



Implications of technological convergence for antitrust policies

Andre Rossi de Oliveira
Portland State University and CERME/UnB

Agenda

- What is technological convergence?
- Scope of this training session.
- Competition and access to next generation networks.
- Antitrust issues
 - Obstacles to entry
 - Vertical integration
 - Models of competition
 - Bundled services
 - Access to content
- Conclusions

What is technological convergence?



- Multifaceted concept
- Our definition: Process through which technological innovations make it possible for ICT services that were originally only accessible via their own specific channels to be delivered over any platform.

What is technological convergence?

- Example: Voice until recently only transmitted through telephone wires and (analog) TV received through cable, satellite or over the air. Technological convergence allows voice, (digital) TV to be transported over many different platforms.
- Counterpart: Development of new consumer devices such as the smartphones, HDTVs and personal computers.

What is technological convergence?

- Convergence is the result of the interaction of many technological developments:
 - Digitalization is the cornerstone.
 - Packet-switched technologies enabled platforms for multi-service delivery in the same network.
 - Internet Protocol (IP) provided the means for communicating data across a packet-switched network by delivering packets from the source host to the destination host solely based on their addresses.

Scope of training session

- Convergence lowered barriers to entry in several ICT markets, intensifying competition, giving consumers more choices of providers and services, and lowering communication costs.
- Industry boundaries were blurred. Network owners can offer a variety of services in multiple markets and content providers can easily reach final users with no need to own network.
- New challenges for policy makers, regulators and antitrust authorities.

