Thematic
Research



Starlink Mobile: the rocket is moving faster than the disruption

Equity Research

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Brazil: limited near-term impact, but strategic risk is building

As we've done in our Purple Swan report, where we anticipated a disruptive trend, we now bring a new topic. SpaceX's IPO and its SMP filing with Anatel have placed Starlink Mobile at the center of the debate over Brazilian telcos risks. The move reinforces the company's ambitions and expands its regulatory optionality in Brazil, but we still view Direct to Cell much more as complementary than as a material threat to TIM and Vivo. The technology remains far from delivering capacity, service quality, and indoor coverage comparable to urban mobile networks. The main strategic risk is not the network itself, but the channel: if Starlink manages to integrate the service natively into smartphones and establish direct access to consumers, the discussion shifts from infrastructure to distribution and customer ownership. This is a long-term vector that deserves attention, especially if D2C gains traction as a service continuity solution in less densely populated areas. For now, the impact remains more strategic than financial, with no material effect on estimates.

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Overview: SpaceX's S-1 brought Starlink Mobile back into focus. For the first time, the company detailed its ambition in satellite-based mobile connectivity, citing a USD 740 bn addressable market. In Brazil, the SMP license request at Anatel opens a standalone regulatory front and expands strategic optionality.

The initial reaction may be to view this as a new threat to TIM and Vivo. We think it's too early. Direct-to-Cell remains far from replicating the value proposition of terrestrial networks in urban environments. Capacity, service quality and indoor coverage remain key constraints.

The more relevant risk may lie elsewhere. If Starlink gains access to devices through OEMs and turns satellite connectivity into a native feature, it could establish a direct relationship with consumers without replicating incumbents' infrastructure. At that point, the discussion becomes less about technology and more about distribution and customer ownership.

This model could gain relevance not only in remote areas, but also in less dense cities and regions with irregular coverage, where the value proposition may lie less in speed and more in minimum service continuity. If SLA is sufficient, the risk to operators becomes less about networks and more about disintermediation.

Why are we writing about this now? The SpaceX IPO was the trigger. The S-1 filing detailed its ambition in mobile connectivity, positioning the company as a global platform targeting a massive market. Starlink's success in fixed broadband showed demand where traditional infrastructure does not reach, and it is already relevant in rural Brazil.

Mobile telephony, however, is a different story. The regulatory landscape has also shifted: Anatel's SMP filing request, sandbox discussions and global testing have brought competitive concerns into focus. But the answer lies not only in the technology itself, but also in how SpaceX positions itself in the distribution chain.

What is Direct-to-Cell?

Direct-to-Cell is the ability of LEO satellites to communicate directly with standard smartphones, with no satellite dish, no specialized SIM required. The satellite effectively operates as a cell tower in space.

The innovation lies in altitude. LEO satellites operate between ~340-600 km above Earth, versus ~36,000 km for GEO satellites. Latency drops to 20-40 ms, comparable to cellular networks for basic voice and data. A single satellite covers a radius of more than 1,000 km, making it attractive for rural and continental coverage where tower deployment is too expensive.

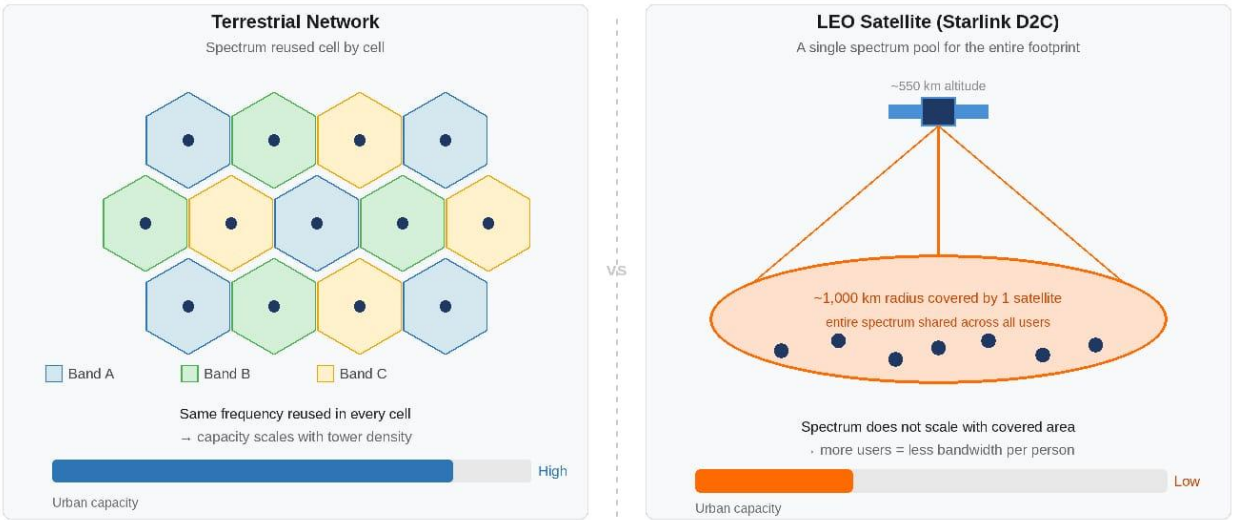
The bottleneck is the spectrum. In terrestrial networks, the spectrum is reused cell by cell. An operator with 20 MHz in the 2.5 GHz band can apply those same 20 MHz to adjacent cells because the coverage radius of each tower is small and interference is manageable. With LEO satellites, this model doesn't work. A single satellite covers more than 1 million km², and the available spectrum needs to be divided among all users within that footprint simultaneously.

