# Thriving in a Disruptive World: The Power of Hyperconnected Ecosystems

PERSPECTIVES FROM TECHNOLOGY LEADERS

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# Introduction:
# Keeping Pace with Changing Ecosystems

For over a dozen years, companies across all industries and geographies have aggressively invested in digitalization initiatives. Despite the progress, many organizations continue to experience disappointing results. Their technology investments are not keeping pace with the continuously evolving challenges faced by today's businesses and their ecosystems: volatile market conditions, dynamic customer demands, escalating security threats, and changing regulations.

What will it take to evolve digital transformation strategies to meet new and urgent needs? Frost & Sullivan and Tata Communications talked to dozens of C-level executives in a range of companies and industries around the globe to understand their challenges and successes as they leverage technology to drive business growth.

A clear observation is that successful companies rely on highly integrated communications, collaboration, and infrastructure technologies to facilitate stakeholder interactions. **Hyperconnected ecosystems** seamlessly and securely connect all people, systems, and processes essential to the business.

In this vBook, we explore the hyperconnected ecosystem from the perspective of C-level executives.

# Business Priorities:
# What it Takes to Survive and Thrive

In an uncertain economy in which many businesses have seen sales slip and funding dry up or become more costly, it makes sense that our respondents are laser-focused on strategic priorities that enable them to drive revenue and cut costs—safely and securely.

Their observations are echoed by a recent Frost & Sullivan global survey of over 2,000 IT decision-makers representing various industries and company sizes. Survey respondents said their top business objectives included ensuring compliance and security, improving customer experience, growing revenue, improving operational efficiency, and introducing business agility.

## Business Objectives Cited as "Crucial" or "Very Important"

| | | |
|---|---|---|
| 1. | Ensuring compliance and security of data and apps. | **79%** |
| 2. | Improving customer experience and satisfaction. | **71%** |
| 3. | Growing revenue. | **70%** |
| 4. | Improving operational efficiencies. | **67%** |
| 5. | Rapidly responding to market demand and disruption. | **65%** |

*Source: 2022 Frost & Sullivan IT Decision-maker surveys*

# Defining a Hyperconnected Ecosystem

Yesterday's way of tackling digital transformation—implementing technology solutions for each ecosystem in isolation—is ineffective in supporting the fast pace, complex business models, and evolving interrelationships of today's businesses. Successful companies are building their technology strategies around **hyperconnected ecosystems**.

As defined by Tata Communications, a hyperconnected ecosystem is characterized by real-time, anywhere, always-on connectivity and seamless collaboration leveraging data and intelligence across all interconnections.

Building a hyperconnected ecosystem is about **enablement**: enabling customers to procure the products and services they want easily; enabling employees to do their jobs; enabling partners to work with you in a frictionless manner; and enabling myriad data points to be translated into valuable insights.