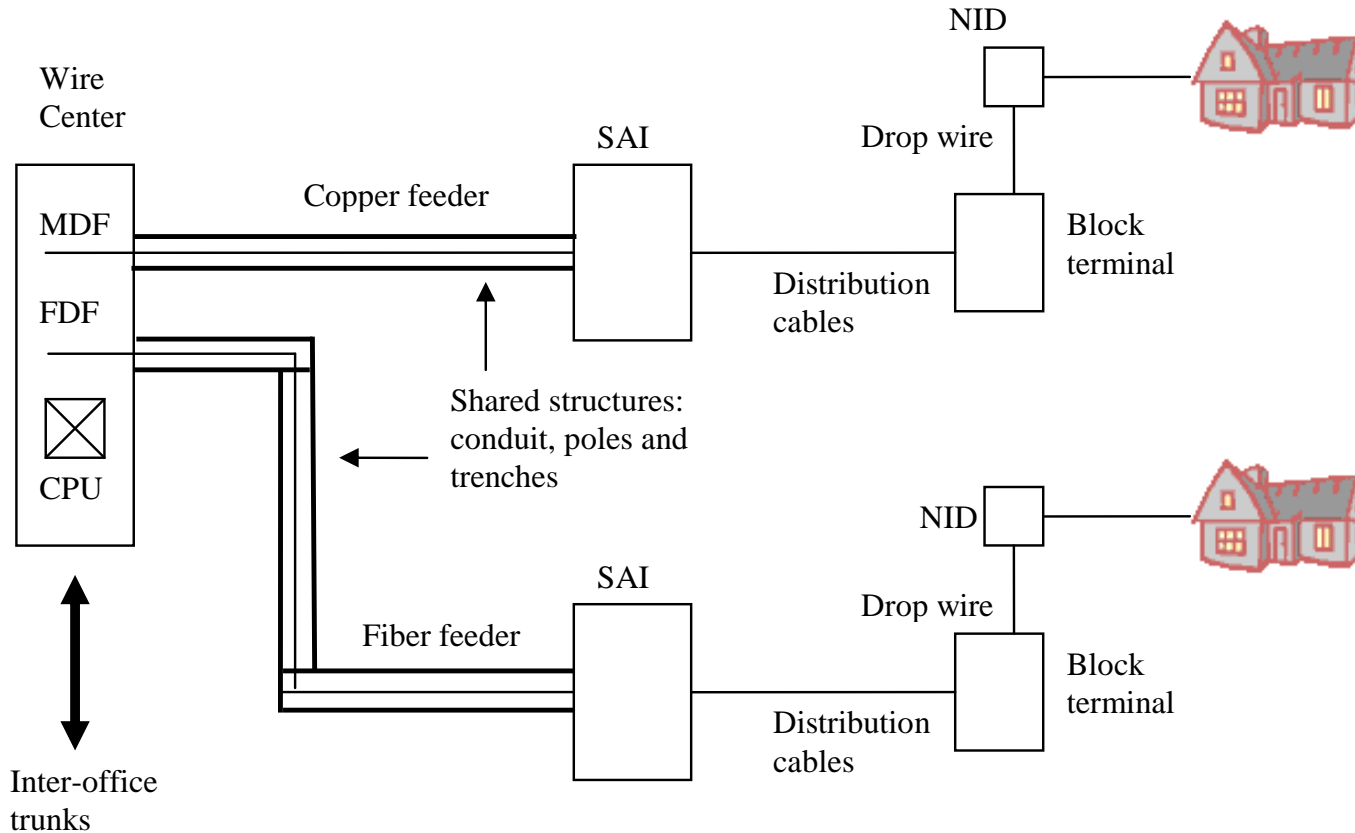
Scope of training session

- We will focus on antitrust issues that surface as technological convergence reshapes telecom markets, particularly broadband and next generation networks (NGNs)

Competition and access to NGNs

- Open access policies: Require (mostly) incumbents to make available to other companies, usually at regulated rates, hard-to-replicate elements of their network
- Open access theory:
 - Since duplication of certain network elements is very costly, competition will likely not materialize if potential competitors are not granted access to those elements
 - Even if duplication is economically feasible, it might entail higher social costs than open access to the bottleneck.

Competition and access to NGNs



Competition and access to NGNs



- Types of open access:
 - Full unbundling
 - Shared access
 - Bitstream
 - Wholesale

Competition and access to NGNs



- Facilities-based competition:
 - Since new technologies have both reduced sunk costs and allowed for the provision of multiple services over the facilities, it is now feasible for entrants to replicate incumbents' bottleneck facilities.
 - This “hard” type of competition is preferable because it encourages investments in infrastructure and long run commitment by entrants to remain in the market.

Competition and access to NGNs



- Access to incumbent networks, at regulated rates, was critical part of early introduction of broadband and played major role in driving speed and price competition. (Yahoo!BB the first entrant)
- Access requirements do not seem to have stymied investment in fiber by the incumbent NTT.

Competition and access to NGNs



- Entry based on leased access to plant of government-owned (power) cable incumbent not in the broadband business during transition from dial-up to broadband.
- Substantial facilities-based competition from cable and electricity.
- Large public investments and high-density urban areas make it difficult to draw lessons from South Korea.

Competition and access to NGNs



- Facilities-based competition from cable and unbundling policies are complementary forms of competitive entry, not substitutes.
- Most of entry happened through wholesale and unbundling.
- Entrants' "investment ladder" advancement was facilitated by being purchased by incumbents from nearby countries.
- Competition occurred mainly between companies across platforms rather than between (monopoly-owned) platforms. Finland is example of incumbents invading each other's territories using unbundling as element in the entry strategy.

Competition and access to NGNs



- OPTA, the Dutch regulator, was the first in Europe to implement a requirement for fiber unbundling on regulated terms.
- In November of 2008 KPN entered an agreement with a private company that had begun to invest in fiber-to-the-home as a real-estate-like investment, Reggefiber, to deploy the fiber infrastructure in a number of towns.
- KPN will own 41% of the stock of the new venture, which is expected to invest 6-7 billion Euro in rolling fiber out to the home.
- KPN will provide service over that platform alongside, and on equal terms with, its competitors.

