

2019 UPDATED: Demand forecasts for passive infrastructure equipment and services in Central and South America



TowerXchange checks in on demand across six different categories of equipment and services in the 15 most active CALA tower markets



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Read this article to learn:

- Which markets should be business development priorities for solution providers?
- What is happening in terms of new network deployments across the Americas?
- Which MNOs could still sell their towers and generate new business in terms of tower upgrades and O&M contracts?
- Which countries need towers and which projects are driving growth?
- Which are the hottest markets for small cells and DAS?

The CALA telecom infrastructure market is home to some of the most interesting countries in terms of communications infrastructure build and upgrade. 2019 see several towercos starting to explore energy services, which will require enhanced monitoring and access control systems, there are also enhanced fibreisation plans in key markets such as Mexico and Argentina, the consolidation among operators with Telefónica divesting its Central American operations and Millicom enhancing its position. These are just a few of the top events affecting the regional industry and, in light of them, TowerXchange is pleased to offer an updated overview of the most significant opportunities for equipment and service providers across CALA.

In the run up to sixth edition of the TowerXchange Meetup Americas, taking place July 9-10 in Boca Raton, we offer our readers an exclusive analysis of where opportunities lie for tower and smart pole manufacturers, turnkey providers, small cell and DAS, energy solution providers, RMS and site management system suppliers, access control experts as well as consultants.

In this article, we analyse the dynamics of the top markets in the region as well as provide a snapshots of some of the other countries which are yet to see any towerco activity but might become interesting targets in the future.

Here is a list of the specific categories we are analysing:

- **Energy:** with towercos starting to go beyond steel and grass and offering efficient energy management

Meetup Americas 2019

The sixth annual retreat of the top CALA
telecom infrastructure elite

9-10 July, Boca Raton, Florida

www.towerxchange.com/meetup-americas



Image courtesy of the City of Boca Raton Office of Economic Development

solutions to their customers, solution providers interested in the region have an interesting opportunity to expand their portfolio of clients beyond carriers. Renewable energy solutions, more efficient batteries and partnerships with ESCOs are all being analysed and taken into consideration.


■ **RMS, ILM and access control:** while RMS and ILM are still a relatively new concept in CALA, access control solutions are among the top products being purchased by both MNOs and towercos to secure their sites and equipment. In


fact, theft is a real threat to business continuity and regional players report it to be a more stringent issue in urban environments than in rural areas.


■ **Towers and Smart Poles:** BTS levels have been a bit slower than expected in 2019, but the outlook remains positive and several spectrum auctions planned in Mexico, Guatemala and Colombia which should lead to stronger investments to densify networks in both rural and urban environments. Key regional players expect to build 50-75% traditional macro towers, 25-50% alternate site typologies over the next two years.



■ **Small cells, IBS and DAS:** While slower than in other geographies, new technologies are starting to be adopted across CALA. Opportunities for small cells are intensifying in Brazil while IBS is stronger in Mexico and Peru. As towercos open up to becoming neutral hosts, TowerXchange expects the deploying of het-net solutions to intensify.



■ **Advisory and consulting:** Where are deals happening? Which countries are still designing their telecom and infrastructure legal framework? These are the markets where the expertise of consultants and law firms is high on demand! ■



Vendor opportunity matrix	Towers and Smart Poles	Energy	RMS, site management & access control systems	Turnkey infrastructure	Small cells, microcells, DAS and IBS	Advisors	MNOs	Towercos
Argentina 	High	Medium	Medium	High	Medium	High	Telecom, Movistar and Claro	American Tower, SBA Communications, Atis Group, Innovattel/Torresec, Plata Tower Company, PTI, Teletower Argentina, Telxius, Tower One, CSS, GME Alliance
<p>Argentina has around 16,000 towers (most in hands of the MNOs) and needs to double or triple that number in order to reach acceptable levels of coverage. Towercos landed in Argentina three years ago and despite the huge potential of the market, they haven't achieved the expected level of penetration due very complex permitting and tax regimes as all the licenses have to be approved by local municipalities that don't necessarily respond to the central government authority. Additionally, operators are very reluctant to release their assets so its very hard for international towercos to develop a reasonable footprint there. However, the potential of this market is enormous and if regulators, operators and towercos can overcome these barriers, Argentina will become one of the biggest and most dynamic tower markets in CALA.</p> <p>Telecom, the market leader in terms of subscribers and number of towers (6,553 sites) is very open to collaborate with towercos and they will allocate around 40% of their 710 new sites to tower companies in 2019. Claro plans to build 200 new sites and 30% will be done by towercos, while Telefónica is building just around 100 new sites and 40% of them will get done through BTS contracts - mostly by Telxius and SBA as they have master agreements. MNOs also build their towers independently so there is also big potential for infrastructure providers to work directly with operators, who also prefer to manage small-cell and urban solutions deployment independently, dealing with the technology provider directly.</p> <p>While grid access is not a major issue, MNOs need power solutions for off-grid sites and for those on unreliable grids, and this will become an increasingly crucial requirement as MNOs deploy networks in remote areas. All three operators use acid lead batteries and generators as backup but they are all considering and testing new power solutions such as lithium batteries and renewable energy systems. For security, another key operational concern, they are also testing access control technologies and any alternative that can prevent vandalism and theft, from concrete walls to electronic lockers.</p> <p>As most of the operators are in need of capital and everybody in the industry is struggling with permits and local regulators, Argentina also holds plenty of opportunities for private equity firms, banks as well as legal and finance advisors.</p> <p>The Ministry of Modernization and telecoms regulator ENACOM are working on a few initiatives to improve the permitting process while MNOs are changing both their culture and strategy, becoming more open to the idea of working with tower companies. Argentinian economy is slowly recovering and MNOs are building again so we can expect great opportunities for infrastructure providers and vendors in the short term, although they will all have to deal with the particular complexity of working in the country.</p>								


