

Present Status and Future Challenges in the Telecommunication-Network Field

Frankley Steve*

Department of Telecommunications, Princeton University, New Jersey, USA

Introduction

Journal statistics make it quite evident that the competition to the rate of publication in computer communications is quite high, and only the best manuscripts are accepted for publication. I therefore want to use this chance to offer some advice to authors to the journal are encouraged to submit publications that would have a good likelihood of being published in Computer Communications.

Description

A key element for a successful submission is the topic of the manuscript. COMCOM submissions should address hot topics in the computer- and communication-network field, showing a clear progress beyond the state of the art. On the other hand, contributions presenting variations of known concepts, or addressing outdated topics, or topics that are marginal with respect to the journal scope (and for which better publishing venues exist), will be, almost surely, rejected. To assist the journal's authors in creating papers that can be published in Computer Communications going forward I have chosen a group of topics with the assistance of the journal's area editors. The manuscripts submitted should address the issues that we want addressed. The convergence of communication networks towards all-IP integrated networks makes Internet at the centre of the computer communication research, and hence all research issues related to its revolution are hot topics for Computer Communications.

While the main innovations, currently, come from the Internet edges, with the explosion of wireless technologies and overlay architectures, under the push of novel services also the Internet core is changing. A popular research area for the Internet of the Future is the study of novel architecture and protocols and in recent years, in recent years, the scientific community has pushed for Internet design and protocols that are information-centric. Furthermore, Energy conservation is becoming more and more important, not just in the wireless portion of the network but also the heart of the Internet, too. This results from the rapid expansion of energy usage that results from an exponential rise in the transported data, making energy conservation a crucial consideration in network administration momentum as the new networking architecture. However, several issues must be investigated to ensure the practical feasibility of this approach in networks and data centers. Hot research topics for Software Defined Networks include, among others: scalability, applicability to MAN/WAN, cross-layer design and interaction with other layers/protocols, energy savings, SDN use for security and network management. Optical network technologies are still gaining ground in the paved path from a set portion of the network to each individual residence the convergence of

*Address for Correspondence: Frankley Steve, Department of Telecommunications, Princeton University, New Jersey, USA, E-mail: frankleysteve@emline.org

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optical broadband access, and enterprises Hybrid optical-wireless networks with their wireless counterparts networks) has been getting more and more attention. The number of people accessing Internet through a mobile device is continuously growing at a fast rate, and wireless technologies are the predominant technologies for Internet access.

Cellular technologies, such as LTE and LTE-advanced, are the reference technologies but they have to cope with their success. So far the physical layer research and development have been able to cater for the increasing appetite for capacity. However, there is a growing need to take into account spectral efficiency and total energy consumption of the systems request that the networking community take the initiative. Must come up with ways to make better use of the limited spectrum resources networks for cognitive radios and other cooperative Communications techniques are suggested as ways to greatly improve spectrum efficiency. There has been much development in this area, but before a deployment of such networks their vulnerabilities need to be carefully addressed new traffic types, in particular IoT and M2M traffic, also require new theoretical studies. Traffic to and from things and vehicles will have characteristics that are very different from traditional telegraphic models. Both field measurement data and stochastic models of new traffic types are of interest, in particular when spatial and temporal characteristics are included. Energy harvesting networks are becoming a more pertinent study issue in general.

There are various novel energy harvesting paradigms, such as exploiting energy contained in electromagnetic waves, magnetic induction, etc., in addition to the traditional renewable sources like sun, vibration, and wind. In order to seriously consider actual battery-less operations, more research is required to close the gap between theory and real-world implementations. The enormous popularity of smart phones and other mobile hand-held devices also has a great impact in terms of network services, with a dramatic increase in wireless video traffic. Until recently, there were very few mobile devices with any capability for video reception. According to the latest estimations, mobile video traffic is expected to be two-thirds of the global mobile traffic by 2014. However, a number of significant challenges need to be addressed and overcome before the full potential of mobile video networking is reached. These challenges include: services and applications, pricing, social networking, QoS vs. QoE, traffic control, video in hybrid networks [1-5].

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Conflict of Interest

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

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