Competition and access to NGNs



- France created an effective regulatory regime that forced a powerful incumbent to open its network to competitors.
- In Germany, the incumbent was able to use delay tactics, hindering competitive entry.
- In France, Free entered the market through unbundled loops. Where it rolled out fiber, Free offers triple-plus play that includes 100Mbps upload/50Mbps download, HDTV, and unlimited voice calling nationally and to 70 international countries for EUR29.99 per month, or about USD32.59 PPP price.

Competition and access to NGNs



- In addition, subscribers have access to Wi-Fi hotspots whenever they are within reach of another Free subscriber's home, because the home Freebox that connects each subscriber to the service also acts as a hotspot for any Free subscriber.
- Germany appears poised to take advantage of its much larger cable penetration, but it remains to be seen how it will compare to France's reliance on open access to next generation networks.

Competition and access to NGNs



- Formal adoption of unbundling may be insufficient to achieve competition
- Primary reliance on strong cable/telecom facilities-based competition, rather than unbundling-based entry.
- Performances lagged over past few years when compared to top-performing OECD countries.
- Reliance on competition between strong cable and telephone incumbents may be insufficient to sustain high penetration and capacity and low competitive prices.

Competition and access to NGNs



- Unlike France, Britain has significant cable network.
- Instead of relying solely on facilities-based competition, telecom regulator enabled competition over the telephone network through unbundling, implemented by functional separation (Openreach).
- Result: Sharp decreases in prices, increased penetration and investments, and entry of new competitors.
- Functional separation also adopted in New Zealand, Sweden, and Italy, the Netherlands (indirectly), and announced in Australia.

Competition and access to NGNs



	Pros	Cons
Open access	<p>Significantly reduces barriers to entry</p> <p>“Investment ladder”: entrants gradually increase investment in network elements</p> <p>May avoid inefficient duplication of facilities</p>	<p>Need for vigorous and costly regulatory oversight</p> <p>May reduce incentives for companies to invest in network expansion</p>
Facilities-based competition	<p>Stimulates investments and technological innovation</p> <p>Limits the dependence of competitors on another's infrastructure</p> <p>Lowers regulatory costs</p>	<p>Possibly inefficient replication of facilities</p> <p>Competition might not be strong enough</p>

Competition and access to NGNs



Public ownership	<p>Speeds up roll out of infrastructure when private sector investment is weak</p> <p>Facilitates implementation of universal service policies</p>	<p>Distortion of market signals</p> <p>Possibly inefficient management</p> <p>Crowding out of private investments</p>
Shared investment	<p>No need for redundant facilities</p> <p>Cost and risk sharing</p> <p>Possible separation between wholesale and retail activities</p>	<p>Difficulties in enforcing contracts</p> <p>Potential anticompetitive practices</p>

Source: Berkman Center, 2010.

Antitrust issues

- Obstacles to entry
 - Traditional: Economies of scale and scope, legal barriers
 - Access to multiple dwelling units
 - Exclusive agreements between providers and owners of multiple dwelling units might keep competitors from serving a substantial share of the market. Especially worrisome with facilities-based competition when new infrastructure is deployed by joint ventures.
 - These agreements might give incentives for provider to upgrade facilities in the building, benefiting consumers; antitrust analysis should take this into account.

Antitrust issues

- Obstacles to entry
 - Limitations to access to programming (content)
 - By foreclosing access to certain “must-have” programming, VIPs render services supplied by rivals less valuable to consumers.
 - Potential benefits: Innovation and investment in programming and possibility of product differentiation among competitors.
 - Availability of spectrum for wireless broadband
 - Spectrum critical for providers to enter or expand the provision of wireless services.
 - Efficient allocation and reallocation of spectrum should be always pursued.
 - Little sense in imposing strict restrictions on how wireless operators can use the spectrum they license.

