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# Responding to Convergence

## Different approaches for Telecommunication regulators

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# Executive Summary

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The independent telecommunication regulator of the Netherlands, OPTA, commissioned this report to describe the phenomenon of convergence in the market for digital information and communication and to assess the consequences of this development for telecommunication regulators and regulation; with the ultimate goal of drawing useful lessons from approaches applied in United States of America, United Kingdom and South Korea.

## Approach

1. The report is based on a review of relevant literature to define ‘convergence’ and what regulatory issues it triggers. In internal meetings with the OPTA team the insights were discussed to allow effective scoping of the issues (technical, economic and societal) to be researched further. A limited number of expert interviews were used to validate findings. On the basis of this general understanding of the issues three detailed case studies were conducted of the market governance and regulation in the United States, the United Kingdom and South Korea. The cases were selected because of their distinct characteristics, and aimed to disclose different regulatory approaches to allow insightful assessment and comparison. The case study process involved a review of policy documents, presentations, scientific literature, existing case studies, and annual reports as well as interviews with local stakeholders and experts.

## Convergence

2. In the past, broadcast and telecommunications were clearly separate markets, based on different technologies, with distinct governance and regulatory frameworks. Broadcasting often had a strong public-sector interest, driven by concerns about free speech, diversity of supply, decency, programming (cultural content, sports, major events), advertisements, objective information provision, protection of minors, etc. Public broadcasters were supervised by content boards or similar institutions ensuring that the supply of content services complied with the desired societal objectives. Through media ownership restrictions and other rules these were also extended to commercial broadcasting services. Telecommunications markets were ruled by economic and technical issues, including network access; the public interest was the derived goal of ensuring affordable services to everyone. Telecommunication markets, which were mostly liberalised in the 1990s, usually had a regulator to ensure that neither the natural monopoly nor the technical characteristics of incumbent operator(s) would be used to restrict network access or otherwise be exploited to create and abuse significant market power.

3. Through a number of technological advances – especially the increase of processing speed, storage capacity, transmission speed, compression techniques and standardisation – this well-organised and segregated situation changed, allowing for a single or similar set of services to be offered over different platforms (e.g. over cable, satellite, and telecommunication networks), and for the bundling of distinct services onto a single platform (triple and quadruple play). The process of this change is usually referred to as ‘convergence’. It challenged the previous *modus vivendi* because new forms of competition by unregulated players tended to undercut the implicit subsidies of the old model and to disrupt long-term governance relations.
4. This convergence trend is painting a new and much more diffused picture, which can be (temporarily) captured in an image of an integrated ‘Information delivery’ chain (Figure A); running from the information (or content) source, through publishers and broadcasters, search agents, connection providers, and devices to the ultimate consumer of the information. In the current ‘converging’ situation none of these elements of the delivery chain are stable and many of the established players are experiencing the impact of disruptive technologies and business models. New services and new entrants are emerging, whilst established players are vertically integrating or even exiting the market.
5. It should be noted that this is a very dynamic situation in which suppliers to one market consistently try to expand into adjoining fields and absorb the market that exists between the functions. Information sources try to bypass publishers by gaining access to search agents and the consuming public. Producers/publishers try to integrate forward by providing search capabilities of their own and sometimes also by offering competing information sources. Soft- and hardware producers try to enter the information delivery chain in the understanding that this is the area where value added will grow. Search engines are investing in mobile devices and operating systems. Connection providers, who realize that the value-added of transmission services can only decrease as bandwidth supply increases, are actively trying to integrate upwards in to additional search and publishing/producing activities. Thus the chain should be seen as a heuristic to help visualize the new converged reality, whilst acknowledging that in practice it is neither linear, nor clearly defined.

