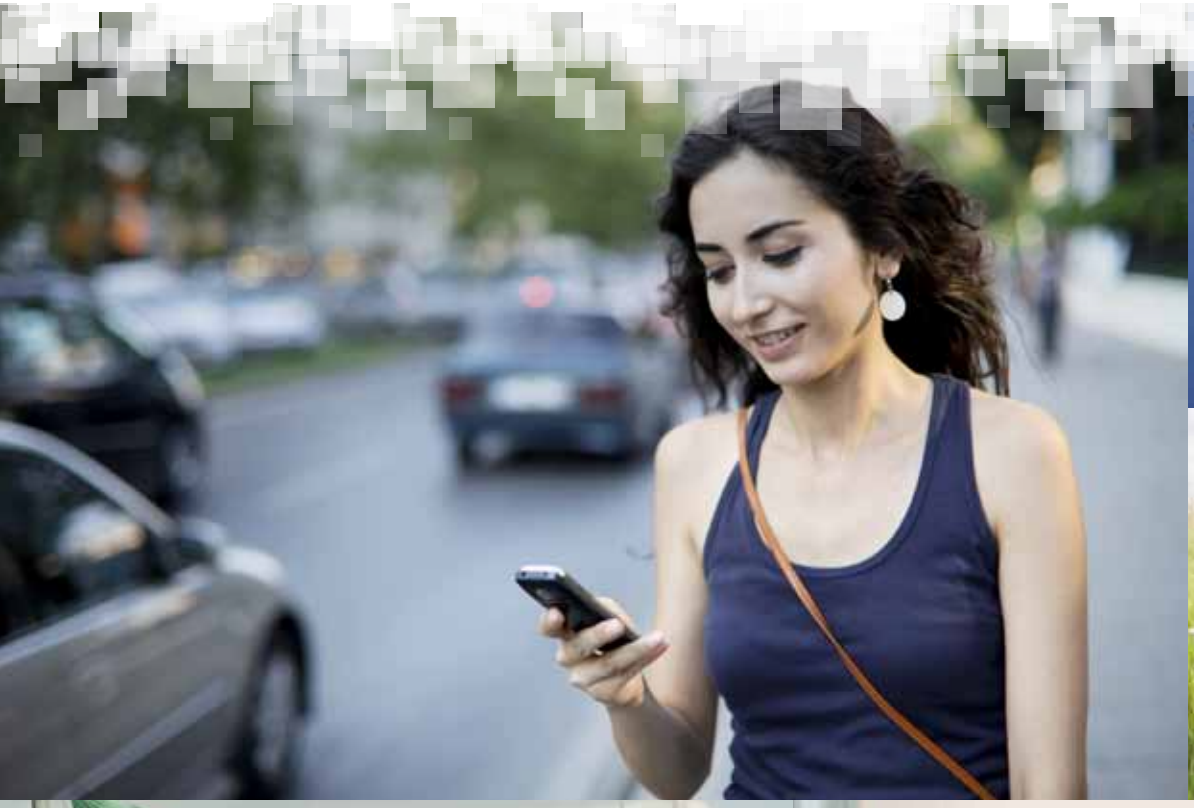
Brazil Mobile Observatory 2012

Executive Summary











Over the past decade, Brazil has been on a path of increasing prosperity, economic stability and improvements in social welfare. Swift action by the government led to Brazil being among the first developing economies to recover from the effects of the global financial crisis that took hold in 2008. Despite slower growth in 2011, Brazil overtook the United Kingdom as the world's seventh largest economy.

Today, GDP growth is trending up, the proportion of the population living below the poverty line has been in a steady decline, and public spending on education has increased faster than nearly any other country, according to OECD. The largest economy in Latin America, Brazil is a country on the move.

Mobile services and the commercial ecosystem surrounding them should play a major part in this transformation. The fast-growing mobile sector is generating jobs, creating new business opportunities and delivering new categories of services such as mHealth, mEducation and mCommerce, which are making an increasing impact.

