

 1.7

## New Technologies and Their Impact on Regulation

As emphasized throughout the Toolkit, new technologies have a major impact on ICT regulation. One word is missing from the new vocabulary described at the start of this Module – Globalization. ICTs have been a major driving force and enabler of globalization and its associated connectedness. Globalization brings with it a whole set of international and cross-border regulatory issues, and a requirement for multilateral regulatory forums. For example, IT-enabled services, international financial services, and e-commerce entail the transfer of data across borders, and these activities raise the issue *inter alia* of privacy. The sheer volume of data transfer is itself a challenge, but the OECD\* notes two additional risks related to:

- Secondary uses of personal data; and
- Information security breaches.

It has always been difficult for individuals to monitor how organizations use their personal data in a secondary manner and the problem is made more difficult due to the ease and frequency with which organizations currently process data. The second risk is evidenced by the growing number of high profile data security breaches that are publicly reported. Privacy is not the only issue; according to OECD, “A wide variety of scams operate in the online environment, ranging from fraudulent lottery schemes, travel and credit-related ploys, modem and web page hijacking, and identity theft (ID theft) to name but a few... the Internet has given criminals access to a worldwide base of consumer targets as well as more opportunities to elude enforcement as they need not be in the same country, or even in the same hemisphere, as their victims.”\* Ensuring e-security is a major task. However, “security” is applied both to the individual and the state, and requires a balance between the two sets of interests.

Lack of trust in the Internet, and therefore the need to address the above issues, is often cited as one of the most important obstacles to the use of the Internet and e-commerce. Internet governance is a major topic in its own right. In order to involve all stakeholders and ensure comprehensive cybersecurity protections, national governments are often in the best position to implement new security policies. These policies should touch on many different areas including highlighting the importance of ICTs to the nation; identifying and analyzing the risks from cyber crime and attacks; establishing objectives such as prevention, detection and prosecution of cyber crimes; and setting a plan to achieve these objectives that details the stakeholders’ roles and responsibilities for data protection and cybersecurity.\*

Regulation in an IP environment raises serious questions concerning the current regulatory environment. It impinges on all of the previously discussed topics: competition, spectrum management, interconnection, UAS, authorization, price regulation, and also numbering, together with all associated regulatory and legal practices and instruments. For example, spam has become a particularly unwelcome and costly consequence of the spread of the Internet where national and international agencies are taking actions to limit it. For emergency services, IP telephony poses a particular problem in many countries. In Europe, for instance, access to emergency service numbers is an obligation of Publicly Available Telephone Service (PATS). Both the U.K. and Irish regulators have conducted consultations on ensuring that VoIP users can contact police, fire and ambulance services. Challenges that VoIP users face in accessing emergency services include location correspondence since VoIP numbers are often non-geographic and quality of service since power failures often make VoIP phones useless.\*

One of the major consequences of the evolving technology is that it at last makes a reality of the long-promised “convergence” (the EU issued its first Green Paper on convergence in 1997). Convergence is facilitated by the transition from analogue to digital, voice to data, narrowband to broadband, circuit switched to packet switched, one way to interactive, scarcity to abundance, and the accompanying digitalization of all content. Convergence allows both previously separate industries and entirely new sectors to compete in the same newly expanded market space. For example, numerous markets around the world are offering IPTV and mobile television. However, countries are taking different approaches towards classifying IPTV. Some countries regulate all IPTV-related services as broadcasting while other countries prefer to focus on competitive market entry and do not classify IPTV at all. Still other countries have adopted a middle ground in which some IPTV services are classified as broadcasting while other services, such as video-on-demand, are not regulated as a broadcasting service. See [Module 7](#) for more detail on how IPTV is impacting regulation.

In this new converged market space, technology allows, and customers can expect, the seamless provision from multiple sources on a single device of all of electronic communications for one supplier competing with many other suppliers – a working definition of “convergence.” This one-stop-shop could be the business of a single entity or of multiple entities working in collaboration. In the new market space, the core business of a traditional player may be peripheral to that of a new player and yet the traditional player may not be able to withstand the competition from the new entrant. This transition has radical consequences for existing business models, platforms, content, and devices, together with the regulatory environments that support investment in and consumption of them.

A broadband platform can deliver telecommunications services, information services, broadcasting services and much more. Frequently, regulation has taken a “line of business and technology” approach and has often limited cross-market entry. Normally, there have been separate regulators for the different lines of business and often an additional regulatory body dealing with radio spectrum. Often the objectives of the government vary according to the “line of business,” notably between broadcasting and telecommunications. The regulation of broadcasting has focused on the social and cultural impact of the sector, while in telecommunications the concern has been the transition from monopoly to competition. Convergence calls this state of affairs into question since the content of these lines of business are indistinguishable digital messages. While the objectives of the government may not have changed with respect to a “line of business,” they will become more difficult to implement in the new market space.

