there is a significant price premium for mobile broadband services compared to fixed broadband services. Mobile-only operator 3 has taken a different approach and adopted relatively aggressive pricing, offering a 3GB per month data allowance for only GBP15 (USD20) per month. In its marketing material, 3 suggests that, “There is no need for a fixed line” and claims that, “if you’re on 3’s new Turbo network you’ll get broadband speeds of up to 2.8Mbit/s.” A limitation of all mobile broadband services in the UK is the relatively poor coverage (compared to GSM) and a lack of mobile devices supporting the highest HSDPA data rates.

Table 2.2: *Examples of mobile broadband services offered by UK MNOs, December 2007 [Source: Analysys Research, 2008]*

MNO	Service	Price	Data allowance	Description
Vodafone	Mobile Broadband	GBP30 (USD60) per month	3GB per month	Offers two mobile broadband services, using the latest USB modems (capable of download speeds of up to 7.2Mbit/s)
	Mobile Broadband 24	GBP10 (USD20) per 24 hours	500MB per 24 hours	
3	Broadband Lite	GBP10 (USD20) per month	1GB per month	Offers three mobile broadband services, using USB modems (capable of download speeds of up to 2.8Mbit/s)
	Broadband Plus	GBP15 (USD30) per month	3GB per month	
	Broadband Max	GBP25 (USD50) per month	5GB per month	
T-Mobile	web‘n’walk	GBP35 (USD70) per month	10GB per month	Offers two mobile broadband services, with download speeds of up to 1.8Mbit/s
	web‘n’walk Plus	GBP20 (USD40) per month	3GB per month	The web‘n’walk Plus service does not allow VoIP
Orange	Business Everywhere Unlimited	GBP25 (USD50) per month	3GB per month fair usage policy	Launched HSDPA in early 2007, offering initial downlink speeds up to 1.8Mbit/s and will offer up to 7.2Mbit/s as new terminals become available
O2	O2 Web Max	GBP30 (USD60) per month	3GB per month	Offers a basic W-CDMA service with download speeds of up to 384kbit/s. HSDPA was still to be launched as of December 2007

The model is based on an MNO with 10 million subscribers. On the demand side, it considers a range of services that are likely to be used by 3G customers. For each service, the penetration of the 3G user base and the average service consumption of those users is modelled. The model also takes into account the balance between usage indoors and usage outdoors, which has a major bearing on the choice of network architecture, particularly if femtocells are deployed. The model translates the usage of each service into the capacity requirements on the mobile network, both indoors and outdoors. When indoor traffic is served from macrocells, it raises the interference level experienced by other users, creating an additional capacity load on a W-CDMA network. The model also takes account of this.

In terms of technological capability, the model combines the realistic performance of HSPA, HSPA+ and LTE with a likely deployment scenario. It assumes a mobile network with 10 000 base stations and 2×10MHz of spectrum. The model also assumes a realistic distribution of traffic across those base stations (rather than the ideal, but unrealistic, case that the entire capacity of the network can be utilised).

Key characteristics of the service mix in 2012 are summarised in Table 4.1.

Table 4.1: *Characteristics of modelled mobile service mix, 2012 [Source: Analysys Research, 2008]*

	Description
Summary	87% of mobile users subscribe to 3G services
Voice	Fixed voice usage progressively moves to mobile, and the convenience and increasing affordability of mobile causes an increase in voice usage
	Voice usage increases from 150 minutes per user per month in 2007 to 358 minutes per user per month
	30% of mobile voice traffic arises from indoor usage
VoIP	10% of total voice traffic is carried by VoIP
Mobile TV	40% of 3G users watch personalised (unicast) TV and video clips, consuming an average of 150 minutes per user per month
	Three mobile TV broadcast channels are launched in 2008, and this increases to eight channels
	35% of mobile TV consumption is indoors
Internet access	Wireless Internet access attracts some fixed users (for example, students and single-person households) as well as mobile users
	13% of 3G subscribers take up Internet access and consume an average of 1GB per user per month
	90% of Internet traffic is consumed indoors
Other data services	Mobile messaging and mobile email are very popular services, but they consume relatively little network capacity
	41% of 3G users download games, ringtones and other content, at an average of 8 downloads per user per month
	25% of 3G users download music and other audio content, at an average of 15 downloads per user per month
	19% of 3G users browse small-screen Internet sites, for an average of 41 minutes per month