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Bolivia 	Medium	Medium	Medium	Medium	Unknown	Low	Entel, Tigo, Viva	Phoenix Tower International
<p>Earlier this year, Bolivia finally welcomed PTI as the country's first independent towerco and the company has sealed a sale and leaseback deal with Trilogy International Partners' subsidiary NuevaTel for 600 sites. The deal will bring new opportunities for solution providers and engineering companies. As it normally happens after a SLB deal, capacity enhancements are likely as well as the implementation of site security solutions and an overall effort to rationalise the portfolio and make its management as efficient as possible.</p> <p>Meanwhile, operators are expanding and upgrading their networks. State-owned MNO Entel is investing US\$288mn in deploying 700 new sites and expanding its and fibre-optic networks this year, while Tigo has also announced a US\$150mn investment to expand its 4G LTE footprint and HFC network.</p> <p>Electricity is a state-owned business in Bolivia and over 60% of it is currently supplied via thermal generation, with the remaining 40% being produced thanks to hydropower. The Bolivian government is heavily engaged in providing universal access to electricity and over-producing in order to export. However, some energy solutions are likely to be needed when coverage plans extend to rural communities beyond the reach of reliable grid.</p>								


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Brazil	High	Medium	Medium	High	High	Medium	TIM Brasil, Vivo, Claro, Oi, Algar Telecom	American Tower, SBA Communications, Grupo TorreSur, Phoenix Tower do Brasil, CSS, Brazil Tower Company, AlfaSite, Centennial, QMC, Skysites, Highline do Brasil
	<p>After a few quiet years, Brazil is re-emerging as one of the most dynamic and innovative telecoms market in the region and MNOs are firmly demanding flexibility and creativity from their infrastructure partners. Claro, who has recently consolidated its position with the acquisition of Nextel, is now focusing on network upgrades rather than deployment. The MNO is modernising its electronic equipment (rectifiers, lithium batteries and generators) to battle intermittency while investing in auto generation by developing the country's biggest private renewable energy project to cut energy cost— a regional trend that the other MNOs are also exploring. Oi has closed a distribution agreement with Minas Gerais' electricity company CEMIG to provide solar to its operations in the state, while the company develops a pilot solar project in São Paulo.</p> <p>TIM and VIVO are also testing renewables, both through auto-generation and by closing PPA agreements with energy providers. Furthermore, the government is incentivising renewables deployment and private companies that develop solar projects can “sell” their surplus back to the grid, bringing opportunities not just for towercos to diversify their business, but also for vendors, turbine and panel manufacturers, ESCOs and battery providers. Pushed by the above, the majority of towercos operating in Brazil are now considering to offer energy management services, a real game changer after years of steel and grass operations and a huge opportunity for ESCOs and vendors in the energy space.</p> <p>Investments in innovation are intensifying, with both MNOs and towercos eyeing opportunities to deploy smart urban solutions, new site typologies and small cells. Always at the forefront, PTB has recently acquired small cells firm K2 Towers and is likely to further diversify into het-net solutions.</p> <p>Security remains a critical issue for both towercos and operators, who are actively seeking access control and remote monitoring systems to efficiently track their spread footprint across Brazil's vast geography.</p> <p>With Oi's portfolio on sale and a few mid size towercos such as Highline do Brasil expanding their portfolio, there are also plenty of consolidation, M&A and investment opportunities.</p>							