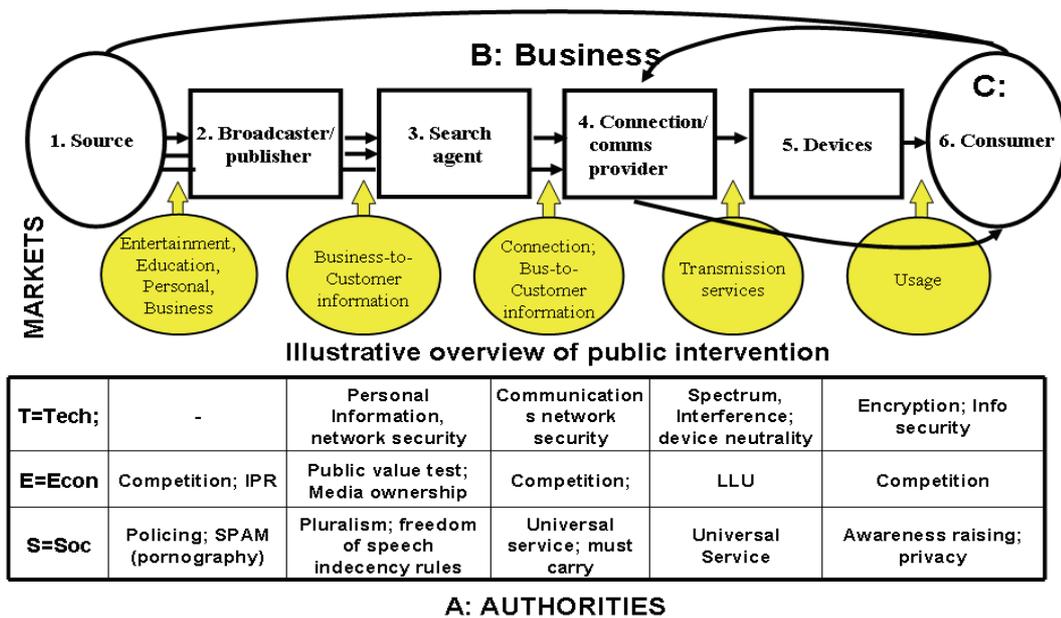


Figure A: the "TES" drivers and "ABCs" of the information delivery chain and its markets

### Regulatory responses

- Traditional Broadcasting and Telecommunication regulations are driven by a mix of technical, economic and societal (TES) objectives. Figure A also presents an indicative overview of policies in the various markets. The evolving context leads to a convergence on the regulatory side – as the values and policy objectives of one policy field flow into the other when the regulation (and the regulator) follows the platform into new service areas where traditionally-regulated services are being provided through other (unregulated) channels.
- Administrations, business and consumers/customers/citizens (ABC) are affected, at different levels and in different degrees, by convergence. Administrations and regulatory authorities are forced to converge in response to markets; and to reinvent themselves to enable 'joined-up' coherent policies and responses to be made to new market realities. Business sees opportunities and challenges, depending where in the delivery chain they have traditionally provided their services. Consumers are presented with a wide supply of affordable services and an overflow of information, including indecent, harmful and/or illegal content that is hard to counter and against which the authorities cannot provide adequate protection. At the same time, they have increasing opportunities to take on the roles of content creator, distributor and even regulator, alone or in partnership with business and government.
- The choice of when to regulate balances need, burden and efficacy considerations. Regulation at one part of the value chain has impacts elsewhere, in either traditional or

converged setups, raising the question of where to regulate<sup>1</sup>. If convergence affects the distribution of need, burden and/or efficacy through the chain, it thus challenges both decisions.

