

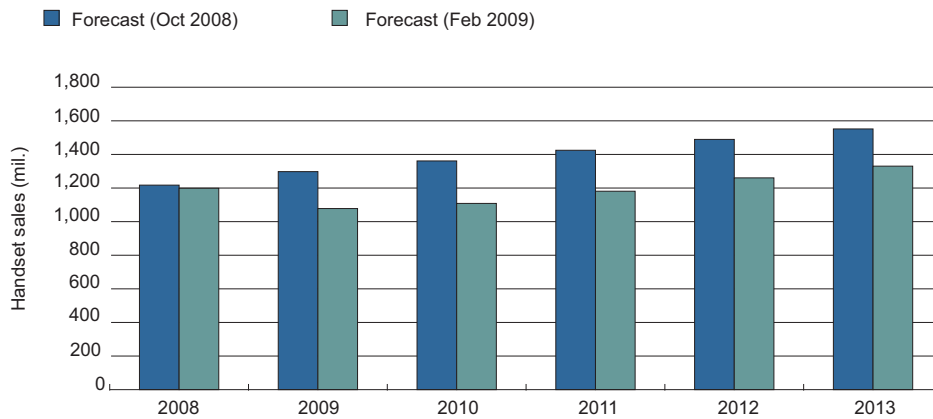
Chapter 1

Executive summary

The importance of handset software

After double-digit growth since 2001, the prevailing macroeconomic conditions have required all in the mobile telecoms industry to revise their forecasts. Informa Telecoms & Media now expects sales of new mobile handsets to fall 10.1% year on year to 1.08 billion in 2009, in contrast to the slight growth that was previously expected. As a result, this 20% drop in market expectations is causing many mobile network operators, handset vendors and their suppliers to rescale and realign their organizations. Although Informa Telecoms & Media expects the market to recover to 2008 volumes in 1H12, it is likely that cost pressure will only increase over time.

Figure 1.1: Global mobile handset sales, new vs. old forecasts, 2008-2013



Source: Informa Telecoms & Media

Consumer demand for new mobile handsets has not only contracted, due to longer replacement cycles and more SIM-only deals, but also changed in character with some selecting less expensive devices and subscription packages. Operators are rationalizing their handset portfolios, with many reducing their total handset subsidies.

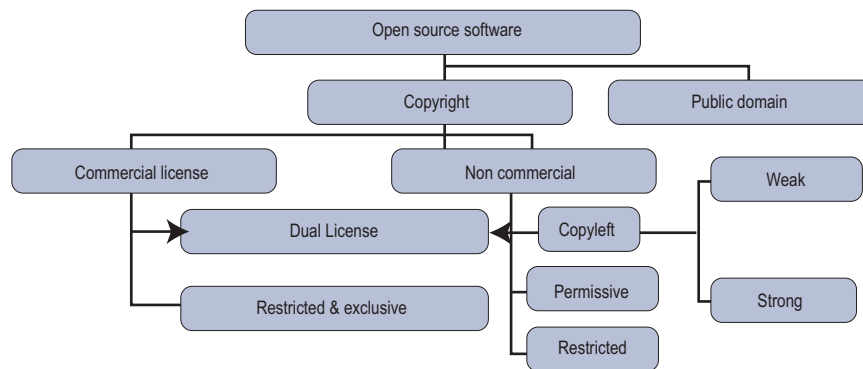
Informa Telecoms & Media expects to see a growing number of low, headline-grabbing prices for basic and low-feature phones, while attractive rates will be made available for the high-end devices necessary to retain and attract high ARPU customers. In an effort to increase mobile data consumption, operators will focus a greater proportion of their subsidies on innovative new smartphones. Thus, while demand in the mid tier will fall away, low-end devices will be less affected and Informa Telecoms & Media predicts that sales of new smartphones will grow over 30% to 211.2 million units during 2009.

employs them. Commercial software licenses often impose extra restrictions that are not covered by intellectual property law, these include:

- restrictions on disassembling or reverse engineering the software
- restrictions on usage (execution on a fixed number of machines)
- restrictions on sub-licensing the software or any derivative works.