Around the world, governments that have taken a light touch in taxing and regulating the sector, i.e., those that have trusted in market dynamics to achieve universal mobile coverage and healthy competition, have seen the fastest spread of affordable mobile services for their citizens. Brazil is demonstrating its leadership in some regards, such as the commitment to deliver 4G mobile services for the forthcoming Olympic Games and World Cup. However, as this report describes, a number of constraints exist for the mobile sector, risking undermining mobile's potential to improve people's lives, and livelihoods, across the country.

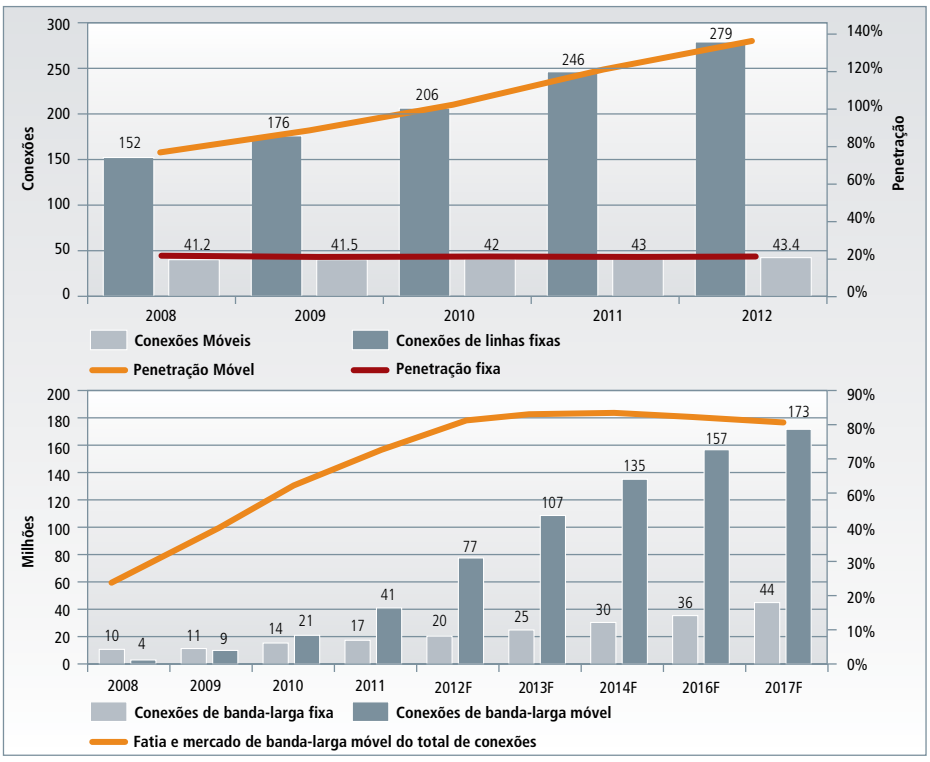
A growing market

With over 260 million connections, Brazil is the fourth largest mobile market in the world, and as the largest market in Latin America, drives innovation, business ventures as well as social and cultural activities across the region.

Mobile penetration is expected to reach 140% in 2012 compared to fixed-line penetration of 22%, placing mobile as the key provider of all types of telecommunications services to the majority of consumers. This coverage allows mobile technology to connect segments of the Brazilian population that were previously unconnected as well as addressing the digital divide by increasing the availability and affordability of data services. In just four years since the introduction of 3G services, over 60 million 3G and mobile broadband connections have been provided, making mobile the main provider of broadband services.