9. The most apparent risks of a traditionally fragmented regulatory approach are:
  - Weakening the effectiveness of regulation if alternative providers in other channels can not be regulated;
  - Distortion of competition between regulated and alternative providers;
  - Reduced supply or increased cost of bundled goods and services, benefiting from internal subsidies;

Beyond the increased complexity of regulating multiple delivery channels, the globalisation of ICT adds an international dimension; potentially leading to:

- Loss of regulatory effectiveness and of potential economic returns due to *regulatory flight* - firms move or are taken over by firms outside the regulator's jurisdiction. This is exacerbated if convergence giving less-regulated foreign firms a cost advantage.
  - *Regulatory competition* - globalisation threatens a regulatory 'race to the bottom' convergence creates competition among regulators in the same country with overlapping remits.
10. Critical in addressing these challenges is that the whole information delivery chain needs to be taken into account. Policy makers must rethink lines of policy responsibility and governance, forms of intervention and the associated operational objectives. Examples of these changes include increased scope for self-regulation and market-assisted methods such as spectrum trading, to support and complement traditional regulation and competition policy.

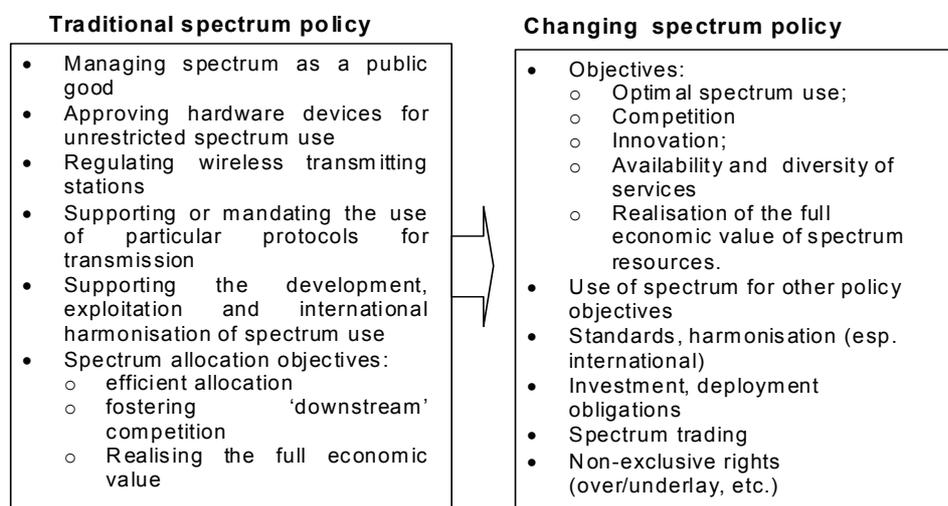
### **Policy instruments**

11. *Self-regulation* plays a visible role in both US and UK responses to convergence. Self- and co-regulation become viable alternatives to traditional regulation, where the speed of change and difficulty of control and enforcement require instruments that are more flexible, better grounded in the market and therefore more credible and less burdensome to stakeholders. Specifically, formal telecom regulators that typically compel the behaviour of one or a few dominant providers in relation to their regulated activities only indirectly influence other parts of the value chain, and non-telecom providers of analogous services and unregulated activities. A self-regulatory body can adjust participation, rules and enforcement, as the situation changes and thus enjoys 'shorter' and more effective chains of command in addressing convergence-related issues. But because self-regulation primarily serves participants' collective interests, it may be vulnerable to collusion, corruption or the erosion of effectiveness, transparency, accountability and proportionality. This vulnerability may require government support, constraint or monitoring especially where self-regulation replaces or outsource formal regulation.

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<sup>1</sup> This includes the use of existing regulatory relationships to encourage the cooperation of e.g. service providers in the governance of activity originating or ending at other parts of the chain (e.g. file-sharing).

12. *Spectrum allocation* has become a strategic policy tool. Wireless communications are essentially free from many fixed facilities - which make them harder to control ex post and makes it more effective to regulate them ex ante by attaching conditions to the right to broadcast or receive signals. Figure B summarises this change and the strategic objectives that regulators seek to achieve through spectrum policy.



**Figure B: changing role of spectrum policy**

Auctions have become the leading allocation method, intended to reduce exposure of the spectrum authorities to legal liabilities, and to allocate spectrum where it is most highly valued.

