

Techno-Economic Implications Requirements for Next Generation Mobile Networks

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Description

The point of departure is that the increasing amount and variety of different services and the fast growing number of users with various service and network needs can cause circumstances where the coverage and bandwidth capacity of where there are rising standards for the quality of network provision, networks need to be improved. While e-mail and file transfers were among the very few applications that the Internet was utilised for in its early years, the variety of different services and applications has grown considerably with services requiring very low latency, for For instance, services like Voice over IP and those requiring a lot of bandwidth, like downloading and streaming video, Other Services tied to the Internet of Things have additional network needs.

Therefore, there will In regard to latency, jitter, scalability, reliability, and other factors, there will be growing but also differentiated demands on capacity and quality. A result of the variety of services offered and the rising bandwidth demands of services that are "hungry" for bandwidth a difficulty for network providers as well as a fundamental best effort infrastructure investing in network infrastructures. This applies to wired as well as wireless networks, and it applies especially to mobile networks where the 'last mile' generally has lower bandwidth than wired networks. The bandwidth of mobile access networks has certainly grown tremendously during the past few years, but there are still issues relating to the average bandwidth that the users get as well as to the fluctuations in bandwidth. When seen from the user's perspective, the requirements include security and quality of services for many users in addition to coverage and bandwidth. This holds true for many professional users who need to be certain that communications are secure, quick, and without data loss. It also pertains, generally speaking, to all people who rely on Users of cloud services must have the same level of quality and security as they would if their data were stored on their private servers. New demands on the quality of the communications infrastructures will result from these requirements service, sturdiness, and flexibility.

The overall developments contributing to the new and increasing requirements on networks can be related to the convergence of IT, telecoms and the media and to the fact that information and communication technologies to an increasing degree play an integrated enabling role for all other social and business activities. Convergence developments have led, for instance, to bandwidth requiring video services being provided on the Internet, and the business and public users of Internet increasingly rely on communication networks to run their daily operations. Especially the issue of Quality of Services is central. These questions are addressed by each paper in this special issue. They analyse consumer requests for new services with particular reference to mobile networks in their paper. The issue of peering and transit, as well as

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the growth of cooperative peering in Latin America, which will lead to lower interconnection costs and higher Quality of Service, is of interest to Hernan Galperin. necessary conditions for the future cellular networks The paper's opening claim is that consumption and utilisation of Internet services are gradually shifting from In order to handle the varied demands placed on these networks by new apps and devices, it is imperative to examine the growth of mobile networks in the future. Following the introduction, the first section contains a numerous services that will propel the growth of mobile networks are identified, and their throughput requirements are studied.

Throughput is merely one of the QoS factors, and the writers are well aware that a fully developed requirement analysis requires looking at other parameters like latency. But to keep the model straightforward, the emphasis on the Ongoing need analysis. After the requirement analysis, the paper defines a baseline scenario that is created by combining: (a) the number of mobile broadband subscribers; (b) the penetration (number of users) and evolution of technical requirements for each of the services; and (c) the combined usage of services. The result is a time series giving the evolution of required throughput per user. This is then discussed against the evolution of technical parameters in mobile networks, including the allocated spectrum, spectral efficiency and the use of MIMO (multiple-input and multiple-output), etc. In the discussion of the base line scenario the paper points at technological as well as strategic and policy enhancements that could be implemented to improve the future developments of mobile networks. As a conclusion, the paper states that the traditional virtuous cycle of investment, innovation, and adoption of services of the mobile industry has been broken and that it is now the innovation and adoption of services by users, which require investments from the mobile operators, calling for new business models linked more directly to the use of network resources either by consumers or other parties [1-5].

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Conflict of Interest

The Author declares there is no conflict of interest associated with this manuscript.

References

1. Yamada, Koji, Tai Tsuchizawa, Hidetaka Nishi and Rai Kou, et al. "High-performance silicon photonics technology for telecommunications applications." *J Telecommun Syst Manag* (2014).
2. Stieglitz, Stefan, Deborah Bunker, Milad Mirbabaie and Christian. "Sense-making in social media during extreme events" *J Telecommun Syst Manag* 26 (2018): 4-15.
3. Feijóo, Claudio, José Luis Gómez-Barroso and Sergio Ramos. "Techno-economic implications of the mass-market uptake of mobile data services: Requirements for next generation mobile networks." *J Telecommun Syst Manag* 33 (2016): 600-612.
4. Kantor, Miroslaw, Krzysztof Wajda, Bart Lannoo and Koen Casier, et al. "General framework for techno-economic analysis of next generation access networks." *J*

Telecommun Syst Manag (2010): 1-4.

5. Manso, Marco and Bárbara Manso. "The role of social media in crisis: A European

holistic approach to the adoption of online and mobile communications in Crisis response and search and rescue efforts." *J Telecommun Syst Manag* (2013): 93-107.

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