

Alternatives of public policies to deploy universal fixed broadband infrastructure: analysis of the options considered in Brazil

Rodrigo Abdalla Filgueiras de Sousa, Luis Claudio Kubota, João Maria de Oliveira (Ipea)

Brief summary

Products and services for telecommunications in Brazil are expensive and sparsely diffused when compared to many other countries. Lack of directive policies and absence of real competition are the main reasons for high price, low density and poor quality of broadband services. Unequal distribution of income, as well as regional differences, is clearly reflected in the characteristics of broadband density. A strong regional market concentration exists in Brazil, whereas it is not immediately observed at the national level. To overcome these issues, three options were discussed in Brazil. First, a state-owned company would compete with existing providers, offering broadband access directly to both consumer and carrier segments. Second, a public private partnership (PPP) would also promote competition, without direct government intervention. Third, legal reforms in taxation structure of broadband and employment of existing Universal Service Fund (USF) could also be able to increase density of the service in Brazil. By the use of analytical method proposed by the authors, this brief reveals that none of the options considered in Brazil had a true comprehensive approach to the rollout of broadband services. Final policy recommendations include the coordination between public and private investments by the central government, the focusing on less developed regions, the need to foster competition, the possibility of taking advantage of idiosyncratic conditions and the necessity of assessing and combining different policy instruments to find a suitable solution.

Overview of broadband infrastructure in Brazil

The regulatory framework in Brazil was set in 1997. At that time, its objectives sought competition and universal service for fixed telephony. Convergence of services and technologies has transformed the market structure of telecommunication industry in Brazil. In ten years, 28 companies were merged into 4 large economic groups. But, during this period, regulation has not dynamically evolved. This situation eventually led to high prices and low density of telecommunication services. Broadband access, in particular, was severely affected, since existing infrastructure was controlled by incumbent operators that neither had to share it with competitors nor were subject to universal service obligations.

The Network Readiness Index (NRI), a comprehensive index about the use and deployment of ICTs created by the World Economic Forum (WEF), reveals that Brazil is losing ground to other countries. It is composed by 68 variables, classified into environment, readiness and use. In 2007, Brazil was classified in the 53rd position. In the next year, it fell 6 positions, ranking 59th. One year later, Brazil kept its previous classification.

Brazil is also marked by strong social and regional inequalities. The overall density of fixed broadband is about 20% of the households. However, depending on the region and level of income, this index varies from 1% (lowest income households of the North and Northeast regions) to 87% (highest income households of the Center-West region). Urban and rural areas also affect the broadband density. While the broadband is accessible to 23% of the households in urban areas, only 3% of the rural families have the service available.

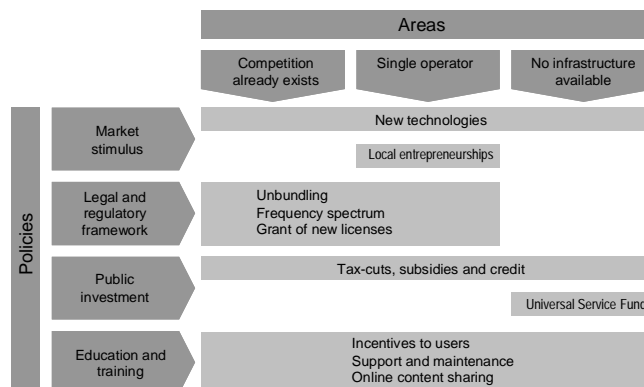
The study reveals a strong concentration at the municipality level, whereas this is not immediately observed at the national level. Prices of broadband services are also considered very high, when compared to other countries and to households' income. Competition is fundamental to decrease prices, but market structure is based on virtual monopolies at the local level. Mobile broadband is a substitute good for fixed broadband, but it is still far from the reality of low income families in Brazil, due to schedule of deployment and high prices of service plans and equipments.

Analytical framework

The analytical framework used in the present policy brief considers two basic dimensions. One refers to the existing market conditions: whether it is already competitive, a monopoly or completely unserved. A certain level of competition exists in areas characterized by higher economic and demographic densities. Areas under monopoly have a single provider that controls the telecommunication infrastructure. Finally, unserved areas are usually located in rural or remote territories.

The other axis is related to the applicable public policies, segmented in four categories: market stimulus, legal and regulatory framework, public investment, and education and training. Market stimulus refers to measures that incentive entry of new competitors. By legal and regulatory framework, it is meant that unbundling, allocation of unused spectrum, and granting of new licenses would potentially increase the level of competition. Public investment is related tax cuts, investment of the USF and use of subsidies. Finally, education and training deal with the level of IT literacy and the potential generation of content.