Figure A: Mobile and fixed connections and penetration; mobile and fixed broadband connections and penetration



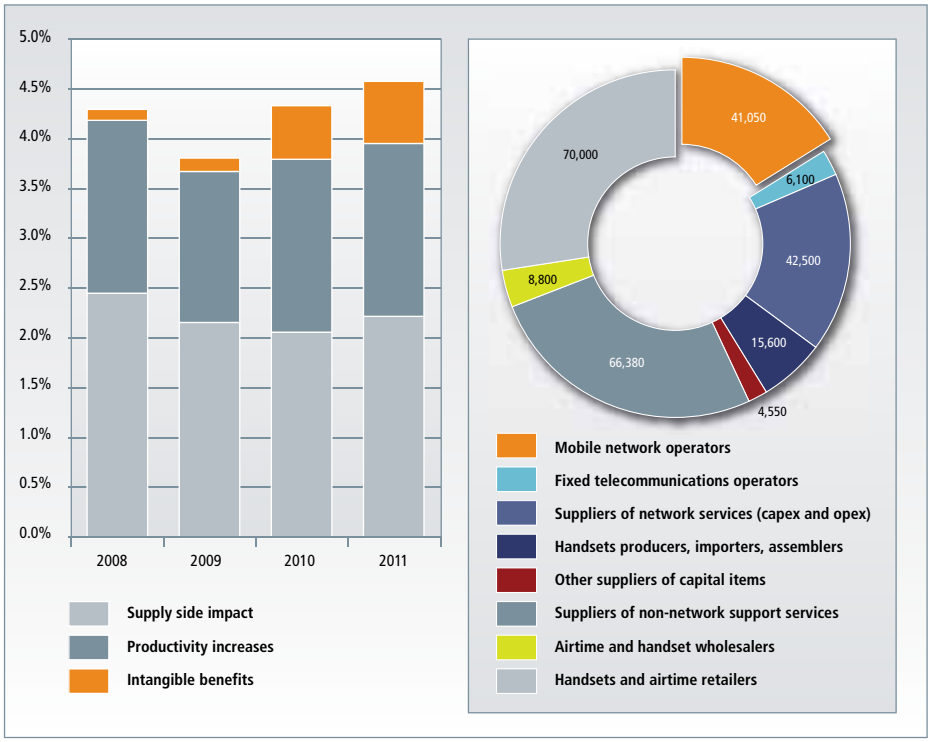
Fonte: Wireless Intelligence, Telebrasil and Teleco



With seven network operators, the mobile sector in Brazil is highly competitive, supporting a significant local and regional mobile ecosystem of handset manufacturers, providers of network and support services, local content providers such as "app" developers, and a network of wholesalers and retailers of handsets and airtime that spans the whole country. In 2011, this ecosystem contributed significantly to Brazil's economy:

- The direct economic impact of the wider mobile ecosystem amounted to BRL 90 billion (US$ 53.8 billion), including BRL 52.2 billion (US$ 31.2 billion) in taxes.
- The wider economic impact added BRL 185 billion (US$ 110.6 billion) to the Brazilian economy, or approximately 4.6% of GDP. This calculation takes into account the significant effects of mobile technology on workers' productivity and the benefits provided to consumers through price reductions and increases in usage.
- Approximately 250,000 Full-Time Equivalent (FTE) jobs were created across the Brazilian economy.

Figure B: Economic contribution (% of GDP, 2008–2011) and employment (FTEs, 2011) generated by the mobile ecosystem



Source: Deloitte/GSMA analysis



Mobile services are a key enabler for social and digital inclusion

Mobile services have become an essential driver of social and digital inclusion in Brazil, with effects ranging from greater personal and family communication through to increased social cohesion and access to mobile services for people on low incomes and in the most rural areas.

- Mobile services are playing a major role in achieving the targets set by the government in its National Broadband Plan, which aims to extend internet services to all municipalities by 2014. The government's target to achieve 60 million broadband connections by 2014 has already been met, due to the growth and investment of mobile sector. There is a clear rationale for the government to consider a further role for mobile as a complement to, or substitute for, fixed broadband in social and economic development.
- Mobile services have transformed the way health, education and youth services are provided. There are currently seven mHealth programmes and numerous mEducation programmes running in Brazil, and the rising prevalence of smartphones and tablets seem certain to generate additional social benefits, especially in the rural and poorer areas of the country.
- Mobile operators have established a number of corporate social responsibility programmes in Brazil, benefitting local communities. TIM's programme in Rocinha, Vivo's programme in Belterra, and Oi's education programme are just a few examples.

