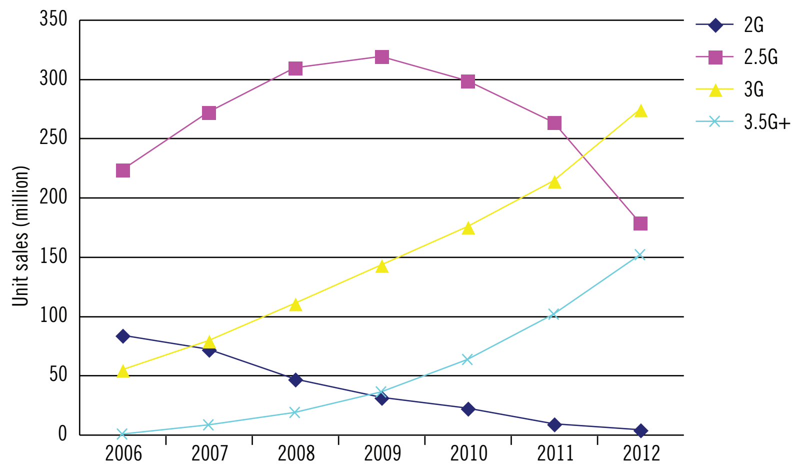
the region, 3.5G+ handsets, mainly consisting of HSDPA, HSUPA and EV-DOrA devices, will form one-quarter of the market by 2012.

Asia Pacific mobile handset sales, by technology group, 2006-2012

Unit sales (million)	2006	2007	2008	2009	2010	2011	2012
2G	83.4	71.5	46.5	31.2	22.0	8.6	3.4
2.5G	222.9	271.8	308.9	318.6	298.2	262.8	178.0
3G	54.0	79.0	110.2	142.7	174.8	213.9	273.9
3.5G+	0.0	7.8	18.1	35.5	62.7	101.3	151.4
Total	**360.3**	**430.0**	**483.7**	**528.0**	**557.8**	**586.6**	**606.8**



Source: Informa Telecoms & Media

Japan

The Japanese mobile handset market is both the most innovative and the most insular in the world. As one of the world's most advanced mobile markets, Japan is set to experience a slowdown in growth over the next five years. Total handset sales for 2006 stood at 49.1 million in 2006 and are expected to grow by 4.2% to 51.2 million in 2007. Limited growth is expected to 2009 after which the market will settle at around 54-55 million handset sales per year as the market will be almost entirely reliant on replacement sales as the subscriber base reaches saturation.

Despite having one of the fastest replacement rates, handset sales in Japan may be pushed to higher levels in the short term owing to the introduction of mobile number portability (MNP) in October 2006. But rather than the mobile operators tying subscribers into longer contract deals to combat churn (as has happened in other regions), they are looking to retain and attract new subscribers by offering new handset models and expanding their handset portfolios.

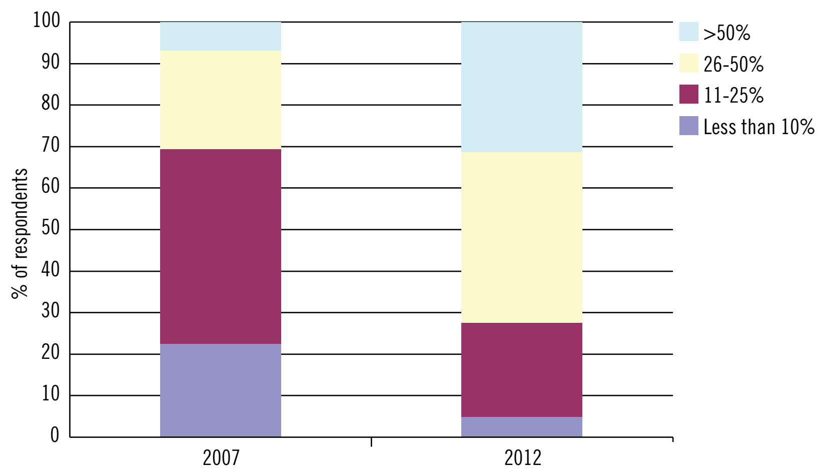
Technically, the Japanese mobile market has been dominated by PDC handsets for NTT DoCoMo and Softbank's networks, with competitor KDDI running a CDMA network. The

Currently, only two of the major vendors – Nokia and Samsung – are very particular about their intention not to outsource major shares of their production, using them mostly for niche, CDMA and lower end handsets. Others – Motorola and Sony Ericsson in particular – have fully embraced the outsourcing model. In addition, operators are increasingly demanding greater flexibility both from traditional vendors and contract manufacturers, as they become keener on operator-specific, customised handsets that have been shown to increase ARPU.

