

# 2<sup>nd</sup> International Conference and Exhibition on **Lasers, Optics & Photonics**

September 08-10, 2014 Hilton Philadelphia Airport, USA

## Hybrid switching for scalable and efficient data delivery in the big data era

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The massive big data transfer requirements in the Big Data Era are posing unprecedented challenges on today's network infrastructure. Delivering data in a cost effective and scalable manner is of critical importance to support the continued growth of cloud services. In this presentation, the author will first show that the two characteristics of data flows, bulk in size but tolerant for delivery delay. We then argue that the two characteristics provide space for designing scalable and efficient network node architecture. We revisit the problem of delivering bulk data on top of dynamic circuit switched networks, with a particular focus on how the deadline and size of the requests may affect the network performance, and the implications they have on the capability of the underlying network. We study the data aggregation process and the selection of optimal aggregation parameters based on characteristics of requests and network capacity. We also show how in-network storage may help reduce the connection blocking and improve network throughput. We further show how the Software Defined Networking (SDN) concept may be used to control the proposed network and to provision on-demand services to deliver inter-data center and E-Science traffic.

### Biography

Weiqliang Sun is an Associate Professor in the Department of Electronic Engineering in Shanghai Jiao Tong University. He is actively involved in the research of high speed networks, network control and management, and network applications. He has about 60 publications in peer reviewed journals and conferences. He is involved in the standardization of Generalized Multi-Protocol Label Switching (GMPLS) performance measurement in IETF, and co-authors RFC 6777 and RFC 5814. He has served as an invited speaker on many international conferences and is member of Technical Program Committee of a number of technical conferences, and organizer of the Sino-Korea Workshop on IPTV and NGN (2007-2010).

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