Brazil's unprecedented growth in mobile services is set to continue

The Brazilian mobile market is set for unprecedented growth in the near future, as it increasingly extends its leadership in Latin America.

- The increased affordability of smartphones and tablets will allow Brazilians to take advantage of mobile broadband, and the social and commercial services associated with it. Data traffic per user is expected to grow on average by 83% per year between 2008 and 2020, with over 75 million smartphones forecast in the country in 2016. As a result of these pressures, demand for mobile broadband is expected to increase 19-fold between 2011 and 2016 and mobile networks are expected to come under significant strain if new capacity is not made available.
- The 2014 World Cup and the 2016 Olympic Games in Rio will further increase demand for mobile services, however this is likely to add significant congestion to mobile networks, as these events are widely expected to consume significant bandwidth. The World Cup is expected to bring over 1 million roaming connections, generating 300% of the normal data traffic for a period of 8 weeks. Analysts estimate that during the London 2012 games, 60GB of data crossed the network in the Olympic Park every second, and this figure is likely to grow significantly in four years' time. Providing extra capacity in such a limited time window will be a key challenge for operators.
- New business models affecting a variety of services are being successfully developed and tested on the market, including mPayments, mCommerce and mAgriculture. In particular, mPayments are expected to be available soon at retail points, in transport facilities and for special events. These services will create opportunities for small and medium-sized enterprises to add value through the development of applications and customized solutions, and the provision of local content along the value chain. New social and business services from mobile technologies will become increasingly popular.

M2M and NFC technologies and opportunities for local industry development

mPayments	Paying your bills (Danhero Mail) Paying in stores (Cielo, Banco do Brazil and Oi, PagSeguro	**mAgriculture**	Pest control Real-time info pieces and weather forecasts. DatAgro
mCommerce	Buying online (Group on) Compare prices (BoaLista)	**mAutomotive**	Fighting vehicle theft Wi-Fi car services
Smart Cities/ mUtilities	Monitor energy consumption, Reda Ampla Rio De Janeiro M-Voting, Rio Grande do Sul Public transports, Fortelaza Entertainment, World Cup locations	**mInfotainment**	Personalised in-flight entertainment Mobile TV and services on-the-go

Barriers to growth can be removed by supportive policies

Mobile services provide the government and Anatel with an opportunity to further address social and digital inclusion, which are widely recognised as key enablers for the whole economy. However, for growth opportunities to materialise, a series of hurdles for mobile operators and consumers need to be lowered.



Simplifying regulation and approval times for site deployment

Approvals for site and antenna deployment have been identified as the greatest obstacle to further investment by the mobile community. An array of permissions from local and federal authorities can take well over a year to secure before a site can be built and made operational. In addition to planning approval, regulations on frequency limits for electromagnetic waves are also particularly complex and unaligned among a number of national and local government bodies, as each local authority has the flexibility to determine its own policies. There are more than 250 different antenna policies in Brazil.

Overlapping and often contradictory rules are supervised by different organisations, making compliance from mobile operators increasingly complex and uncertain. An equally complex framework for infrastructure sharing is an additional barrier, as this option provides an important means for operators to rapidly increase capacity. Allowing infrastructure sharing could be key to the next wave of network investment by operators. However, infrastructure sharing should not be overly regulated, and access should not be mandated, as the threat of access obligations would risk reducing incentives for investment.

As capacity increases are urgently required, especially in the 12 World Cup cities, complex and uncoordinated federal and local regulations and approval processes on site deployment could be simplified. Positive steps have recently been made in regard to the proposed Antenna Law and to MiniCom's efforts to facilitate the approval process in four World Cup cities. The constraints remain severe and pose a threat to the success of the World Cup events, so priority should be given to the approval of this new homogenous and coordinated legislation.