Both broadcasting and telecommunications have been regulated with the goal of achieving a form of universal access and service. Broadcasting has also been charged with nation building, preserving language and culture, promoting values and standards, protecting minors, etc. The regulation of publishing has some of the characteristics of broadcasting, especially with regard to values, minors, slander, and defamation. The Internet is largely unregulated but there are some controls on content. As yet, there is little regulatory experience on “web casting” even though live audio-visual streaming of content can be a very close substitute for television broadcasting. Increasingly these platforms are providing overlapping or the same service, applications, and content.

A distinction has been made between “linear” and “non-linear” services. TV broadcasts are regarded as linear services where content is “pushed.” On-demand services are regarded as non-linear where content is “pulled.” The EU has defined non-linear services as any audiovisual media service where the user decides upon the moment in time when a specific program is transmitted.\* Generally, non-linear services are regulated by e-commerce regulations rather than broadcasting legislation. Consequently, the two types of content are subject to different forms of regulation regarding obligations, the treatment of advertising, and what is termed “positive” content regulation, such as requirements to support independent content production.

The key questions in a converged environment capable of delivering both linear and non-linear service are how and by which institution should these platforms and the content they carry be regulated? Is there any case for continuing to regulate according to the technology of a platform where all platforms deliver the same services, applications, and content? Should platforms that are near-perfect substitutes for each other be regulated in the same way?

The questions are especially important because investment in platforms will only generate positive returns where customers are willing to pay for the service, applications and the content they provide – that is, content drives platform investment. Market distortions, impacting investment and consumption decisions, can result from the unequal regulatory treatment of different platforms delivering overlapping content or unequal regulatory treatment of different content where all platforms deliver the same services, applications, and content.

Clearly a level playing field would be most advantageous – that is, an integration of existing regulatory frameworks into a single framework that is coherent across the entire electronic communications market space. But in leveling the field, should the regulatory field be raised to the highest common factor (possibly broadcasting) or dropped to the lowest common denominator (possibly Internet)?

Convergence will present new challenges for competition authorities since it is expected to generate pressures for “consolidation.” We have already witnessed numerous mergers and acquisitions among players in the new market space. In some instances, acquirers have emerged from non-traditional sectors. There are forces in play that stimulate vertical consolidation. These forces flow from the enhanced economies of scope and scale between platforms and content made available by convergence. Where size is a key factor for business sustainability, there are also forces at work to bring about horizontal consolidation.

There has been a trend towards *ex post* regulation using competition law and away from sector-specific *ex ante* regulation as ICT markets have become more competitive. One of the pillars of ICT regulation has been “access” and interconnection that predominantly concerns access to customers. In a converged environment there are additional access issues because there are additional “gateways” both technical and economic. The gateway may be a set top box (conditional access) or a digital rights management (DRM) system. Service providers need access to content and content providers need access to

customers, both of which may establish some form of economic gateway. In the new value chain, control over a gateway can ensure considerable returns to its owner. Competition policy must continue to address dominant positions that may emerge in the converged environment, hence the need for the application of competition policy.

Similarly, competition authorities in different jurisdictions have already struggled with and come to different conclusions regarding the treatment of exclusive rights – especially for significant national and now global media events – termed “general access to major events,” such as the Olympic Games. Regulating these events in a global converged market space requires international cooperation and innovative thinking. There are many examples where cross-media ownership is not permitted, where the “reach” of same-owner TV channels is limited, where there are limitations on foreign ownership and the provision of bundled services is strictly regulated on competition grounds. Such practices risk becoming redundant or unenforceable in a converged Web 2.0 environment. The latter represents the “second generation” web-based services based on sharing and on-line collaboration, such as blogs and websites like YouTube.

The transition from monopoly to competition in telecommunications is well underway in the vast majority of countries and largely completed in many. The transition has proved beneficially transformational and has set in motion further dynamic changes that are delivering a vastly expanded set of global opportunities in electronic communications. These opportunities are again positively transformational and are encapsulated in the term “convergence.” But in order to participate in and maximize the benefits of convergence, a new regulatory paradigm has to be put into place. The new paradigm must address the legacy of the earlier transition period while supporting investments in the new period and facilitating new investments in the new market space.

The costs - social, economic, and political - of being left behind in these transformations are very considerable. The ICT Regulation Toolkit is designed to help developing countries implement effective regulatory frameworks that can harness the latest technological and market advances, enabling them to best use ICT as a development tool.

\* European Commission, Proposal for a Directive on the Coordination of Certain Provisions Laid Down by Law, Regulation or Administrative Action in Member States Concerning the Pursuit of Television Broadcasting Activities (2005) at

## Reference Documents

- [GSR 2009 Discussion Paper, Draft Background Paper on Cybersecurity: The Role and Responsibilities of an Effective Regulator](#)
- [GSR 2009 Discussion Paper, Voice over Internet Protocol \(VoIP\): Enemy or Ally](#)

[Next: 2 Competition and Price ➔](#)

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