



Connectivity and contrasts

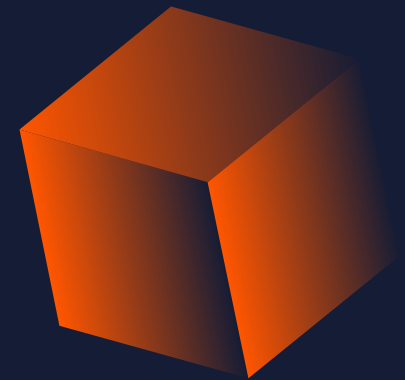
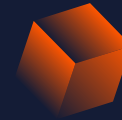
The key to seamless internet access in India

GNX

Country Guide | 2024

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India looms huge in today's economy. More continent than country, its 3.3m square kilometers take in technology-laden business parks, cities home to teeming millions, ancient vistas containing some of history's greatest cultural artifacts, and the harsh-yet-majestic heights of the Himalayas.

It's an astonishing place of extraordinary complexity. And for enterprise customers wanting business broadband, its characteristics create some thorny challenges.

Because while this \$3.4tn economy is a unified democracy – the world's largest – at ground level it behaves more like a collection of communities, each with its own customs and practices. In physical trade, it can cost more to send one cargo container across India than it does to get that same container to the other side of the world, due to multiple internal checks and levies. And while parts of big cities enjoy blistering fiber optic internet, vast areas are without cabled infrastructure, with some even lacking mobile.

What matters above all: effective business broadband in India means understanding local culture. Everything from community values to geographic conditions, government structures, and societal norms. And not one local culture – but many. Let's see what challenges the vast nation poses for the global enterprise ... and how the right strategy can address them.

India: a cultural jigsaw for broadband to put together

Like so many of the world's regions, India isn't a single culture. Based on language, ethnic, and geographic roots, it's arguably a patchwork of over hundred distinct, as different from each other as Sweden and Greece. This isn't a weakness – it's a source of strength.

The sheer size of its population (1.4bn) gives India a diversity of talent found in few other places. While 100m are subsistence farmers and agriculture occupies 42% of all workers, Bengaluru and Mumbai are both global software production hubs; the country is the world's back office, with 4.5m employed in BPO (Business Process Outsourcing) for foreign companies.

In its universities – and there are over 1,000 of them – over a third of students¹ choose a STEM (science, technology, engineering, math) subject, leading to over 3m technically literate graduates entering the workforce each year. Nationwide, 833m people enjoy internet access at some level; the BharatNet project aims for broadband access in all 250,000 village council areas or “gram panchayats”, and the National Digital Communications Policy sees broadband as a strong enabling factor in the country's economic development.

In major cities, people enjoy high-speed broadband both at home and at work, with 50-100MBps common at home and 1GBps+ available for businesses. The city also has extensive 5G coverage, and is home to many datacenters and cloud resources. But cities aren't the whole story. Everything from land titles to weather conditions affects how quickly new capacity can be added, and a major bottleneck is simply how long even a straightforward project can take.

68 In summary: India's connectivity is growing at scale, with the government firmly in support – but in a country of such size and complexity, there's a lot left to do. Let's list the biggest issues.

The paperwork and the planet

It takes a lot of effort to stitch together 1.4bn people into a nation – so India runs on red tape, with a great deal of paperwork between your first exploratory and a completed project. But it's not just the form-filling that lengthens your schedule – the Earth itself wants to slow you down, next.



Challenge 1: Ongoing approvals and the “license Raj”

The first hurdle for many businesses needing connectivity in India is the need to be a legally recognized entity – even if you have no permanent office there. That's not a problem for enterprise-scale ventures with an established site address for their operations. But for smaller organizations based elsewhere, or MSPs (Managed Services Providers) needing to offer connectivity to their clients, it can be a stumbling block right at the outset.