### Case studies

13. Three Case studies – in the US, UK, and South Korea help gauge possible regulatory responses and changing market governance approaches, and their impacts in the area of technology, economics and society (TES). They were chosen as they represent very distinct approaches to the governance of very dynamic local information markets.
14. Specifics of the US case.

The main regulator in the 'information delivery' market is the Federal Communications Commission (FCC). The FCC is in itself not a 'converged' regulator, as it shares its competences at the federal level with the Department of Justice (DoJ) and the Federal Trade Commission (FTC), dealing with competition and consumer protection policy; and at the state and local level with the state public utility commissions (PUCs). The FCC board is a political body appointed by the US President and conformed by the Senate; for the rest it is largely under the control of the Congress.

The case study analysis has shown a very strong contrast in the US approach to that revealed in the UK, as the US telecoms regulators essentially lack a coherent and forward-looking approach; rather, the US policy has been fundamentally reactive, resolving conflicts as they arise between consumers, incumbents and new players. Also with respect to convergence, there is no grand strategy but more of a 'muddling through' approach. The US system depends to a great extent on court rulings, and an active civil society involvement. However, where the FCC intervened, its decisions had a major impact on

convergence and market developments. The intervention to ensure local market competition lead to a nation wide telecommunication duopoly; deregulation of broadband access supported cable operators, as telecommunication networks remained regulated; and the dilution of media ownership rules have boosted the online presence of major broadcasters.

The reactive nature of the US approach provides for a very predictable, robust regulatory environment in which new entrants can challenge existing practice. This has allowed breakthrough rulings and keeps the FCC at the forefront of setting policies dealing with the effects of convergence. However this comes at a high legal cost and allows incumbents to delay or stop new players from entering.

The US is one of a few countries with strong inter-modal broadband competition between Digital Subscriber Lines (DSL) and cable modem, and with a significant Fibre-to-the-Home (FTTH) development. However, the FCC has been less effective to ensure competition over the networks, which is also reflected in the fierce debate over net neutrality, which has not (so far) been much of a concern to European regulators. All in all the US market and its regulators provide a lot of interesting cases as it is here where the innovation is highest and regulatory challenges come to the fore. The US is also an interesting market to observe as it has pioneered with new policy instruments like self-regulation and sophisticated spectrum auctions. A major difference between the US and many other countries is the comparatively low level of content regulation in the US, making it easier to accommodate convergence of content distribution.

#### 15. Specifics of the UK case.

The UK communications market is one of the more competitive in Europe and is characterised by a complex industry structure with a dominant telecom incumbent, a mix of good (uptake of digital television, content diversity) and bad (broadband penetration, price and quality) performance, a content industry strongly affected by a public sector incumbent, the BBC and a converged regulator employing highly sophisticated tools and closely engaged with industry, community and academic communities.

The UK case stands out as having the most 'converged' regulator, Ofcom, which was deliberately formed out of a merger of five existing regulators to deal with the new realities of integrated information delivery markets. However, Ofcom does not serve as a comprehensive and independent regulator of all aspects of the information delivery chain. It is more appropriate to think of it as a central platform on which converging issues, tools and styles of analysis can be integrated and through which the activities of key policy stakeholders can be coordinated. Ofcom is independent and has significant policy setting, supervisory and regulatory powers, which it applies with a strong inclination towards liberalised markets and deregulation. Ofcom's duties fall under separate government departments and thus separate Commons Select Committees. There is no single structured House of Lords system of oversight of Ofcom.