Antitrust issues

- Obstacles to entry
 - Access to backhaul services
 - Broadband providers with no network of their own need to purchase interoffice transport through the incumbent's network (backhaul).
 - Lack of competition in backhaul services can hinder entry and dampen retail competition; companies that own infrastructure may have the incentive and ability to raise their competitors' costs in the provision of broadband services.

Antitrust issues

- Vertical integration
 - In Japan, South Korea, France and Germany, move to ubiquitous and seamless connectivity led regulators to accept increased vertical integration between mobile and fixed broadband
 - Mergers between fixed broadband firms and mobile broadband providers took place.
 - In some places, open access requirements applied to mobile broadband platforms.

Antitrust issues

- Vertical integration
 - Will potential competition be reduced by permitting vertical integration between fixed and mobile service providers?
 - Antitrust and regulatory authorities in some countries seem to believe that mobile telephony is a substitute for fixed telephony and impose restrictions on vertical integration.
 - Costs and benefits of lifting existing restrictions have to be weighed before new policy is put in place.
 - More of a concern in developing countries, where the shift to next generation networks and technologies is not imminent.

Antitrust issues

- Models of competition
 - Open access:
 - Limited scope for antitrust intervention.
 - Need for regulator committed to enforcing unbundling policies and monitoring access to bottleneck infrastructure.
 - Access prices usually regulated; sometimes negotiated between companies.
 - If regulation of access is successful, there should be substantial entry and competition strong enough to dissipate anticompetitive concerns.

Antitrust issues

- Facilities-based competition
 - Regulation should play a secondary role to antitrust intervention.
 - Main concern is to avoid collusive behavior, a distinct possibility given the typically small number of competitors
 - Difficult to identify and punish collusion, so adoption of policies that introduce more competition may be desirable.
- Capacity sharing
 - Competition authorities should pay special attention to potential exclusion of competitors by owners of shared facilities.
 - Ideally, new facilities should be subject to open access obligations.

Antitrust issues

- Bundled services
 - Technological convergence led to new marketing and pricing of telephony, broadband, video, and wireless services: Packages of bundled services like “triple-play” or “quadruple-play”.
 - Growing number of consumers choose to purchase bundled plans:
 - Discounts.
 - Convenience of single bill and one-stop shopping.

Antitrust issues

- Bundled services
 - Companies benefit because they can use existing connection to earn more revenue per customer. In addition, customers who purchase bundles tend to switch providers less frequently.
 - Some broadband providers not able to offer bundles over their own facilities
 - Antitrust analysis should weigh the benefits of bundling services against the potential reduction in competition.

Antitrust issues

■ Access to content

- Broadband users place value on ability to receive data-intensive content such as video, interactive games and other forms of entertainment.
- Content (or programming) is developed by companies (content providers) whose revenues come from selling ad space, charging user fees, and e-commerce.
- Magnitude of revenue depends strongly on number of users that are aware of and have access to the content providers' web sites.

Antitrust issues

- Access to content
 - Success or failure of content provider depends on how visible it is to final consumers.
 - Internet portals (which can be affiliated or not with ISPs) are important partners for content providers, since internet users many times start to surf the web by connecting to some portal's initial web page. Many content providers have their own portals.
 - Content providers' revenues are directly proportional to the location and exposure given by portals to links connecting users to their servers.

Antitrust issues

- Access to content
 - ISPs with national presence are well positioned to offer content aggregation and promotion services, and most of them own internet portals.
 - Vertically integrated providers (companies that also own broadband infrastructure) are especially well positioned and can engage in different types of discrimination.
 - Discrimination against certain content providers and/or portals
 - VIP supplies differentiated aggregation, promotion and distribution of content services.
 - Tools: Prices, contractual restrictions, and service quality.
 - For instance, a vertically integrated provider could keep its customers from getting access to some portals or simply lower the quality of their broadband experience when they visit those sites.