But registering a legal identity is just the start. There's a long list of documents to be signed and stamped, with Letters of Undertaking and Authorization (LOUs and LOAs) common. When installing equipment of any kind – including, of course, laying fiber – a site survey must be completed and signed off, frequently by multiple stakeholders, with appropriate fees charged at every stage. And there's a different set of documents for each region within India, so if you're building out multiple sites, expect the administrative burden to rise in proportion with your number of rollouts. Don't expect your authorizations from Karnataka (which includes Bengaluru) to carry weight in Maharashtra (home to Mumbai).



Such piles of paperwork are common in every business sector in India; they're simply part of Indian life, jokingly referred to as the “license Raj” by locals. And there's no avoiding them. So, first rule of going your own way in the subcontinent: be ready for the red tape.



Challenge 2: Extended timetables for new connections

However digital the world gets, paperwork is part of doing business everywhere, so India's no special case. But a second challenge for your broadband connectivity is the need to schedule government inspections and certifications – relying on a limited number of people with a long list of jobs.

Every new business connection needing new infrastructure requires a feasibility check, which must be put on the calendar some time ahead; a site survey will come next, with further signatures needed before anyone can press the On switch. And it's not just government making the decisions, either. India's long tradition of dialog and engagement means a new site of any size must be improved by the community, not just local officials – which often means holding town halls and get-togethers over extended periods. Everything takes longer than you expect (although, we've seen exceptions).



Another factor isn't manmade: India's climate. The monsoon season lasts from May to September, and by mid-July most of the country experiences daily downpours. Which is great for the food supply – the monsoon is critical to Indian agriculture – but anything involving heavy earthworks, like laying fiber, is impossible.

And it's not just new buildouts that suffer; maintenance and repair are delayed too, so a cable cut or equipment failure can mean months of downtime. These problems can't be eliminated – but can be managed.

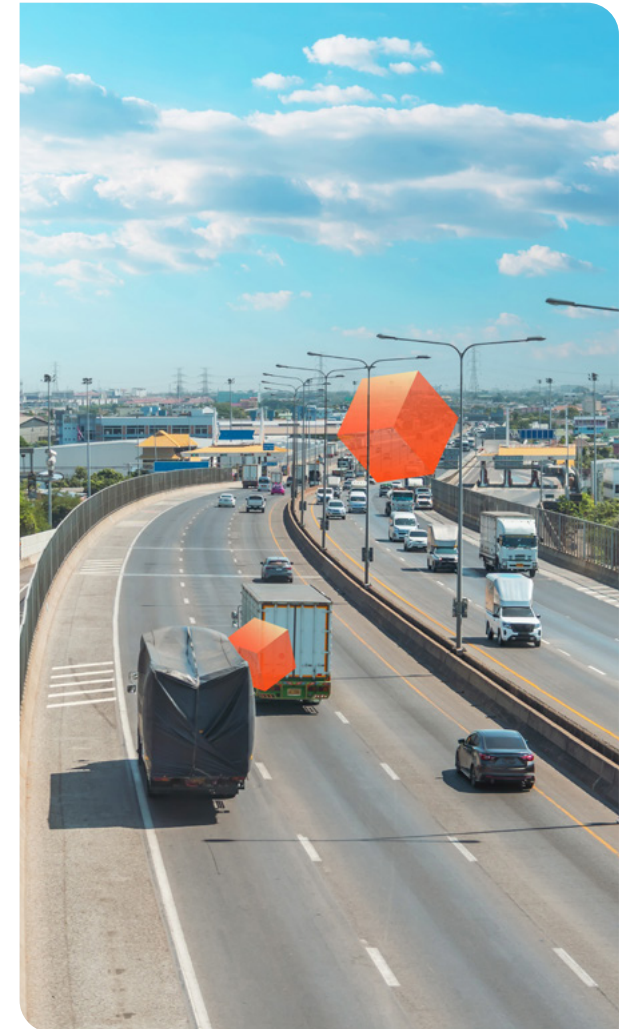


Challenge 3: Extreme locality among broadband providers

The buzzphrase is “Think global, act local” – and Indian Internet Service Providers are experts in the latter. There are a few national and regional ISPs – large players include the national telecom operators and some state-owned enterprises, like BSNL, Reliance, Bharti Airtel, and Vodafone – but in the main, business setting up in India (particularly if you’re a foreign company) will need to choose between smaller-scale providers.

