

## Maximising benefits of spectrum to society

Spectrum is the lifeblood of the mobile industry and a catalyst for economic growth. It is critical to have a spectrum framework which promotes investment and maximises the returns to society from this scarce and valuable resource.

*Governments play a vital role in ensuring that the necessary spectrum resources are made available. In this paper, we describe Telenor's position on how authorities' best can manage spectrum in order to generate the greatest possible benefits to society.*

*In our view spectrum policy should rest on five pillars:*

- 1. Reduction of spectrum scarcity*
- 2. Promotion of effective and sustainable competition*
- 3. Reduction of investment risk*
- 4. A market based allocation method and level playing field principles*
- 5. Realistic revenue and price expectations*

*Best-practice spectrum management will also strengthen other industries that rely on mobile communications services. Benefits to society will increase significantly if modern spectrum management principles of objectivity, transparency, and non-discrimination are employed. This applies also in other areas where government manages publicly owned resources on behalf of its citizens.*

---

### Reduction of spectrum scarcity

Reduction of spectrum scarcity is the simplest and most effective way a government can contribute to a well-functioning mobile sector. All relevant IMT (International Mobile Telecommunications) bands should be made available to the mobile sector. These frequency bands should be available on a technology-neutral basis.

Technological development and modern spectrum management techniques have removed the reasons that previously supported reserving spectrum for certain technologies. Governments that still do not introduce technology neutrality effectively deny their citizens the full benefits of modern mobile technology for no justifiable reason.

### Effective and sustainable competition

Governments across the world appear to be approaching an implicit consensus: The mobile market is characterised by competition between three or four Mobile Network Operators (MNO).

The implication is that spectrum must be distributed in such a way that there exist viable spectrum packages that can support the effective operation of three or four autonomous mobile networks. In practice, spectrum caps are used in auctions in order to prevent a higher degree of concentration of frequencies than what is compatible with the government's market structure ambitions.

However, excessive use of spectrum caps can lead to inefficient use of frequencies and creates incentives for hoarding of spectrum under the protection of caps, and subsequent “windfall gains” at the expense of the government as spectrum is sold or transferred to the sustainable part of the industry in the secondary market. Telenor’s view is that competition must be safeguarded, but that “spectrum caps” should be no stricter than necessary to protect a sustainable market structure.

## Reduction of investment risk

Investment risk directly influences network investments, the lower the perceived risk, the higher the level of investment. In high risk countries, only projects with high expected financial returns are realised. In lower risk countries, more marginal investments are also made. Governments can contribute to lower investment risk and improve the investment climate through:

- Long licence duration with predictable renewal procedures, or perpetual spectrum usage rights;
- Strong legal protection of spectrum rights, including publicly accessible registers over the most important spectrum licences;
- Spectrum trading, subject only to competition constraints;
- Commitment to the use of auctions for future spectrum awards; and
- Public spectrum release plans and transparency regarding current frequency use.

It takes time and consistent application of best- practice principles to reduce risk perception. Unfortunately, minor deviations from best practice can reduce investors’ confidence almost immediately. By relying on transparent principles instead of ad-hoc policies, governments can increase both investment levels and direct revenues from the sector.

## A market-based allocation method

Auctions are market based allocation methods and have become the default spectrum award mechanism for several reasons. Correctly designed, an auction will ensure:

- Spectrum is generally efficiently assigned and used;
- Government is able to collect revenues to the direct benefit of society; and
- An objective and fair allocation that protects the government against allegation of squander, corruption, or unfair play.

The latter effect is important and beneficial to the overall investment climate. The use of transparent auctions for award of natural resources and e.g. government contracts is therefore considered to contribute both to welfare and political stability.

Unfortunately, there has, in some countries, been a tendency towards the use of complex and opaque auction mechanisms which generate discriminatory prices where different MNOs pay dissimilar prices for similar licences. In some auction formats, only experts are able to determine whether the rules have been followed or not. Telenor considers this to be unfortunate as it undermines the transparency and obvious objectivity offered by simpler auction formats that generate roughly equal prices for equal licences.

## Realistic revenue and price expectations

Telenor acknowledges that spectrum is considered a publicly owned resource, and that citizens should benefit from the creation and sale of exclusive rights to the use of frequencies.

The benefits from spectrum accrue to citizens in a number of ways:

- Auction revenue;
- Mobile services;
- Employment in the mobile sector; and
- Profit taxes.

Overemphasis on direct auction revenue will reduce the benefits from the latter sources. Monopoly behaviour, where spectrum is kept away from operators, reserve prices are excessive, or technology neutrality is denied, prevents more benefits than the associated increase in government revenue from such measures (if any).

Telenor's view is that governments should maximise revenue from spectrum subject to only two constraints:

- All spectrum should be sold; and
- Equal spectrum rights sold in the same auction should normally have equal prices.

Modern best-practice auction formats achieve this in most cases.