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Chile 	High	Medium	Medium	Medium	High	Low	Movistar, Entel, Claro, WOM	American Tower, Balesia, SBA Communications, Telxius, ATP Torres Unidas
	<p>Chilean players have become quite creative when it comes to installing new sites, also as a function of the much discussed Tower Law. Since then, plenty of local and international firms have flooded the Chilean market with new options to overcome the limitations imposed by the law and still be able to proceed with densifying the national infrastructure network. New site typologies, concealed towers, DAS and small cells have all come into play in Chile.</p> <p>Currently, Chile is the 5G test bed for América Móvil's trials in Latin America and the most advanced country on this front, which will result in enhanced opportunities for producers of infill sites such as lightpoles, shortpoles and beyond. Market leader Entel is investing US\$210mn on upgrading capacity and coverage of its 4G networks, while also deploying independently and through BTS, focusing on lower sites and urban typologies.</p> <p>Chile relies heavily on both thermal (approx 38%) and hydropower (approx 62%) for its electricity supply. The government has been involved in the construction of various new hydropower and coal-fired thermal plants as well as a 500MW solar power generation project. Around 99.6% of the population has access to electricity.</p>							
Colombia 	Medium	Medium	Low	Medium	Medium	Low	Claro, Movistar, Tigo, Avantel	American Tower, SBA Communications, ATP Torres Unidas, Centennial, Golden Comunicaciones, Innovattel/Torresec, Torrecom, PTI, QMC, Tower One and various small developers
	<p>Finally, the Ministry of Information Technology and Communications (Mintic) has invited MNOs to express their interest in the 700MHz, 1.9GHz and 2.5GHz spectrum auctions. The auction should take place in Q419 and could considerably boost the level of investment of MNOs after a few fairly slow years in terms of network deployment and tower builds. Good news for the many towercos active in the country! The auction is expected to drive more BTS activities and network upgrades. The country's networks are generally underdeveloped although the QoS is relatively good.</p> <p>The Colombian electricity sector relies mostly on hydropower (65%) and thermal generation (35%). The country is yet to fully explore its renewable potential while a transmission line connecting Colombia with Central America is currently underway. The government has created a system of cross-subsidies between higher income / large consumers and low income / low users of electricity (and water). Around 97% of the population has access to electricity.</p>							


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Costa Rica 	High	Medium	Medium	High	Medium	Low	Kölbi, Tigo, Claro	SBA Communications, American Tower, Continental Towers, Telesites, Phoenix Tower International, TOCSA, At least one towerco looking at energy services in Central America
<p>Last year's spectrum auction and the entrance of Tigo (which is taking over Movistar's assets) guarantee a busy 2019 for Costa Rica's telecom market. Both Claro and Tigo should up their deployment games. In the meantime, State-owned Kölbi is currently deploying fibre across the country's key cities.</p> <p>In 2018, the country has run on 100% renewable sources for 300 days non-stop and 99.5% of the population have access to electricity in one of the most advanced countries in terms of electricity across CALA and both MNOs and towercos are expected to continue increasing their renewable energy use.</p>								
Dominican Republic 	Medium	High	Medium	Medium	Low	Low	Claro, Orange, Viva	Phoenix Tower international, Innovattel/Torresec
<p>Phoenix Tower International acquired Altice's 1,000+ sites in the country in 2018 and is the market leader.</p> <p>With the grid neither complete nor reliable, RMS and energy equipment suppliers could find plenty of business in the DR (and elsewhere in the Caribbean). In fact, PTI is partnering with ESCOs and cutting down energy consumption by 80%. Claro, the market leader, is actively exploring renewable energy solution for its infrastructure and has already installed solar panels in 40 sites. The MNO is also testing lithium batteries and access control systems to modernise its network and improve efficiency.</p> <p>The Dominican Republic has been going through years of electricity crisis, blackouts and overall inefficiency of the sector. To date, 86% of its electricity is supplied by fossil sources and it's been noted by the World Bank that the country's overall economic growth depends greatly on the improvement of its electricity sector. Around 98% of the population has access to electricity but as said, the grid remains unreliable in many areas.</p>								


