

## **TITLE: 3G/UMTS - An evolutionary path to Next Generation Networks**

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**ABSTRACT:** In a world population of some 6.5 billion people, there are already more than 1.6 billion mobile users. Of these, over 1.3 billion are subscribers to networks based on the GSM/GPRS/UMTS family of technologies.

Globally, the reach of mobile networks has overtaken fixed line telephone connections, delivering affordable communications to many regions that have hitherto been poorly provided by such services.

Together with the Internet and digital broadcasting services, mobile communications – especially those within the IMT-2000 family – will play an important role in the socio-economic success of developing regions. As well as providing ubiquitous access to personal communications, information and entertainment, the convergence of telecommunications, IT and digital broadcasting will offer other benefits.

Reflecting the trend towards off-shoring services – from software development to call centre operations – converged networks will allow developing economies to participate in a globally networked economy. As already demonstrated in countries like India, other regions, such as continental Africa, stand to benefit in terms of education and prosperity from improved access to broadband connectivity.

3G/UMTS will play a crucial role in this future, offering increased data speeds and capacity through the use of additional radio spectrum in globally harmonised frequency bands. As the ‘full mobility’ component of next-generation networks, 3G/UMTS addresses many aspects that will be increasingly demanded by ‘techno-savvy’ users – including security, personalisation and support for multimedia services. Key to the role of 3G/UMTS networks as an enabler for convergence is the IP Multimedia Subsystem (IMS). By separating radio access, transport and control functions, IMS enables mobile operators to introduce services built on Internet applications and protocols. At the heart of both 3GPP (GSM evolved) and 3GPP2 (CDMA evolved) networks, IMS provides a truly global opportunity – not purely a European one.

Moreover, as the next step in the evolution of the 3G/UMTS air interface, High Speed Downlink Packet Access (HSDPA) will offer true mobile broadband, enabling a wide variety of high bandwidth multimedia services including high quality streaming video and fast downloads of high resolution images and large files.

It is likely that operators are likely to deploy a mix of access technologies incorporating cellular, WLAN, digital broadcast (e.g. DVB-H) and wireline. While tomorrow’s mobile landscape will be more complex than today’s, it is clear that 3G/UMTS will maintain an instrumental role in defining the value proposition for billions of mobile multimedia users globally that may be described in terms of tomorrow’s ‘portable Internet’.