A second key aspect is related to innovation. 5G should become an innovation platform. And with softwarisation and network virtualisation, open networks platforms will lower market entry barriers for service developers, and stimulate a market of third party providers. The same as with cloud computing. Today, we have millions of apps that work on different smart phones platforms. Tomorrow with 5G, the network itself could become a development platform!

5G represents an opportunity for the telecom sector to reinvent itself. With 5G, telecom operators should be able to provide specialised network services to a series of new industry partners: from the automotive, to rail, health or energy sectors. To guarantee that connected cars will be able to react in less than 1 millisecond and avoid collisions. Or that tele-medicine will save lives and not be stuck in traffic. This is why we need the right kind of rules for Net Neutrality. To guarantee an open Internet. But also to allow such specialised services to flourish.

In a nutshell, the advanced 5G infrastructure is expected to become the nervous system of the Digital Society and Digital Economy.

The EU industry has a major role to play in the context of global 5G. It has a strong influence on the competitiveness and innovation of other sectors. Beyond economic matters, it is also about security and technological sovereignty for Europe.

What has been done

These reasons led us to launch a 5G Public Private Partnership. With 700 million euro earmarked under the Horizon 2020 Research and innovation programme to get 5G up and running, while industry partners have committed to leverage the EU funding by up to five times. In one year of existence, this partnership has delivered very convincing results.

- **First, research is under way.** The EU is pioneering 5G research with a set of projects already reaching completion. You can see some dedicated demonstrations here today, at the EC booth and on

the corporate stands of key industrial players who participate in these research projects. I invite you to visit projects like METIS, or 5G NOW, to quote but a few.

More is under way, as we will soon award the research grants for 125 million euro to 20 projects to deliver the key building blocks for 5G. They cover novel network architectures, new radio technologies, new service platforms, and innovative utilisation of spectrum. They will place European actors in very good position to contribute towards the future standardisation and spectrum milestones ahead of 5G.

- **Second, we have progressed on the international front.** The European Commission and the Republic of Korea signed a [joint declaration](#) on 5G. It is our intention to sign similar agreements with other key regions of the world, notably Japan, China, and the US. We target a single global 5G standard and global spectrum harmonisation. This will maximise global interoperability, and economies of scale.

- **Last but not least: the 5G vision will be delivered this afternoon.** It is a global vision made in Europe and we hope that the whole world will embrace it.

So, what lies ahead?

5G is becoming a concerted global effort in which Europe is playing a leading role. Early 5G deployment is targeted beyond 2020. By then, we need to collectively address a number of challenges beyond research:

- First, **we must identify new spectrum** for high-performance 5G wireless broadband with a global footprint.

Spectrum - as the essential resource for the wireless connectivity of which 5G will be the main driver - stands at the centre of the digital transformation and is crucial for the completion of the Digital Single Market.

Early identification of a "5G spectrum bands" will contribute to Europe becoming a global hub for 5G development and investments. In the past, European position may have been fragmented, but we cannot afford it in the 5G race. We must build together a European approach in the international spectrum debates with other global actors. The International Telecommunication Union's World Radio Conference 2015 is a key milestone, to prepare for the in depth debates that should take place at the next conference in 2019.

But there can be no successful 5G deployment in Europe without enhanced coordination of spectrum assignments between Member States. A call for spectrum reform that European leaders set out in October 2013.

The Commission "Connected Continent" package was a first step in this direction. I welcome the progress in Council, now focussing on net neutrality and roaming. However I will continue to work with them and the European Parliament to achieve a political compromise on some other elements of the package that are vital to a wirelessly connected society and economy.

It contains important measures to facilitate small cell deployment and Wi-Fi which are at the heart of 5G success. Removing administrative barriers for their rapid deployment is the forward-looking policy of today to enable 5G tomorrow.

- Second, the **development of standards. 5G standardisation** is expected to start in 2016. Research results need to be leveraged early enough so that industrial actors can have very clear positions to defend it in standardisation fora. From the public side, we need to make sure that European and citizens' interests are safeguarded, notably in terms of global interoperability and openness. Also reforms of the standardisation process, notably on intellectual property, must not discourage investments in research;

- Finally, the 5G full potential can only be realised if **close partnership with "vertical" industries** are implemented. We need to learn how to more systematically work across industrial siloes and to create cross sector added value. Also adjusting regulations, as they are not always compatible across different sectors. Connected cars are a typical example for which I have already launched an exploratory initiative.

The more immediate future

5G is about tomorrow, yet we need to solve a number of obstacles already today:

- **4G deployments.** 5G will not supersede 4G but build on it. Being a 5G lead adopter requires to be a 4G leader. But Europe is still lagging behind on 4G deployments. There are however encouraging signs, and planned industrial investments on 4G are ramping up. Even more encouraging, Western Europe is leading deployment on latest Long-Term Evolution (LTE) generation, LTE Advanced, with about 50% of networks deployed in Europe. But Europe must do more.

The Juncker package of 315 billion euro is a huge opportunity in that respect. Investment in digital infrastructures is clearly part of this Commission priorities. We are taking steps towards adoption of the Commission proposal on European Fund for Strategic Investments as swiftly as possible so that new

investments can start flowing later this year. We have also worked with Member States to define a pipeline of possible projects. Member States have already identified almost five hundred proposals for ICT and broadband projects representing a total investment sum of 151.7 billion euro in the next 3 years. The interest is there, and I encourage the sector actors to support the relevant Member States proposals;

- **Access and connectivity** are core issues for the Digital Single Market strategy announced by President Juncker. In May the Commission will present this Strategy, feeding into the June European Council. But for me, it is clear that a Telecom Single Market is a cornerstone to the Digital Single Market.

To conclude:

With 5G, Europe has a great opportunity to reinvent its telecom industrial landscape. But 5G is much more complex than earlier generations, and it requires committed partnerships not only with the traditional telecom actors but more generally with the vertical usage sectors. It also requires new ecosystems of software developers. 5G is also a bold opportunity to spearhead the digital industrial transformation of Europe, and to support the Digital Single Market.

We are now at the cross road of exciting developments. I expect that the EU industry at large will set the path towards an ambitious 5G technology development and deployment roadmap. And the Commission is providing undivided support to the roll-out of these promising new technologies, at single market and global scale.

Thank you for your attention

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