Increasingly OEMs want to differentiate their product lines and are looking for a more collaborative engineering and manufacturing approach, as opposed to buying a product. However, whatever outsourcing route they take, they still need to make sure that quality is not compromised at any stage, which could jeopardise the value of their brand, and that there is some cost saving over manufacturing the product themselves. This appears to be a continuing trend, the growth of contract/'white-label' manufacturing of handsets is set to continue, even if at a much slower pace than in the last couple of years. Almost 70% of the respondents to the 2007 Industry Survey believed that up to 25% of handsets would be contract manufactured in 2007. This is set to increase by 2012, 72% of the respondents believe that contract/white label will account for over 25% of all handsets manufactured in that year – with 31% expecting them to account for over 50% – which is in keeping with previous analysis of trends in the market.

The main reasons given for outsourcing are the continuous market pressures to streamline the production process, reduce production costs (such as R&D, manufacturing and testing), exploit design, shorten time-to-market for new products and increase cost effectiveness of handset development. Outsourcing companies, such as the EMS providers, build their whole ethos on cutting costs. Also, as handset models are beginning to have a shorter life span with fewer units, and with the added pressure on financial results, the outsource model is becoming an increasingly compelling argument for survival.

Industry opinion: proportion of total handsets made by contract/ 'white-label' manufacturers, 2007 and 2012



Note: Profiles of survey respondents can be found in Appendix

Source: Informa Telecoms & Media Mobile Handsets Industry Survey, September 2007

The consumers' clamour for more megapixels and higher resolution images as a show of increasing quality is not necessarily holding true in the market. As handset vendors and digital camera makers race to squeeze more megapixels into their products as a measure of quality, there are claims that the image quality is not actually improving; indeed it may even have an adverse affect on image quality.

Cameraphone trends and forecasts

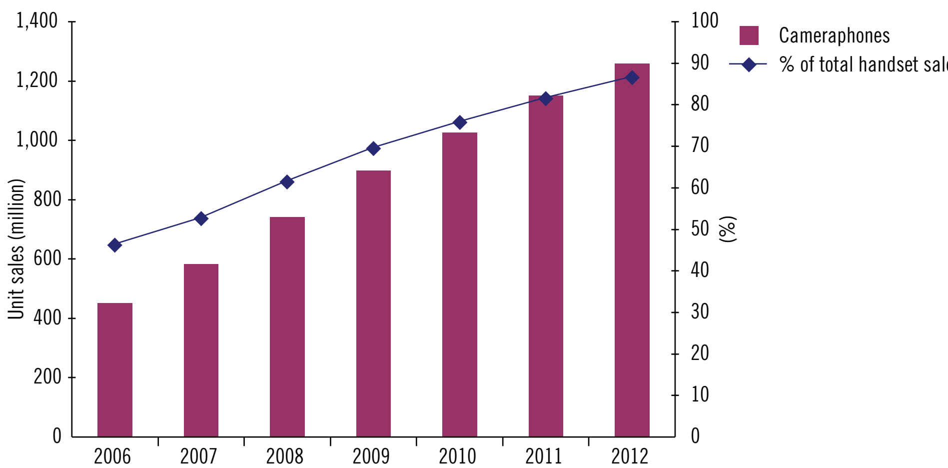
The potential for integrating cameras into mobile devices has been long realised and a camera is now regarded as a central feature. Moreover, as 3G services are ramping up, the market for cameraphones is rapidly evolving from still camera capabilities to video camera.