The UK case is interesting as Ofcom strives to lead the way in many areas; actively procuring and conducting research, piloting new spectrum auction designs, conducting wide scale consultations, engaging stakeholders and supporting self regulatory solutions, especially in the internet domain and the area of audiovisual content. It uses its position to

support innovation and competitiveness whilst protecting the interests of consumers. The case study identified five major shifts in methods, (1) Compliance shifted from telecommunications licensing towards authorisation, requiring companies to certify compliance with 'conditions of entitlement' (e.g. must carry rule, network, significant market power conditions, etc) – facilitating entry and flexibility while minimising the need to extend regulation to 'converged in' outsiders. (2) Spectrum management shifted towards a market-based approach opening the way for spectrum trading among licensed and unlicensed spectrum users and increasing unlicensed use where technically feasible. (3) Licensing moved from detailed and prescriptive terms towards a more transparent and liberal regime with greater co- and self-regulation. (4) Content regulation moved to a 3-tier regulatory structure to rationalise gaps and overlaps. (5) Media ownership is being extensively liberalised.

Content and broadcast policy were only partially transferred to Ofcom and remain the least-integrated parts of its portfolio. Most aspects are handled by the Department of Culture, Media and Sport (often in partnership with Ofcom) and most competition policy enforcement is handled by the Competition Commission (on referral from the Office of Fair Trading - to which Ofcom can itself refer complaints); this includes cross-ownership restrictions. Ofcom has been active in domains relating to internet content.

#### 16. Specifics of the South Korean case.

South Korea has a dynamic market environment, high broadband penetration, and apparent leadership in the development of converged services. Its market development is mostly dominated by large telecommunications companies, less by bottom up innovation of new entrants or content industry. The government has actively supported the roll out and access to broadband (FTTH) and embraces ICT as the main driver of competitiveness for the Korean economy. The convergence trend in South Korea was led by the market and the government was relatively slow to follow. After 2004 it has initiated a reform process of its market governance and regulation, in response to convergence. The government sees convergence as a positive development and a policy goal in itself, with high potential for innovation and new service development. South Korea chose to adopt the single regulator model by merging the telecommunications regulator MIC and the Broadcast regulator KBC in the new KCC. KCC has been given a broad remit involving a range of technical, economic, and societal objectives.

However, this converged approach is only partially implemented, as its reporting structure continues to follow the segregation between broadcast and telecommunication and there remains a rift between the legacy regulators as to the structure of a new 'converged' communication regulation. Overall South Korea demonstrates the ability and drive to balance the technological, economical and societal (TES) objectives. This balance is influenced by regulatory legacy, with content policy being dominated by societal concerns and telecommunication policy by the market and technology perspectives.

In the application of new policy instruments South Korea is less advanced than the UK and the US. Spectrum auctions have so far not been used as allocation mechanism. SK still relies mostly on beauty contests and administrative pricing, with a very prescriptive approach to usage and technologies to be applied. Much effort has gone into creating secondary spectrum markets and reuse of abandoned spectrum, but without notable effect

so far. South Korea has access to significant private and public research capacities to support forward looking policy making, but is slow to integrate scientific knowledge into regulatory practice.

## Conclusions

### 17. Comparison of cases

The three cases share a number of important features. They all acknowledge convergence as a relevant trend that has the potential for disrupting the market and the existing governance structures and regulation. This awareness has led to regulatory adjustments in the case of the US, and a total overhaul of the regulatory landscape in the UK; with a more modest review in Korea currently being implemented. These change processes were strenuous and encountered a lot of internal resistance, which required political leadership and perseverance to succeed.

The impact of regulators on the market proves to be strong. In all cases a degree of path dependency can be observed in the market based on the legacy regulatory system. This tends to have a distorting effect on the market, and often leads to incoherent policies across the information delivery chain; e.g. biasing (large) telecom operators in South Korea; strengthening the duopoly, and discriminating between (unregulated) cable and (regulated) telecommunication infrastructure in the US; and strong ties between the regulator and the incumbent telecommunications provider, and favouring economic over societal objectives in the UK.

None of the cases have a fully converged solution. In the UK Ofcom is not fully in charge of content and media policy; whilst the FCC does not have powers over the internet. The South Korean situation is still developing, but the current set up suggests that communications and audiovisual content policy will retain certain of its traditional characteristics. In all cases a general competition authority plays a complementary role.