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Ecuador 	Medium	Medium	Low	Medium	Medium	Low	Claro, Movistar, CNT	SBA Communications, Innovattel/Torresec, Balesia, Aplicanet, Ecuador Tower Company
<p>While Ecuador is a quiet market compared to the other Andean countries, it also also enjoyed some movements over the past few months. A few new towercos entered the market, hinting at enhanced levels of demand for BTS firms possibly also as a result of Claro's investment plans (US\$450mn by 2020) to improve its network and capacity. The Government is also looking at appointing a private administrator to run State-owned CNT. At the moment, CNT is the strongest builder and providing plenty of BTS opportunities to existing towercos.</p> <p>56% of the country's installed electric capacity comes from thermal power and around 33% from large hydropower with the remainder 11% split between various forms of clean energy. In 2011, the government has launched regulation 004/11, creating its first FiT (Feed-in-Tariff) initially benefiting mainly photovoltaic projects and then open to non-solar FiT. Around 97.2% of the population has access to electricity.</p>								
El Salvador 	High	Medium	Medium	High	Low	Low	Tigo, Claro, Digicel, Red	SBA Communications, Phoenix Tower International, Continental Towers
<p>After a two-year delay, El Salvador is currently undergoing a spectrum auction for 140MHz. In the meantime, Telefónica has sold both Guatemala and El Salvador units to América Móvil so towercos will need to tight their belts and become even more efficient. Tigo has agreed to sell its 800 towers to SBA Communications while announcing a 4-year US\$1bn investment plan while Digicel is committed to a US\$450mn investment on 4G LTE. These news should bring plenty of opportunity to solution providers involved in tower manufacturing, turnkey services as well as backup energy solutions.</p> <p>El Salvador is the N. 1 producer of geothermal energy in Central America. Its hydroelectric sector is mostly public while the other sources are in the hands of private companies. To date, 40% of its electricity is supplied via fossil sources and 60% thanks to hydroelectric and geothermal plants. The country is part of SIEPAC, a project aiming at integrating the electricity networks of Central American countries. Around 93.7% of the population has access to electricity.</p>								

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Guatemala 	Medium	Medium	Medium	Medium	Low	Low	Tigo, Claro	SBA Communications, Torrecom, Continental Towers
<p>After Telefónica’s acquisition, Claro will only compete with market leader Tigo in Guatemala, where the election is going to delay the auction of 1700MHz AWS frequencies that was scheduled for June as confirmed by the Ministry of Communications. The duopoly is a concern to towercos and the entrance of a third operator via the spectrum auction would be perferrable.</p> <p>In spite of the turmoil, towercos have enjoyed steady BTS activity in the country.</p> <p>Guatemala’s electricity comes from fossil-based sources (46%), hydropower (26%) and other renewables such as small-hydro and biomass (29%). The country is part of SIEPAC, a project aiming at integrating the electricity networks of Central American countries. Around 78.5% of the population has access to electricity.</p>								

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Mexico	High	Medium	High	High	High	Medium	Telcel, Movistar, AT&T	Telesites, American Tower, Mexico Tower Partners, IIMT, Centennial, Torrecom, Intelli Site Solutions, Conex, MX Towers, Rent-A-Tower, PTI, Tower One, several other small developers
	<p>2019 has been a good year so far for Mexican towercos. This is mostly due to ALTÁN Redes' Red Compartida which has achieved its first deployment target (30% of the population by March 31) and started to utilise BTS firms after a first phase of co-locations. This is a great news not only for active towercos but also for tower manufacturers.</p> <p>In the meantime, MX Towers has sealed a deal with Maxcom to acquire 72 telecom towers in a sale and leaseback deal. Another sign that the market is picking back up also on the deal front. PTI entered the fibre market with an acquisition in Q318 and currently deploying more fibre across Mexico. Players report good opportunities for In-Building Solutions (IBS) while small cells aren't growing as fast as originally expected.</p> <p>TowerXchange is aware of several towercos eyeing energy management options to improve the efficiency of their sites and offer shared solutions to their tenants.</p> <p>After freeing up the 5G-suitable 600MHz band, IFT has confirmed in late 2018 its intention to auction it alongside additional frequencies in the 1700MHz and 2.5GHz bands.</p> <p>The Mexican constitution requires the electricity sector to be federally owned and the Comisión Federal de Electricidad is in charge of its organisation, while a lot of renewable energy providers are entering the market and offering alternative power sources to MNOs. The electricity sector is mainly focused thermal sources (75%) followed by hydropower (19%) and a small component of geothermal energy (2%) and nuclear energy (2.4%). Around 99.1% of the population has access to electricity.</p>							