Informa Telecoms & Media estimates that 450 million out of the total of 974.7 million handsets sold in 2006 featured camera capability, equating to penetration of around 46.2%, rising to 52.6% of the total in 2007. This is being boosted by the mass market arrival of 3G handsets, and by 2012, Informa Telecoms & Media expects 1.26 billion handsets to be sold worldwide with integrated digital cameras, representing around a massive 86% of total handset market sales.

Cameraphones have experienced extensive growth and in just three short years since their launch in 2004, their market volume was twice that for DSCs. In total, cameraphones comprised 81.7% of all digital cameras sold in 2006, and this proportion is set to grow to 84.4% in 2007.

Global cameraphone sales, 2006-2012

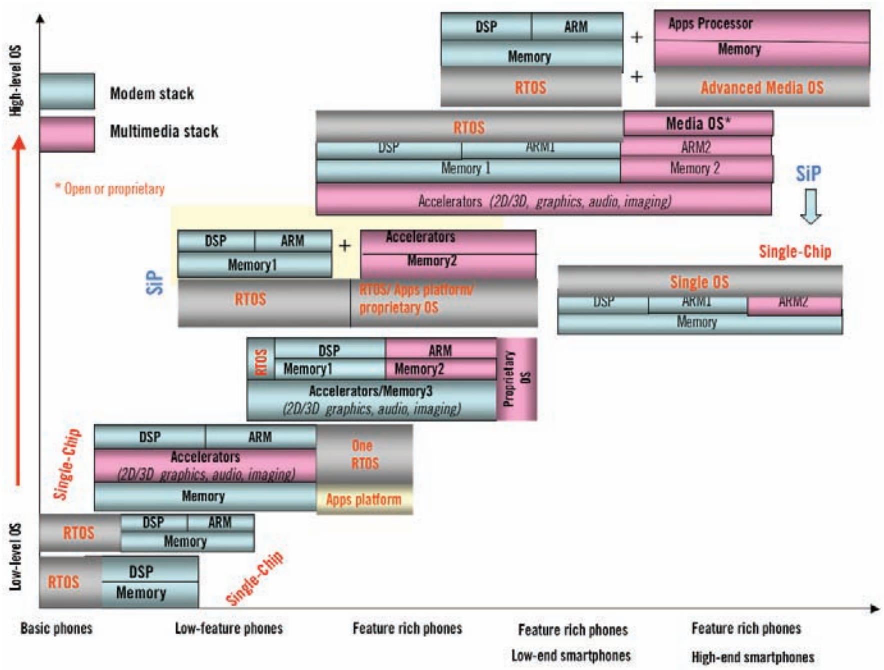
	2006	2007	2008	2009	2010	2011	2012
Total cameraphone sales (million)	450.6	581.9	740.2	897.7	1,026.1	1,149.9	1,257.9
% of total handset sales	46.2	52.6	61.4	69.5	75.7	81.5	86.6



Source: Informa Telecoms & Media

The feature rich non-smartphone handset segment has been the mainstay of cameraphones and accounted for the majority of cameraphones in 2006. However, by 2012 there will be a more even spread between smartphones and low feature phones as cameras penetrate further product differentiation, cost, hardware form factor, performance, power consumption, adaptability to different wireless environments and time to market.

Single-chip versus separate processing components by handset market tier



Source: Informa Telecoms & Media

Although this question is critical, there is no obvious answer to it as both single SoC and separate components approach offers distinctive advantages and drawbacks. Only by weighing the advantages and disadvantages can the optimal solution that meets the requirements of both specific design and specific market segment be arrived at.

Three different processing designs are available to handset manufacturers:

- Separating the applications processor from the baseband.
- The system in package (SiP) approach where the baseband and the applications processor are integrated into a single package.
- A baseband supported by one or more separate multimedia accelerators or co-processors to handle different applications such as MPEG4 codecs, image processing, or TV signal processing.

Case study of modular digital baseband and System in Package (SiP)

In this design, the baseband and the applications processor are incorporated as discrete modules, each embedding one or more processing cores. For example, the baseband might include only a DSP core to run all the three layers of the wireless protocol stack (WPS) or it might additionally