Typically all cases have chosen to integrate spectrum policy in the mandate of the 'information' regulator; as it is considered a key strategic ex ante policy tool with large impact on the 'information' market and society as a whole. The traditional technological objectives have been replaced by a more strategic balancing of TES objectives, which requires coherence and consistency in their application. The allocation mechanism of choice is the increasingly sophisticated spectrum auction. Differences occur in the views on the need to ensure technological and service neutrality, and mechanisms on reuse, and extending licences.

Markets:	Source to Publisher	Publisher to Search agent	Search agent to Connection provider	Connection Provider to Devices	Devices to Consumers
<b>United States</b> ■ = FCC      ■ = Other      ■ = Shared					
<b>T=Tech</b>	-	-	Cyber security; (DHS, DoJ)	Spectrum; hardware access; ntw sec.	Information security, self-regulation
<b>E=Econ</b>	DoJ, FTC	Fair access; Media ownership	FTC	FCC in Telco, FTC in cable	DoJ, FTC
<b>S=Soc</b>	DoJ (e.g. child pornography)	(very limited) Indecency rules	-	Universal service policy	Self-regulation
<b>United kingdom</b> ■ = Ofcom      ■ = Other      ■ = Shared					
<b>T=Tech</b>	-	Personal Information, network security	Communications network security	Spectrum, device neutrality;	Encryption, Info security, Self-regulation
<b>E=Econ</b>	OFT, CC	Public value test; Media ownership	Telecom group, BT undertakings	Regulation	OFT, CC
<b>S=Soc</b>	DCMS, self regulation	Public interest test	-	Universal service policy; digital dividend	Awareness raising; privacy; ICO
<b>South Korea</b> ■ = KCC      ■ = Other      ■ = Shared					
<b>T=Tech</b>	-	-	Enhance Cyber security; Network upgrades	Spectrum; hardware access	KISA; Information security
<b>E=Econ</b>	Competition, innovation, access	eg IPTV law Media ownership	Competition; KFTC	Regulation, Competition	Competition, KFTC
<b>S=Soc</b>	Policing of eg bullying, pornography	Active content policy	-	Universal service policy; digital dividend	Privacy, Consumer rights

**Figure C: Indicative overview of competencies of regulators in the 3 cases across the information delivery chain in the TES domains**

18. Differences between cases:

As Figure C indicates, the level of regulation and coverage of the information delivery chain by the ‘Information’ regulator differs between cases; with a high level of integration in the UK and low levels of regulation and a more fragmented mandate for the FCC in the US. Where systems are less integrated they tend to depend stronger on inter-institutional coordination. A certain degree of institutional competition can also be observed which may lead to inconsistent policy outcomes and distortions in the market.

On the competition angle there is an important difference that needs to be noted: European/UK policy has not succeeded in forcing a “second wire to the home”, while US policy has not succeeded in forcing a “third wire to the home” – nonetheless, competition is stronger in Europe; despite the very different rates of e.g. cable penetration, etc. European customers have a greater choice of alternative internet service providers (ISPs) and therefore of services, applications and content. South Korea leads the way with effective competition between and over networks.

From a regulation perspective, both the US and the UK are committed to minimal regulation to deal with significant market power (SMP) and to deregulation where

possible. In the UK, the separation of enforcement powers and Ofcom's independence have helped put this principle on a firm and objective analytic footing. In the US, the ambiguities and increasingly-outdated provisions of the 1996 Telecommunications Act have left the FCC vulnerable to politicisation and lobbying and have, as a result led to a retreat from a pro-competitive philosophy towards a form of deregulation closely aligned with incumbent's interests.

We can therefore anticipate that the market and regulatory situations will continue to diverge. The UK (and by extension Europe) will likely see a richer diversity of alternatives through increasing unbundling and facility-based competition. Unlike the US situation, infrastructure competition will be introduced in an environment where service, content and application competition and weakening of vertical constraints have already taken hold. By contrast, the US duopoly situation seems likely to continue and strengthen.