Equally important, each hyperconnected ecosystem enables business agility among stakeholders. It lays the foundation for the changes that will occur as new technologies emerge, new markets are explored, and new work models are implemented.
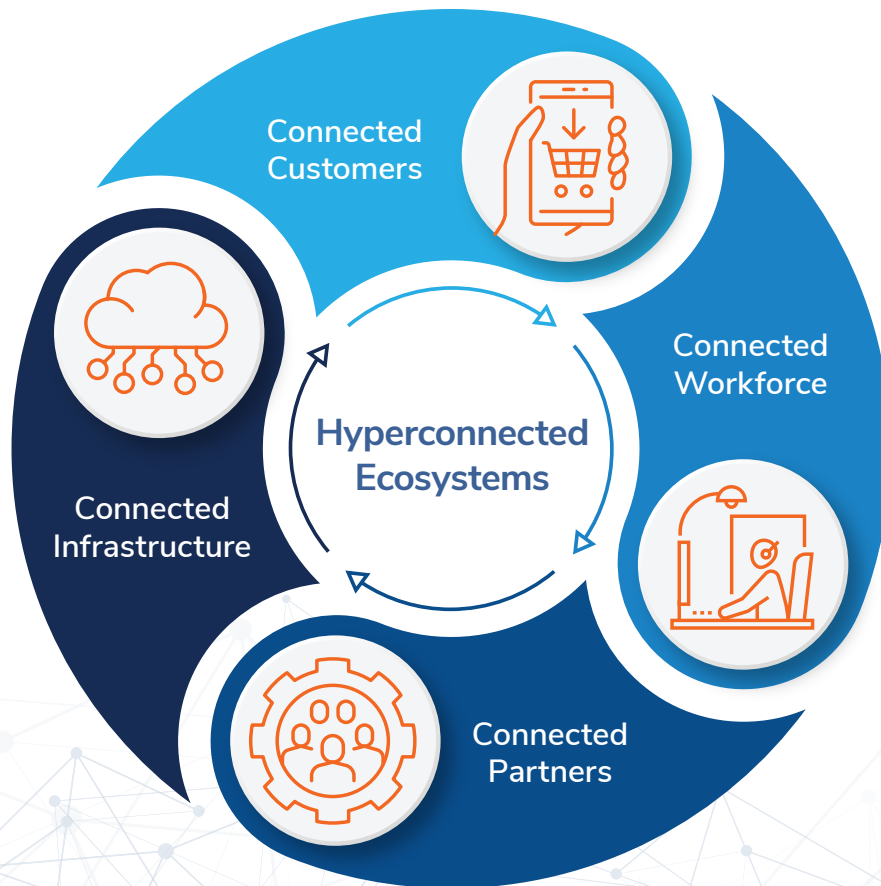
## HYPERCONNECTED ECOSYSTEMS:

### UNLOCKING SUCCESS FOR A LEADING EUROPEAN BANK
*CTO, European Bank*

**BUSINESS CHALLENGE:** Security and compliance are paramount in the highly regulated financial services industry. As noted by the CTO of this European bank, *"In our industry, security is the driving force of business. People entrust us with their assets; not just the customers but all the stakeholders."*

At the same time, new business models and increasing competition required the bank to evolve traditional ways of serving customers. The bank prioritized delivering a seamless customer experience across physical branches and digital channels (web, mobile). For the CTO, this meant establishing a flexible and secure IT environment.

**SOLUTION:** The bank developed a comprehensive digital strategy designed to meet customer and employee needs while ensuring the security of customer data. This involved integrating existing systems and technology with new digital offerings, investing in the necessary infrastructure and technology, implementing data-driven insights and personalization of services, developing customer-centric marketing and engagement campaigns, creating an omnichannel experience, and ensuring customer satisfaction and loyalty. In addition, the bank installed an SD-WAN solution in almost 1,800 branches in 2021. This assured secure, reliable access to multiple applications on the digital platform.

**BENEFIT:** By hyperconnecting employee and customer ecosystems, the bank enhanced productivity and improved customer satisfaction. Specifically, the CTO said, *"Our current digital collaboration system helps to enhance the productivity and efficiency of our employees by providing them with tools to easily communicate and collaborate with each other, share documents and resources, and access data and information quickly and securely. This improves customer satisfaction and introduces process efficiencies."*

**THE LAST WORD:**

> *This type of digital transformation helps us to sustain ourselves in this competitive and huge industry."*
>
> *—CTO, European Bank*

# Connected Customers

The customer is king. Businesses in every industry must earn customer loyalty every day, which requires welcoming customers to engage whenever and however they choose. As part of their digital transformation, many firms are investing in technology platforms that support an omnichannel approach; for example, allowing customers to connect via the platform's voice, chat, video, or email options. An effective omnichannel strategy requires solutions that seamlessly operate across digital and physical environments. It is about leveraging data sources across the entire ecosystem to build a 360-degree view of the customer; a view that captures every engagement and utilizes artificial intelligence to anticipate and address customer needs and to improve the customer experience.