And these local ISPs are often very local. Thanks to government incentives that make it practical to serve populations of just a few hundred people, it’s normal to see ISPs covering a single small town or village with no customers outside it. Remote access in such areas tends to be wireless, due to a lack of fiber in the ground. And the bandwidth available is often contended, shared between businesses and consumers. This means SLAs aren’t the five-nines your IT Director might be looking for.

All this makes relationships important – knowing your ISP’s capabilities, the realistic level of service guarantees, the real barriers ISPs face in offering consistently smooth service. The good news: with the right shared understandings, great connectivity is still possible.





Challenge 4: Pricing and procurement problems

As with any fast-growing market, working out a fair price for your broadband services can be a headache. Pricing is not consistent across India – as you'd expect, given the variation in population density and terrain – and some services included in a package elsewhere in the world, like hardware routers, are extras.

The pricing problem increases as you expand from first-tier cities like Delhi, Kolkata, and Chennai into Tier-2 and Tier-3 areas. This doesn't mean rural – many in Tier-2 are large and industrialized, like Jaipur and Lucknow with over 3m citizens each – but in general, the further you move from Tier-1 cities, the more problems you'll have finding fiber in the ground. A huge number of private individuals and small businesses connect solely through the mobile networks with no SLAs available.

As always, service is there if you search – but differences in pricing can be extreme. Which makes it hard for procurement teams to work out what represents a good deal ... and what doesn't.



Challenge 5: barriers in upgrading existing infrastructure

One joke goes that India is not a “developing nation”, but a highly developed nation that underwent a period of downtime. From its trains to its telephone networks, sleek modern technology runs side-by-side with older infrastructure, some of it in place for a century. Old telegraph wires from colonial times remain in

use between train stations, even as the citizens inside access 5G networks.

Aside from cost issues, the reason for this is simple: older infrastructure occupies rights-of-way and real estate in which many parties have interests, and the contracts that govern those rights go back decades. Newer infrastructure has different needs, which must be negotiated with the same patchwork of overlapping jurisdictions and ownership rights. So laying fiber alongside old copper cabling under existing contractual conditions (a common buildout method in North America and Europe) is a lot harder in India.

All this means the upgrade pathway to latest-generation equipment isn't straightforward, complicated again by the impossibility of laying fiber in monsoon season. As always, do-it-yourself won't be a valid approach for most international businesses.

These are the issues. Let's look next at how GNX solves them.

Connectivity in India

That's India: beautiful and packed with potential, but diverse and complex. Fortunately, GNX has broad and deep experience of this broad and deep nation – and we're ready to help you build your business out from the tip of Tamil Nadu to the heights of the Himalayas. GNX provides connectivity solutions for over 200 major names in nearly 200 countries and territories, and we see regional challenges as opportunities to apply our skills. Here's how we solve them.

Creative thinking that solves your problems

Finding the right mix of solutions is key. Despite the difficulties, India's economy is growing fast, and its connectivity providers are building out new infrastructure all the time. At GNX we make sure we know what's available and how services can be joined to give you the best outcomes. Some providers limit themselves to existing cable and cellular networks – but connectivity isn't limited to what's already there.

Perhaps a microwave antenna joining your offices Point-to-Point could leapfrog a long lead time your company can't afford. Or a private connection between two buildings could be the missing link that gets service guarantees to an acceptable standard. Let us show you.





Local knowledge that unlocks hidden advantages

The ideal solution isn't always obvious. Which is why we take advantage of our local ISPs' market expertise to find the solutions that make most sense in each location – turning a feature of Indian ISPs into an advantage. One size does not fit all. So we'll design our solution district by district, city by city, and across borders, using what works best for each situation and use case, each piece shaped to fit.