Open source software is protected by copyright law but its associated licenses could be much less restrictive than their commercial counterparts, thanks to the incorporation of ‘copyleft’. The central idea of copyleft is to remove the commercial restrictions of copyright law by enabling software to be viewed, reused, modified and distributed. This freedom should be maintained for any modified versions of this software. Thus, the crucial freedoms that define ‘free software’ are guaranteed to everyone who has a copy; they become inalienable rights.

Figure 3.3: Different approaches of licensing open source software



Source: Informa Telecoms & Media

Copyleft has several degrees of freedom; the most notable are ‘strong copyleft’ and ‘weak copyleft’. Strong copyleft represents the highest degree of freedom the software license can have, which means that the licensee has permission to use, adapt or distribute the software as long as any resulting modifications or derivative works are also bound by the same copyleft licensing scheme. The most well-known open source license that uses strong copyleft is the GNU General Public License (GPL). In contrast, weak copyleft refers to licenses where only copylefted (or changed) modules and files inherit the copyleft license, but all derivative works do not. In this situation, original or non-copylefted modules and libraries of a software package are not covered by copyleft license. Examples of weak copyleft licenses include Lesser GPL (LGPL), Eclipse Public License (EPL) and Mozilla Public License (MPL).

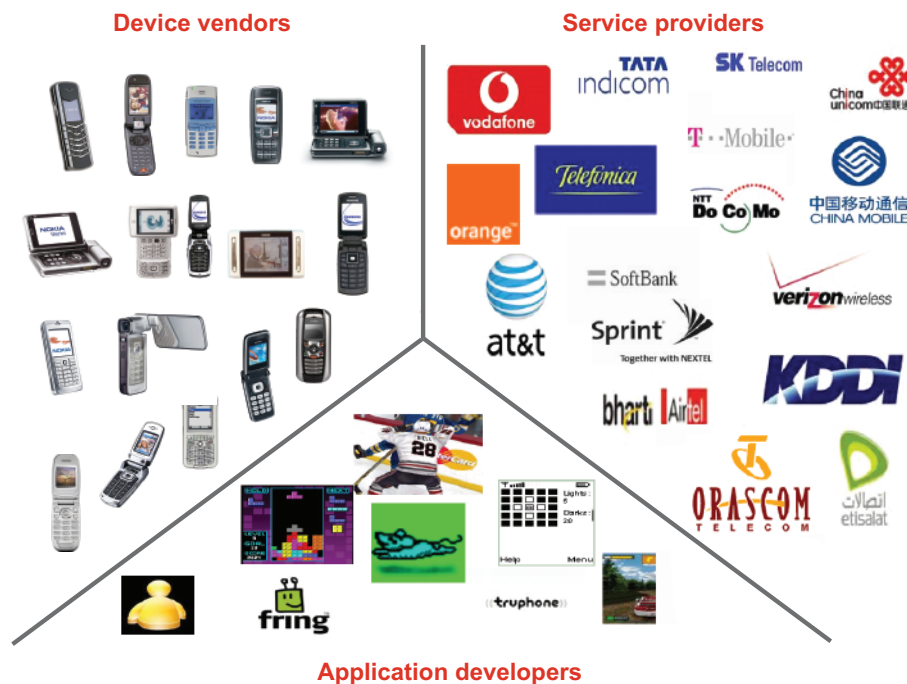
Open source licenses that do not use copyleft are called permissive licenses. They permit reuse of open source software within proprietary software as long as the terms and conditions of

Evolution towards MRIs and MWRT

The business case

Mobile phones are no longer designed in isolation but rather in conjunction with the services and multimedia applications they support. Both mobile operators and OEMs are currently building new strategies beyond looking at customized devices at the individual level. Their main aim is to work as a community on end-to-end ecosystems to enable seamless user experience through integration of the device capabilities with services and applications they support.

Figure 7.6: Mobile telecoms ecosystem in three dimensions



Source: Informa Telecoms & Media

In recent years, the user experience has been the main focus in the mobile handsets industry and new products are now providing mobile users with intuitive UIs that enable quick and easy access to mobile services. The first mobile Web browsers were based on WAP browsers that provided access to the Internet in a very simple form; they were designed to adapt Internet content to the limited hardware and software resources of mobile phones. As a result, WAP did not meet the user expectations in terms of speed, ease of use, appearance, and interoperability.