

Digital Television Switchover

Michael Starks, Associate of the Programme in Comparative Media Law and Policy, Oxford University

Digital television switchover is a two-stage process – switching on new digital television services and then switching-off the old analogue terrestrial transmissions. The main advantages for consumers are improved technical quality, increased channel capacity and the option of high-definition (HDTV), plus data and interactive services. The main benefit to broadcasters, regulators and governments lies in greater spectrum efficiency. Saved analogue terrestrial spectrum can be reallocated, or auctioned, for new broadcasting or wireless broadband and telecommunications services.

The first regional digital switchover was accomplished in Berlin in 2003. The first complete national analogue terrestrial switch-offs were achieved by the Netherlands and Luxembourg in 2006, followed by Finland and Sweden in 2007. Germany, the UK and several other European countries have switched off in certain regions. The United States is switching-off nationwide in 2009. Many countries around the world have now embarked on switchover, including Australia, New Zealand, Japan, China, South Korea, Malaysia, Singapore, South Africa, Canada, Mexico and the European Union countries. Even small developing countries, conscious that analogue broadcasting equipment will in due course become obsolete, are focussing on the long-term prospect.

Central role of digital terrestrial television

The last two decades have seen a strong growth in satellite and cable broadcasting, much of which is now based on digital transmission, plus the arrival of digital TV by broadband. Nonetheless, digital terrestrial television remains central to switchover policy. It provides an obvious transition for incumbent analogue terrestrial broadcasters, from one form of terrestrial transmission to another, using the same transmitter masts – and it provides a substitute for those analogue terrestrial viewers who cannot, or do not want, to switch platforms – and who can usually retain their existing TV and aerial and simply add a set-top box.

The basic approach is to launch a set of new digital terrestrial channels, some of which duplicate (simulcast) the analogue terrestrial services and some of which provide new services. Then follows a transition period, during which viewers equip themselves with new digital receivers, so that they cease to be dependent on analogue terrestrial signals. At that point, imposing a compulsory analogue switch-off date becomes feasible.

Full switchover is generally easiest in countries where terrestrial reception is now of limited importance. In countries where terrestrial reception remains dominant, high digital penetration achieved during the period of voluntary take-up is a pre-condition of

switchover, since this reduces the number of households whose main TV set is likely to be analogue at the point of compulsion.

Regulatory planning

The first step should almost certainly be a feasibility study -- market-testing a consumer proposition, looking at how many households depend on analogue terrestrial, and modelling take-up and timing. This can provide a framework for a cost-benefit analysis. However, the results may or may not suggest a swift start: for countries with low consumer spending-power and other priorities, the best timing may not be immediate.

In planning digital switch-on, a number of technology issues arise – the choice of technical standards, of compression technology, and of Application Programming Interface and conditional access systems. Then detailed spectrum planning work is needed to show how digital terrestrial services can initially coexist with analogue and then how much spectrum can be saved by analogue switch-off.

Governments and regulators must decide the terms on which digital terrestrial spectrum is to be licensed to incumbent terrestrial broadcasters and, if desired, to others. A key issue is whether to match analogue terrestrial coverage, as in the UK, or whether, as in New Zealand, to rely on satellite reception to serve areas where terrestrial transmission is not economic.

Another major decision is whether or not to mandate the sale of digital receivers and outlaw the continuing sale of analogue TV sets, as was done in the United States. Mandating digital tuners in all new TV sets enlists the TV set replacement market but may impose an unnecessary cost on consumers who wish to rely on digital set-top boxes linked to cheaper analogue TVs.

The later stages of switchover involve extensive public communication and persuasion, coupled with some form of help for those who will find switchover most difficult. Some public funding normally plays a part, if not in the initial launch at least in the closing phase. However, the art of planning switchover successfully is to create the conditions in which the market can do most of the driving, with consumers voluntarily buying digital receivers because of the appeal of the digital service proposition. That way, the call on public funding is limited and political resistance can be minimised.

To complete the whole switchover process on a national basis can take a long time. While extensively cabled countries have been swift, other nations are switching over periods of 10 or 15 years. So, on that basis, it is not too soon for regulators in countries which have yet to start at least to focus on the challenge.

Michael Starks is an associate of the Programme in Comparative Media Law and Policy at Oxford University and author of 'Switching to Digital Television' (Intellect Books, 2007). From

2002 to 2004 he managed the UK Government's Digital TV Project to plan the nation's switchover.