Imagine local knowledge that can find 30% savings on a "fixed" price. Economies of scale that give you more buying power with a major telco. And SLAs that give above-average performance on shared infrastructure. All available when you see both the Big Picture and the detail within it, ready to be optimized at every node.

Regional relationships that smooth your rollouts

Operating in India's 28 states can take a lot more than 28 contracts. Even more problematic considering the range of SLAs from best-effort to 99%+, even if SLAs are available at all. It's a procurement and management nightmare. But what if you could replace those never-ending decisions with a single contract that covers your entire project?


That's what GNX brings to the party, thanks to working relationships with thousands of Internet Service Providers and experts worldwide. By working with GNX, we can guarantee a simplified process – plus, we're 100% carrier-neutral and solution-agnostic. Meaning, we don't play favorites or push one technology over another. It's about giving you the connectivity you need, under one agreement.

A record-time rollout thanks to strong relationships

When a customer, a leading company in the Chemical industry with sites in India, asked us to deploy a fiber connection within a tight 5-working day timeline, we knew it was time to roll up our sleeves. Deadlines were non-negotiable. The company, operating 24/7 on a single internet connection, was experiencing bandwidth capacity issues (not including downtime risks due to a single point of failure).

To make things even more challenging: a 4km fiber installation needed to be built – meaning, paperwork and permits were required to proceed. But we do love challenges.

By leveraging our strong network of ISPs and relationships with the construction company, we tackled the construction requirements head-on. As usual, GNX's provisioning team monitored every step of the way and efficiently managed all the necessary paperwork to secure permits and deployments on time.

 **The result?** We installed, tested, and turned up the connection within the 5-working day window; a satisfied customer (and a proud team).

Challenge

A 4km

fiber installation for a secondary line – to be delivered in five business days.

The GNX Solution

- Engagement with local ISPs to resolve paperwork and construction work
- GNX project management

Result

In 5 days,

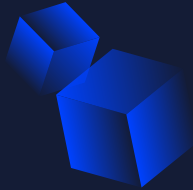
the connection was installed, tested, and turned up for increased capacity and failover.

The connected way



Global internet access

Our core offer is internet connectivity. Working with over 1,500 ISPs, MSPs, and telcos worldwide – wired and wireless – GNX brings you business broadband, Dedicated Internet Access, and mobile internet in 190+ countries, all under a single contract. Turning complexity into simplicity.



Point-to-point

Wherever you go, network coverage has gaps – and Point-to-Point is how you join them up. From private fiber in the ground to microwave connections in the air, a dedicated link between two sites often offers great bandwidth and the best possible SLA at a competitive cost. That's why we do it at GNX.



Cloud fabric

It's not just how you connect; it's what you connect. Services like SD-WAN and cloud applications keep your business data secure and smooth – completing your connectivity landscape. Private to public to hybrid, GNX can help put the Big Picture together.

GNX+

How GNX brings it together



The cherry on top is GNX+, our automated and carrier-neutral platform that lets you compare different connectivity services from thousands of providers. Much like browsing different travel deals when planning a trip, we'll show you all the options and information available – technologies, speeds, prices, and more.

And at all times, GNX+ gives you a clear view of your entire network setup, with management, monitoring, and support functions at your fingertips, making the complex world of connectivity as it should be: straightforward and simple.



Get in touch

Based in Amsterdam, GNX is a carrier-neutral, solution-agnostic connectivity provider with established relationships with over 1,500 ISPs worldwide. We offer creative solutions to business broadband in all the world's regions, making use of both global perspective and local expertise. Make this the year you join our growing roster of over 200 enterprise customers.

Learn more at gnx.net

GNX. Straightforward Connectivity.

Europe +31 30 227 3500
Americas +1 212 321 0764
gnx.net/contact

The GNX logo is displayed in a bold, orange, sans-serif font. The letters are thick and blocky, with the 'G' and 'N' being particularly prominent. The 'X' is composed of two intersecting strokes, also in the same bold style. The logo is positioned in the bottom right corner of the slide.