In addition, the linkage between competition and societal policy domains driven by convergence (and exemplified by the European perspective on net neutrality) should help to eliminate stovepipes and improve coordination both within converged European telecom regulators and among telecom, consumer and competition regulators. By contrast, the US regulator does not have explicit powers to regulate the Internet. While the FCC could seek to develop such rules using its overall (but vague) jurisdiction over electronic communications (Title I of the 1996 Act), it could only do so by in effect shifting from an executive to a legislative body, but without the formal checks and balances to which Congress is subject.

Thus, the convergence-spawned issues facing the UK and the US differ in severity, detail and the capacity to handle the problems within the existing framework. The chances of disruptive rather than evolutionary change are therefore probably greater in the US where competition is weaker and the legal framework less clear, and less clearly adaptable to the particular challenges of convergence

### **Responses and recommendations**

19. Change is on-going and cannot be pinned down by a single approach. The most integrated and coherent approach adopted in the UK still faces difficulty in responding to uncertainty and change. A critical feature for dealing with uncertainty is to retain closeness to the market, effective involvement of stakeholders, and control over flexible tools to intervene.
20. A monolithic information regulator is not the sole or not even the best answer to deal with convergence. Even in an integrated regulator traditional stove pipes remain and new ones emerge. This may not be a bad thing all together as this leads to different view points and debate, which would otherwise be smothered inside the organisation.
21. The cases demonstrate the need for a balanced set of ex post and ex ante policy tools. Ex post rulings can be slow to react to changes in the market and due to their costliness prejudice in favour of large incumbents and punish new entrants (services and technologies). On the other hand ex post approaches make sure that rulings are limited to areas that have real relevance; and the risk of misjudging the trend is very small. Ex ante tools like spectrum policy are able to support favourable developments and outcomes more directly. However they risk picking the wrong 'winners' and supporting interventions at the 'wrong' stage in the technological development and deployment cycle

22. Convergence needs a regulatory/policy response across the whole information delivery chain. This does not mean that all functions have to be accrued in one organization, but it requires that there is:
  - a coordinated application of tools/instruments
  - a central governance structure for the coordination of the activities of different regulators, that allows effective arbitration between TES and ABC to achieve coherent decisions
  - a system which has the ability to identify, acknowledge and adjust to change.
23. It also requires establishing overall public value objectives at the political level, to ensure that all instruments and organizations are aware of the need to achieve/defend a balanced application of policy objectives (TES) for all stakeholders (ABC); thus aligning of objectives, structures, processes and policies.
24. More active partnership between telecom and competition authorities; and between the telecom/spectrum and the broadcast/content 'silos' in and between the regulator(s) is required to deal with the convergence challenges like net neutrality problems.
25. To deal with convergence, regulation is not enough, as enforcement becomes more difficult and more direct impact can be achieved by applying other instruments:
  - self- and co-regulation
  - ex ante instruments like spectrum allocation and management policies
  - stakeholder and expert consultations
  - general competition policy
26. Following the logic of the cases the information regulator should also be in charge of spectrum policy. The cross-cutting nature of this instrument and its critical strategic importance require that it is applied in a fully consistent and coherent manner with other regulatory instruments, and across all related policy areas (telecommunication, media and broadcasting, content). This is necessary for achieving broad societal and economic objectives, in addition to taking account of technological concerns.
27. With regard to self-regulation, in developing and implementing either a reactive or a proactive response to convergence, regulators must consider:
  - How to evaluate existing and proposed self-regulation
  - How to develop strategies of cooperation, support and even deferral to suitable arrangements

The implementation of a clear and coherent strategy for ensuring that self-regulation preserves accountability and transparency, maintains regulatory effectiveness, and does not produce additional problems of e.g. collusion and exclusion.