Antitrust issues

- Access to content
 - Discrimination against certain content providers and/or portals
 - Decreasing function of the size of the network: Since the main motivation to engage in this type of discrimination is to increase content sales to customers outside the VIP's market, a larger network means smaller gains, everything else the same.
 - Discrimination against other broadband providers
 - VIP limits the distribution of affiliated content and services.
 - It is profitable to refuse to supply affiliated content to competing broadband providers when the network of the VIP is sufficiently large.

Antitrust issues

- Access to content
 - Discrimination against other broadband providers
 - Customers perceive the VIP's network as more valuable, increasing the demand for access to it. Resulting increase in revenue directly proportional to the size of its network.
 - On the other hand, company foregoes revenues from content distribution over foreclosed platforms. This loss is inversely proportional to the size of its network.

Antitrust issues

■ Access to content

• Refusal to deal

- Two complement goods: *A* and *B*.
- There are economies of scale and/or network effects in the production of good *B*.
- Firm 1 is the single seller of (or has considerable market power in selling) good *A*, but competition may take place in the future. Other firms can potentially produce *A*, *B*, or both.
- Firm 1, which also has the ability to produce good *B*, refuses to deal with one or more firms producing good *B*. Say firm 2 produces good *B* and firm 1 refuses to deal or reduces considerably its purchases from firm 2.
- Loss of scale might lead firm 2 to reduce its operations or even leave the market, reducing the number of suppliers of good *B*.

Antitrust issues

- Access to content
 - Refusal to deal
 - This creates a barrier to entry of new firms in the market for good *A*, since they might not be able to purchase the complement good *B* in order to produce *A*.
 - In the broadband market, good *A* would be broadband access and good *B*, internet content. Access providers may have an incentive to reduce the scale of non-affiliated content providers with the aim of reducing their number and making it harder for potential competitors to enter the market for broadband access.

Conclusions

- Provided overview of most recent developments in broadband markets around the world
- Special attention to next generation networks
- Investigated some of main antitrust issues that have emerged from the ongoing process of technological convergence.

Conclusions

- Identified main approaches to spurring competition in broadband markets as well as corresponding antitrust problems generated.
- Other key antitrust problems: Obstacles to entry, vertical integration, bundled services, and access to content.
- Not a comprehensive study of the implications of technological convergence for antitrust policies
- Discussion of key antitrust issues stemming from technological convergence hopefully will encourage further work on the subject.

Conclusions

- Main lessons for Brazil
 - Need for a strong, engaged regulator.
 - Need to encourage competition in broadband infrastructure.
 - Best policy is a mix of open access, inter-modal competition, and shared investment.

Conclusions

- Main lessons for Brazil
 - Need to review classification of telecom services
 - In May of 2009, due to a decision by a federal court of Minas Gerais, two telecom companies were required not to sell subscription TV and broadband services together. The decision was based on article 39 of the “Código de Defesa do Consumidor.”
 - ANATEL and the companies argued that the internet access service was additional to the subscription TV service, but the “Ministério Público Federal” claimed that internet access was a telecommunications service and as such was not to be bundled with the value-added service to be purchased from a content provider.
 - This is an example of how regulatory boundaries may end up preventing competition from taking place.



Obrigado!

André Rossi de Oliveira
arossig@gmail.com



***Diálogo Regional sobre
Sociedad de la Información***

Horacio Urteaga 694
Jesús María, Lima - PERU
Teléfonos: (51-1) 3326194 / 4244856
Fax: (51-1) 3326173

info@dirsi.net
www.dirsi.net



Este trabajo se llevó a cabo con la ayuda de fondos asignados al IEP por el Centro Internacional de Investigaciones para el Desarrollo y de la Agencia Canadiense de Desarrollo Internacional, Ottawa, Canadá.

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Se sugiere citar este documento de la siguiente forma:

Rossi de Oliveira, Andre. Implications of technological convergence for antitrust policies [diapositivas]. Brasilia: DIRSI, 2010.