> According to a 2023 Frost & Sullivan survey of **750 customer experience executives,** **89%** of organizations worldwide have an **omnichannel strategy.**

However, getting from strategy to reality can be a challenge. Most organizations utilize multiple fragmented systems that require custom integration to interoperate. While disparate customer databases for account management, ordering, shipping, service, and marketing are difficult to pool and maintain, it is even more difficult to incorporate unstructured customer data from sources such as audio logs and social media. Furthermore, physical (in-person) and digital interactions are generally supported by entirely unrelated systems.

The solution is a hyperconnected customer ecosystem—a 360-degree view of customers and prospects enabled by a flexible and seamless intelligent customer experience stack.

## DRIVING EFFICIENCY AND CUSTOMER SATISFACTION:

## THE POWER OF CONNECTED CUSTOMERS
*CTO, Global Delivery and Logistics Firm*

**BUSINESS CHALLENGE:** As the delivery arm for eCommerce, retail, wholesale, and manufacturing firms, this global delivery and logistics firm is responsible for ensuring goods end up in the hands of its customers' customers on time. To better serve clients, the company implemented an omnichannel approach. However, the CTO said, "*Initially our physical infrastructure was not optimized to facilitate all the channels. Although we worked through physical and digital channels, the level of integration was lacking. For instance, if any goods got lost in transit, there was no way to verify where it went wrong.*" Furthermore, monitoring each transaction consistently across channels was difficult. .

**SOLUTION:** The company digitalized workflows to support 24/7 customer communications. This included a sophisticated CRM platform to connect with customers and collect data. Through the CRM, the company stores customer data, tracks interactions, and analyzes customer behavior.

The CTO reports, "*During the pandemic, our customers and delivery agents faced problems, so we implemented a proprietary system that turns data into powerful insights and visualizations to build more resilient supply chains. The system processes scan data, transportation data, and sensor data, and utilizes intelligent cloud and AI services to combine and translate these data sets into robust insights, delivered via user-friendly dashboards for customers and our agents.*"

**BENEFIT:** The connected customer solution enabled the business to support its business customers and its end customers. Specific benefits reported by the company include cost control, operation optimization, improvement of customer experience, supply chain management, and end-to-end communication.

**THE LAST WORD:**

> *Due to digital channels we can connect to our customers 24/7. We can address their issues and the trouble tickets get resolved in no time, which increases customer loyalty and satisfaction.*"

–*CTO, Global Delivery and Logistics Firm*

# Connected Workforce

The pandemic forever disrupted workplace operations in critical ways. Organizations accelerated their adoption of cloud applications and remote tools to enable many workers to do their jobs from the safety of their own homes. For their part, digitally savvy workers felt comfortable deploying their choice of apps and using any available devices to do their jobs, whether or not those choices were safe, secure, or sanctioned by corporate IT.

Today, most corporations have accepted that the future workplace will be hybrid. In a 2023 Frost & Sullivan global survey, IT decision-makers indicated that, on average, 35% of their desk-based employees work from home at least one day per week. By 2025, they expect that percentage to increase to 44% of their desk workers.

This places the burden on employers to find ways to retain valuable workers, maximize productivity, and foster innovation while protecting corporate assets. The answer is to implement digital strategies that empower employees to do their jobs in a secure environment.

Empowerment begins with enabling employees to communicate, share resources, and collaborate on projects regardless of physical location. Geographically dispersed workgroups may comprise employees working from their homes one or more days per week, those based at various headquarters and branch locations, and those at partner or customer locations. This requires enterprises to deploy UC tools that allow employees to connect to one another from home or the office and to the shared data and resources they need to do their jobs. Optimally, the tools will also provide visibility into productivity metrics.

However, incompatible systems deployed in different offices or workgroups often hinder companies from achieving their vision. They may also find that individual workgroups choose their preferred communications methods, including low-cost or free consumer-grade chat apps. Finally, IT organizations may face pushback from company leaders who are not confident that their investments in collaboration tools will yield appropriate ROI.

> For forward-looking firms, **the solution is a hyperconnected workforce supported by an intelligent, flexible, cloud-based unified communications and collaboration platform**.

Such an approach will support the new hybrid workforce, enabling real-time connections among employees working at home, at multiple offices, on the road, or in the field. It will also facilitate shared projects and knowledge, fostering efficiency and innovation.

