# Meeting the Needs of Growing Traffic: Challenge for Cellular Wireless Networks

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**ABSTRACT**
Data traffic on cellular wireless networks has been growing steadily over the last few years. Mobile video is one of the fastest growing areas of wireless data usage. We seek to understand this important area – the evolution and trends of consumer video usage. Making extensive use of a large dataset, we look at the changes in the mobile video landscape. We also look for ways to optimize the delivery of video traffic to make it as efficient as possible and maximize the end-user's experience on cellular networks. We look at the various optimizations techniques from the perspective of being technically as well as economically viable.
We also look at mobile data traffic at large events like the Super Bowl, as this poses a significant challenge in the planning, design and deployment of wireless networks. With LTE becoming available widely, we look in-depth at the user behavior and traffic demand at this year's Super Bowl. The study can be used to guide the design of communication networks at large venues in the future.

**Categories & Subject Descriptors:**
D.4.8 [Performance]: Measurements

**General Terms**
Performance, Measurement

**Bio**

Dr. K. K. Ramakrishnan is a Distinguished Member of Technical Staff at AT&T Labs-Research. He joined AT&T Bell Labs in 1994 and has been with AT&T Labs-Research since its inception in 1996. Prior to 1994, he was a Technical Director and Consulting Engineer in Networking at Digital Equipment Corporation. Between 2000 and 2002, he was at TeraOptic Networks, Inc., as Founder and Vice President.Dr. Ramakrishnan is an AT&T Fellow, recognized for his fundamental contributions on communication networks and lasting impact on AT&T and the industry, including his work on congestion control, traffic management and VPN services. He is an IEEE Fellow, and has received other awards. His work on the "DECbit" congestion avoidance protocol was recognized in the 1995 retrospective issue of ACM Sigcomm Computer Communication Review as one of the 16 most important papers published over the previous 25 years in ACM Sigcomm publications. The work once again received the ACM Sigcomm Test of Time Paper Award in 2006. He has published nearly 200 papers and has more than 100 patents issued in his name. K.K. has been on the editorial board of several journals and has served as the TPC Chair and General Chair for several networking conferences and has been a member of the National Research Council Panel on Information Technology for NIST.

Dr. Ramakrishnan is involved in a variety of technical activities including Content Delivery, Cloud Computing, and Network Architecture at AT&T Labs Research. He is also involved in setting strategic direction for research activities in AT&T Labs Research. His recent efforts have been in Video Delivery, both in the context of IPTV as well as over the AT&T Mobility networks. He has also been involved in AT&T's efforts to 'Network the Cloud' and in the recent research on Information Centric Networking.

K. K. received his MS from the Indian Institute of Science (1978), MS (1981) and Ph.D. (1983) in Computer Science from the University of Maryland, College Park, USA.


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