In practice, Starlink D2C is capable of handling SMS, basic voice, and low-bandwidth data in areas with few simultaneous users. In dense urban environments, where thousands of users are under the same satellite at the same time, the technology lacks the spectrum to compete with a conventional 4G/5G network. Indoor penetration is another major limitation as most mobile traffic happens indoors, inside homes, offices, or shopping malls, where satellite signals perform poorly.

Indoor challenges remain structural. Although technology will evolve with V2 satellites (expected by 2027), which will introduce more directional phased-array antennas, enabling smaller spot beams, better spectrum reuse and improved capacity, still doesn't reach urban macro-cell granularity.

Terrestrial Network vs. LEO Satellite (Starlink)

	Terrestrial Network	LEO Satellite (Starlink)
Remote coverage	Limited. High expansion cost	Excellent. Natural coverage
Urban capacity	High. Spectrum reused by cell	Low. Shared across footprint
Spectrum reuse	High	Limited
Indoor coverage	Strong (700-850 MHz)	Limited. Wall attenuation
Best use case	Dense and suburban areas	Remote and rural regions
Expected role in Brazil	Primary Network	Coverage complement



The key risk: OEM channel and continuity as value proposition. The most relevant risk for TIM and Vivo in the long term does not seem to be the possibility of the satellite replacing the urban mobile network. The most sensitive point is Starlink using device manufacturers as a direct distribution channel to the consumer, bypassing operators even before needing to compete with them in infrastructure.

This movement has already begun in Brazil. SpaceX is negotiating with Apple, Samsung, and Motorola to encourage the launch of devices compatible with the 2 GHz frequency used in Direct to Cell. The logic is simple: if the hardware is ready when the license is issued, the activation of the service can happen almost immediately, without depending on any operator to reach the end user.

The closest analogy is Apple's satellite Emergency SOS. The service reached the consumer as a native feature of the iPhone, with Globalstar operating as invisible infrastructure underneath. The user does not know, and does not need to know, who provides the signal. It is perceived as a functionality of the device. The local operator is out of the equation in that use case.

If SpaceX manages to replicate something similar to Starlink Mobile, offering basic connectivity as a native feature on Android and iOS, potentially with billing via the App Store or Google Play, the impact on carriers wouldn't be an immediate revenue loss. The initial effect would be more subtle, and possibly more important: loss of position in the relationship with the customer. In telecom, whoever loses this layer loses, over time, the ability to sell plan upgrades, bundles, cross-selling of fiber, subsidized devices, and additional services. The carrier continues to carry the infrastructure but becomes less visible and less commercially relevant.

There is a second dimension here that helps explain why this model can gain traction. The use case does not need to be restricted to rural areas or completely disconnected locations. There may also be appeal in less dense cities, suburban regions, and more scattered areas, such as Petrópolis or parts of the interior of São Paulo, where mobile coverage may be irregular or suffer discontinuities. In these markets, the value of Direct to Cell may lie less in speed and more in the minimum continuity of service. Depending on the delivered data SLA, this may already be sufficient to support a commercially relevant value proposition.