Figure 1 – Relationship between service areas and applicable policies



Source: Prepared by the authors

Options considered in Brazil

1. To create a state-owned company

This solution would increase competition with existing providers, offering broadband access directly to both consumer and carrier segments, taking advantage of an idiosyncratic condition in Brazil: the use of existing optical fibers from other state-owned utilities companies. Because of government direct control of the process, it may use new technologies to accelerate broadband rollout. At the end, this was the option selected by the President of Republic.

2. To settle a PPP

This option would also use the existing optical fibers and also be used to promote competition, but without direct government intervention. Public investment was intended to be minimal. However, regulatory considerations were not taken into account, and the use of new technologies was not

stimulated. A possible outcome is the capture of the new infrastructure by an incumbent, to strengthen its own position over its competitors. As a result, market concentration might be intensified. Due to its intrinsic weaknesses, this alternative was the first one to be abandoned.

3. To accelerate deregulation

The final option was to continue with existing regulatory model, using public funds to implement universal access and cutting taxes to lower prices. Operators argued that the most suitable instruments would be: i) allocation of frequency spectrum; ii) granting of new cable TV licenses; iii) tax-cuts, subsidies and credit; and iv) application of USF. Other approaches, like fostering new technologies, incentive of local entrepreneurs and unbundling, would face more difficulties to be implemented, since they refrain from government's measures to increase competition.

Brief analysis of the previous options

In fact, none of the three options discussed in Brazil had a true comprehensive approach to the rollout of broadband services. Each one had its particular advantages and disadvantages. The most adequate solution would be a combination of good aspects of every proposal, but, due to political constrains, it has not been possible yet. The first two options addressed the issue of low competition levels in broadband services, since market concentration is a fundamental reason to explain poor quality, low density and high price in Brazil. On the other hand, none of the proposals have identified education and training policies as a critical issue. Probably, this item will return in the following rounds of implementation of broadband policies.

Recommendations

1. Coordination of the central government

In countries with similar characteristics to Brazil (high structural heterogeneity, unequal distribution of income, strong regional differences, large territory), a significant market failure is expected to exist. For this reason, the central government should assume its role as an essential part of the broadband rollout process and should coordinate public and private investments. In the Brazilian experience, incumbents must comply with coverage and quality obligations for fixed telephony, but not for broadband access. Therefore, the lack of public directives for broadband led to a circumstance where operators have preferred to direct their service offers to the most profitable markets, serving high income families located in urban centers.

Besides that, suitable policies were not carried out. Some examples are useful to clarify this matter. The USF, created in 2001, was never used. Despite the fact that taxes for telecommunication services in Brazil are amongst the highest in the world (up to 63% of revenues), the central government could not coordinate a tax cut with state and local authorities. The regulatory agency in Brazil has failed to implement measures to increase competition, in both retail and interconnection markets. The legal framework is outdated: its focus is still on fixed telephony. All of these situations show the difficulties faced by the central government, with respect to management, fiscal and legal issues.

2. Focus on less developed regions

Unequal distribution of income, as well as regional differences, is clearly reflected in the characteristics of broadband density. Hence, public investment and service obligations should be directed to build infrastructure in less developed regions, suburban areas, middle and small cities, and rural areas. If duplication of the infrastructure turns to be necessary, it is probable that market will begin to work by itself.

Although it may seem quite obvious that public investments should be directed to underserved and unserved areas, it is not so simple to settle priorities, when it comes to implement the policy. Criteria and data outlining these areas should be clearly defined by the policy maker.

3. Need to foster competition

Competition should be fostered in all levels of the broadband service. Facilities-based competition is likely to occur where demand is more intense. But it is advisable that service-based competition be available at less profitable areas. For example, in Brazil, copper local loops are installed in all communities with more than 300 inhabitants. Although these resources are available, about 50% of the cities with less than 30,000 inhabitants do not have Digital Subscriber Line (DSL) services. If regulatory framework had incorporated service-based competition, these municipalities might have been already served by broadband access.

For markets vertically integrated, it is probable that a neutral wholesale operator reduce entry barriers to new competitors in the access market. In that case, local entrepreneurs may be valuable partners to promote broadband at municipal levels. As the government intended to create a state-owned company to provide backbone to unserved cities, the support of local internet service providers (ISPs) would be essential to the long term success of the plan.

4. Taking advantage of idiosyncratic conditions

It is advisable that every suitable idiosyncratic condition be used in favor of the policy. Therefore, all existing infrastructure should be taken into account when debating the policy. In the Brazilian experience, the existence of state-owned unused optical networks created an opportunity to reduce public investment, coordinate broadband rollout and hasten implementation timelines.

5. Combination of policy instruments

Policy makers should not rely on a single solution to deploy broadband services. The problem of promoting universal service to broadband is extremely complex: social, economic and regional conditions may vary a great degree, depending on previous history. Hence, it is recommended that a policy for broadband be comprehensive, encompassing different aspects of consumers and operators' needs at the local level and using complementary tools to incentive both supply and demand sides of broadband markets.