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Nicaragua 	Medium	Medium	Medium	Medium	Low	Low	Claro, Tigo, CooTel	SBA Communications, Torrecom, Continental Towers
<p>The major headline in the country has been the acquisition of Telefónica by Millicom, as part of the Spanish giant's divestment of its Central American operations. Millicom is expected to consolidate the two units in the upcoming months. While towercos might experience a short-term slow down of activities, the merger is likely to generate new business opportunities, with a stronger and more competitive operator active in the country. Up until now though, MNOs have enjoyed steady growth thanks to a solid BTS pipeline and positive 4G densification activities.</p> <p>In the meantime, the Nicaraguan regulator Telcor is currently looking at reforming the 1995 telecom law with new and improved terms that could mean good news for the local telecom sector.</p> <p>Out of all countries in Central America, Nicaragua is the one with the lower levels of electricity generation and access to electricity. Its supplies rely heavily (75%) on fossil energy (oil) and only 25% on alternative sources such as hydro and geothermal. The country is part of SIEPAC, a project aiming at integrating the electricity networks of Central American countries. Around 77.9% of the population has access to electricity.</p>								
Panama 	Medium	Low	Medium	Medium	High	Medium		
<p>Thanks to its solid dollar-based economy, good electrification (over 80% of rural areas connected to the grid) and political stability, the country has become a new hub for towercos with the likes of SBA, Torrecom and PTI all active in the market. The country presents interesting BTS opportunities thanks to its high quality carrier landscape. Before the sale to Millicom, Telefónica signed a five-year PPA with a solar generation company to reduce power cost by 40%.</p> <p>Panama presents plenty of opportunities for small cells and other new technologies especially in Panama City.</p>								
<p>Cable & Vision, Claro, Digicel and Tigo</p> <p>SBA Communications, Phoenix Tower International, Torrecom, Continental Towers</p>								

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Paraguay 	High	Medium	Medium	Medium	High	Medium	Tigo, Personal, Claro, VOX	American Tower
<p>Paraguay has welcomed its first towerco with the sale and leaseback deal sealed last year between Tigo and American Tower but since then, no other towerco has entered the local market. This might be due to the fact that the country did not present critical deployment needs. However, following the January 2018 spectrum auction, awarded carriers (Tigo, Claro and Personal) might announce strong deployment plans which could lead to new towercos eyeing the market.</p> <p>In recent months, Millicom has started to modernise its RAN infrastructure as well as its 2G, 3G and 4G sites. The MNO is getting ready to deliver 5G and IoT services and currently enabling 4x4 MIMO capabilities. Additionally, the company is deploying micro radios to boost hot-spot capacity.</p> <p>The Paraguayan electricity sector is a public monopoly and the country is one of the world's largest exporters of hydropower, which is being exported to Argentina and Brazil. With less than 0.1% of its electricity being supplied via fossil fuels, the country enjoys some of the lowest tariffs in the region. The sector is still heavily affected by the lack of investment in both transmission and distribution. Around 98.2% of the population has access to electricity.</p>								

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Peru	High	Medium	Medium	High	High	Low	Movistar, Claro, Entel, Bitel	American Tower, ATP Torres Unidas, Innovattel/Torresec, Balesia, BTS Towers, Phoenix Tower International, Torrecom
	<p>2019 was expected to be a big year of carriers' investments for Peru but for now, the market has proven to grow slower than originally planned. This isn't bad news though as carriers are reviewing their plans and starting to announce their plans, just a few months later than expected. Network upgrades and capacity enhancements will all become a necessity in the short term.</p> <p>Since our last update, Phoenix Tower International entered the market via a private deal, SBA Communications acquired Torres Andinas' sites (with the latter exiting the market) and Torres Unidas merged operations with Andean Tower Partners in a landmark deal for the Andean region. Peru remains one of the most exciting countries in the region and offers plenty of opportunities for solution providers in a variety of sectors. Small cells, DAS and alternative site typologies are one of the top priorities for local carriers involved in cell site densification projects, while towercos remain active on the BTS front. In the meantime, Telefónica, IADB, CAF and Facebook have created Internet Para Todos, a neutral infrastructure service provider that will provide connectivity to six million people across rural areas. The company will upgrade the 3,100 2G sites they received from Telefónica to 4G and will deploy 1,000 greenfield rural sites in 2020-2021. Meanwhile, Entel plans to keep expanding its footprint in Peru and the Chilean operator has announced investments of US\$140mn for its network deployment and US\$30mn for fibre expansion in 2019.</p> <p>The country's assorted geography brings some operational challenges and while the grid is good in urban areas, towercos and MNOs will require alternative power and storage solutions when expanding to rural and remote areas. Signal transportation is also a critical challenge and the government will keep investing in fibre to ease connectivity and reduce MNO satellite dependence in rural scenarios.</p> <p>The Peruvian electricity sector has improved considerably since the 90s. In fact, access to electricity moved from 45% in 1990 to 88.8% in 2011, mostly thanks to the privatisation reform of the 90s. To date, fossil energy accounts for 52% of the overall production with 48% relying on renewable suppliers (hydropower). Around 91.2% of the population has access to electricity.</p>							