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Metrics for broadband networks in the context of the digital economies

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In a transition to automated digital management of broadband networks, communication service providers must look for new metrics to monitor these networks. Complete metrics frameworks are already emerging whereas majority of the new metrics are being proposed in technical papers. Considering common metrics for broadband networks and related technologies, this paper offers insights into what metrics are available, and also suggests active areas of research. The broadband networks being a key component of the digital ecosystems are also an enabler to many other digital technologies and services. Reviewing first the metrics for computing systems, websites and digital platforms, the chapter focus then shifts to the most important technical and business metrics which are used for broadband networks. The demand-side and supply-side metrics including the key metrics of broadband speed and broadband availability are touched on. After outlining the broadband metrics which have been standardized and the metrics for Nmeasuring Internet traffic, the most commonly used metrics for broadband networks are surveyed in five categories: energy and power metrics, quality-of-service, quality-ofexperience, security metrics, and robustness and resilience metrics. The chapter concludes with a discussion on machine learning, big data and the associated metrics.

Biography

Salman M. Al-Shehri has over 20 years of direct hands-on experience with military communications systems. He has been involved in the spectrum management and planning for tactical networks, simulations of combat radio networks, and the design of DSR systems. He was a technical supervisor and a committee member in a number of military communications projects, and delivered several courses on tactical networks previously. Currently, he is finishing his PhD degree at Swansea University, UK.

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