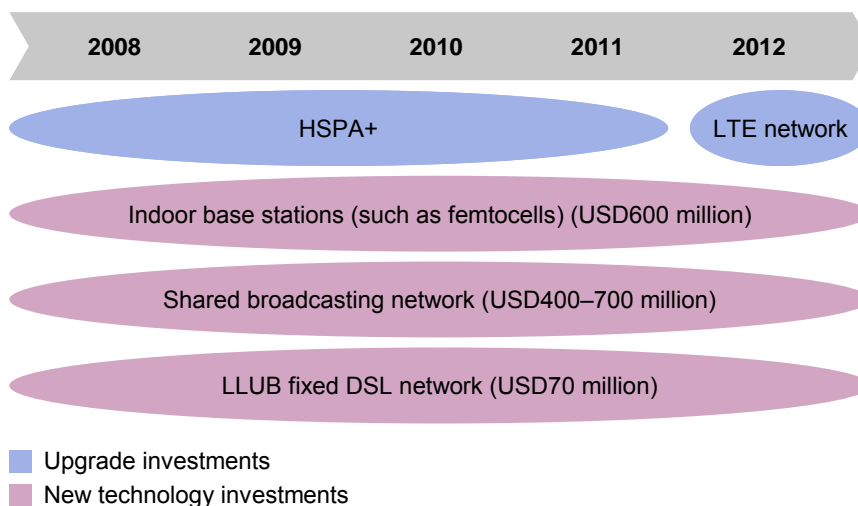


1.3 MNOs are faced with extensive investment requirements

The pressure on MNOs to reduce costs is increasing because of their need to invest in a variety of new technologies, as well as upgrades to traditional cellular technology (see Figure 1.2).

Figure 1.2: MNOs' investment requirements [Source: Analysys Research, 2008]



Widespread deployment of femtocells could cost USD600 million

Femtocells have developed rapidly from an interesting emerging technology to a feasible deployment option that many MNOs have started to consider.¹ The US operator Sprint Nextel launched a femtocell service, called Airave, in Denver and Indianapolis in September 2007, and intends to roll out the service nationwide during 2008. Vodafone's CEO, Arun Sarin, stated during the company's quarterly results conference call in July 2007 that implementing femtocells would allow Vodafone to use its 3G spectrum productively, and predicted that deployment would begin in the middle of 2008.

Widespread deployment of femtocells by a large MNO would require substantial investment. For example, a large MNO that decided to deploy femtocells in 5 million homes at a cost of USD120 each (excluding any contribution paid by the customer) would have to make a capital investment of about USD600 million. Femtocells allow indoor

¹ For a detailed discussion of femtocells in the consumer market, see Brydon, A. and Heath, M. with Parkin-White, A., *Femtocells in the Consumer Market: business case and marketing plan*, Analysys Research (Cambridge, 2007).

- It minimises the need to acquire new radio sites, because MNOs can re-use sites owned by their network-sharing partners. The process of acquiring sites is becoming more difficult as environmental concerns escalate.
- It improves the economic case for providing 3G coverage to rural and low-traffic areas. Most MNOs have focused their 3G roll-outs on urban areas and transport routes because they provide a strong commercial case. Unfortunately, some users, such as high-value business users who travel regularly, will not consider migrating to 3G services until coverage at least matches that provided for 2G services. Network sharing could enable MNOs to justify geographical coverage for 3G services that matches, or even exceeds, that offered by 2G networks.
- It avoids the delays caused by budget restrictions and organisational limitations. MNOs' engineering departments define roll-out plans according to their budgets and internal capabilities, which limit the number of 3G base stations that can be installed within a given period of time. Network sharing minimises the need for new sites, but also enables MNOs to combine their engineering and budget resources, which should substantially improve their capacity for base station roll-out.

The recent agreement between Hutchison 3G and T-Mobile in the UK demonstrates the improvement to 3G coverage that can be achieved through network sharing. It has taken Hutchison 3G about four years to increase its number of base stations from 5000 to 7500, which expanded population coverage from about 70% to 90%. Its network-sharing agreement will increase the number of base stations the operator has available from 7500 to 13 000 within two years (see Figure 2.7). Hutchison 3G and T-Mobile expect to offer population coverage of about 98% by the end of 2009. The coverage increase for T-Mobile will be even greater, because it had just 85% population coverage in January 2008.

Figure 2.7: Hutchison 3G's number of 3G base stations in the UK, December 2003–December 2009 (assuming network sharing from 2008) [Source: Analysys Research, 2008]