This also changes the bargaining equation. If Starlink has a direct channel to the consumer via device, it starts negotiating with operators from a very different position. It can offer Direct to Cell as a complement to the incumbent's network, capturing part of the value, or simply reduce its dependence on them. The operator that does not agree to a reasonable deal risks seeing the competitor close first.

This is the central point. The risk does not depend solely on SMP licensing, nor does it necessarily involve a direct replacement of the mobile network. It depends on Starlink combining two things: customer access via OEM and a simple, tangible, and easy-to-activate value proposition on the device. If this happens, the issue ceases to be merely technological and becomes clearly commercial.

The Application for a License from Anatel: Starlink's move in February is not merely bureaucratic. By applying for an independent SMP license, Starlink is exploring the possibility of operating in Brazil without depending on a partnership with TIM, Vivo, or Claro. The distinction matters more than it seems.

There are two paths, with very different consequences. In the partnership model, Starlink uses spectrum provided by a Brazilian operator and functions as a coverage extension. The operator retains the customer, defines the plan, handles billing, and controls the experience. Starlink is infrastructure, invisible to the end user. This is the model of the agreement with T-Mobile in the US, where the service appears as a feature within the operator's plan. In the independent SMP model, Starlink obtains its own license, negotiates or acquires spectrum in Brazil, and can market connectivity directly to the consumer, without needing a local operator as an intermediary.

So far, no operator has partnered with SpaceX. Claro and TIM are conducting tests with AST SpaceMobile and Lynk, Starlink competitors, which shows that the dispute over the D2D model in Brazil is still open and that incumbents prefer to diversify rather than depend on a single supplier. None of the three wants to be a laggard, but neither does any want to sign a contract that puts Starlink in a position of strength.

EchoStar's USD 17bn spectrum acquisition is directly relevant for Brazil reinforcing SpaceX's strategy to control the full connectivity stack in markets where regulation permits, reducing reliance on local partners. The SMP application at Anatel should be viewed as the Brazilian extension of this approach. While it doesn't guarantee a fully standalone go-to-market, it shifts the negotiation dynamics. Those who have their own authorization negotiate on equal terms. Those who don't have to accept the other side's terms.

At the same time, the new General Telecommunications Regulation formally allows satellite-based SMP authorization. Anatel is assessing the transfer of EchoStar's S-band spectrum in Brazil to Starlink, the concrete mechanism behind that optionality. The short-term impact is not on operators' revenue. It is on the bargaining power that Starlink is accumulating before the service exists commercially in the country.

Economic impact: the direct economic impact of Starlink Mobile remains concentrated in niches: remote coverage, government contracts, isolated areas, and public projects, where expanding terrestrial network is less efficient. In these segments, the satellite does not need to replace the traditional mobile network to capture value. It simply needs to offer connectivity where the operators' infrastructure does not reach.

There's also potential in basic connectivity for less dense regions and cities with irregular coverage, provided that sustains a service with acceptable recurrence. The appeal lies less in speed and more in continuity.

The most relevant impact, however, may lie in bargaining power. If Starlink builds regulatory autonomy and advances in integration with OEMs, its position in future negotiations with operators will change. This impact does not alter estimates today, but it may influence the economics of future agreements and, at the margin, reduce the commercial centrality of incumbents in parts of the value chain.

Implications for TIM and Vivo: The topic warrants monitoring, but it does not change the companies' investment thesis in the short term. The core pillars remain intact: postpaid, convergence, efficiency, digitalization, and an urban-focused strategy. The risk, if it materializes, is a gradual erosion of operators' centrality in the customer relationship, rather than an abrupt loss of revenue.

In the near term, partnership appears more likely than competition. Starlink needs operators for spectrum access and distribution in Brazil, while operators gain a coverage advantage without having to invest in remote infrastructure. That balance, however, could shift quickly if Starlink accumulates two elements simultaneously: regulatory optionality and direct-to-consumer access via devices.

Catalysts to Monitor:

1. Approval of an SMP license by Anatel, which would structurally shift Starlink's bargaining position and could accelerate its move toward a direct-to-consumer model.
2. Launch of V2 Mobile satellites via Starship, expected in 2027, which should expand capacity and alleviate current technical constraints of Direct-to-Cell (D2C).
3. Announcement of a partnership with a Brazilian operator, which will determine who captures the coverage upside and under what revenue-sharing terms.
4. Any move by Apple or Samsung to embed Starlink Mobile as a native feature in upcoming device launches, which would represent the most important trigger for the OEM-driven disintermediation thesis.

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