Reducing inefficient taxation to increase access and usage

Taxation on mobile consumers and operators in Brazil is one of the highest in the world. The special sales tax that applies to mobile usage forces mobile consumers to pay almost 0.3 BRL for every Real spent on a phone call. Numerous taxes on operators' revenue reduce profitability, impacting retail rates and investment. High taxation is also inhibiting service development, as services that could be offered using mobile technology attract additional mobile-specific taxes. Although positive changes have been proposed recently to exempt machine-to-machine (M2M) services from special taxation, taxes remain high.

The potential benefits of reducing this taxation are substantial, as tax reductions and rationalisation could drive further consumption (the average mobile user in Brazil consumes around 40% fewer minutes than its Mexican peer) and investment in productivity-enhancing commercial services. The Communications Minister has recently defined the high tax burden of telecommunications services as a limit to the expansion of the sector, and noted that a reduction of this pressure would lead to double the sector's current rate of growth. Removing mobile-specific taxation, and consequently driving increased usage and penetration, could substantially expand the tax base for the government, potentially making the tax reduction neutral for the government in the medium term.

To ensure that taxation does not become an obstacle to further growth and to access to new mobile broadband services, targeted tax reductions could be considered.

Allocating the 700MHz Digital Dividend to mobile services in the medium term

Spectrum will become an even more vital input to the success of the industry and to the success of the government's digital and social inclusion programmes. While the recent auction of the 2.5GHz band will alleviate spectrum constraints in the short term, in the medium term the technical properties of this band will not allow nationwide mobile broadband coverage. A study carried out by the ITU estimates that in 2015, mobile telecommunications services will need over 1GHz of spectrum to meet market demands, and today in Brazil 500MHz of spectrum are allocated to mobile.



Anatel is currently considering whether to allocate the 700MHz band, currently allocated to broadcasting and known as the Digital Dividend, to mobile services. The 700MHz band has a number of beneficial technical properties whereby operators could extend mobile broadband coverage more efficiently, while installing a lower number of sites, which would reflect on lower prices for consumers and on extended services, especially in rural areas. A GSMA/TAS study recently calculated that, in Brazil, allocating the 700MHz band to mobile instead of broadcasting would provide an additional direct and indirect contribution to GDP of US$ 5.3 billion, would generate over 4,300 job opportunities, and could generate additional tax revenue for the government of US$1.3 billion. Scale economies would also materialise, benefitting consumers through more affordable terminals as well as operators through cheaper equipment, which would in turn drive further investment.

Implementing a more transparent, predictable and supportive regulatory regime

As a result of the global economic crisis, investment funding has been harder to obtain, and a key factor that global investors consider when deciding to invest in telecoms is whether a modern, transparent and predictable regulatory regime is in place. Competition policies should take precedence over regulations; regulatory decisions should be adopted through a transparent and consultative process; regulatory policies should be based on the 'economic benefit' principle; and coordination between local and national bodies should be improved to avoid double regulation at the local and national levels, particularly in relation to network roll-out regulations for mast and site deployment.

A collaborative approach between government and operators can maximise the benefits from growth

The mobile industry in Brazil is an enabler of economic and social development, and mobile should be at the centre of any ICT development strategy as it allows, through extensive internet access, to meet the government's social inclusion goals. Affordable mobile broadband will bring numerous advantages to Brazilians of all income and education levels, and a host of new services in all economic areas, from transport, banking, commercial transactions, to health and education. It will lead to a wave of transformation in the way Brazilians communicate and live their lives. Brazil faces a number of challenges in the next years, including the successful delivery of the World Cup and Olympic Games. By working in partnership, the mobile operators and the government can continue the remarkable success story of this industry, extending its unique benefits across Brazil and boosting Brazil's image on the world scene.

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