## "FROM FACTORIES TO HOMES:

## INTEGRATING A CONNECTED WORKFORCE IN AUTOMOTIVE MANUFACTURING
*CDO, Automotive Manufacturer*

**BUSINESS CHALLENGE:** Like many industrial firms, this global automotive manufacturer has spent much of the last decade shifting from physical to digital workstreams. The pandemic accelerated the pace of digitalization and exacerbated challenges as the company sought to maintain engagement, productivity, and a seamless experience among its diverse international workforce, including frontline employees in factories and knowledge workers at their homes. A key challenge was securing home offices, according to the CDO. *"When we switched from working in the office to working from home, we had to take extra measures to ensure that we could address the security challenges that arise from people working on their own devices— laptops and desktops—and with their own network and connectivity in their house."*

**SOLUTION:** The company implemented cloud-based systems, including ERP, CRM, and HR, that are easily accessible to all employees. Most impressive is an AI-enabled mobile application that integrates several systems for employees and utilizes natural language recognition to respond to voice requests. These requests range from pricing and product information for salespeople to personal leave balances for any employee.

The company also utilized its powerful communications and collaboration platform to educate employees on new technologies, roles, and processes. The CDO reports, *"We maintain an open line of communication with our employees so that whenever something new occurs, we remind them that there are facilities available for their use. All of this involves constant communication with the employees, which is important today in order to improve technology adoption and usage. This way, the true benefit of technology is derived not only by the employees but also by the organization."*

**BENEFIT:** The new system allows employees to work together more easily, solving business challenges faster and driving innovation. The company has also realized cost and productivity benefits resulting from reduced travel between offices.

**THE LAST WORD:**

> *[Employees] can communicate that much more easily using these technology platforms, and then they feel a greater sense of belonging to the organization, so employee engagement goes up. If employee engagement increases, then productivity goes up and retention levels are much better."*

—CDO, Automotive Manufacturer

# Connected Partners

No company is an island, and businesses depend on a variety of partners to create and bring their products and services to market. Many industries rely on sales and service partners to reach customers, and physical goods firms often rely on suppliers and distributors to keep the supply chain moving. Due to the increasing complexity of digitalization, technology firms competing in one forum will partner to bring a total, best-of-breed solution to clients.

To support their partner ecosystems, businesses need an efficient way to share information among partners while complying with diverse and changing data-handling requirements, securing data from breach or loss, and protecting valuable intellection property.

However, participants in a partner ecosystem often have their own systems, which may require manual integrations to share data. Companies may also be concerned about security of shared data, or, more specifically, that their partners may not have a common focus on security. End-to-end compliance may also be difficult to achieve when data traverses systems.

In one common technology services market business scenario, multiple technology providers must partner to deliver a complete solution to a client. The partners may include one or more software providers who deliver the needed platforms and applications, a cloud service provider for hosting the solution and associated data, a security provider and compliance officer to ensure data and applications are protected and compliant, an industry-knowledgeable expert to direct the initiative, and a services provider to design, deliver, and/or manage the solution. Each provider must have access to account information about the client and the solution configuration, as well as visibility into project management and calendaring tools to ensure the end-to-end project is completed satisfactorily.

**The solution can be a connected partner ecosystem.** This is one or more flexible platforms that leverage APIs and connectors to enable systems to communicate and share (appropriate) data while protecting proprietary data and access. For those that work in physical goods, this means connecting supply chain systems to automate and streamline processes.

For service industries, like financial services or information technology, the complex partner ecosystems may involve sharing valuable customer and product data, as well as collaborating with competitors, compliance auditors, and third-party sales and delivery channels. Blockchain-based solutions can ensure all partners hold up their end of the agreement and ensure the integrity of shared information.

## NAVIGATING COMPLIANCE COMPLEXITY:

## HARNESSING THE POWER OF A CONNECTED PARTNER ECOSYSTEM
*COO, Global Financial Services Firm*

**BUSINESS CHALLENGE:** This global financial firm has a complex business model. Its insurance and investment products are sold to individuals and institutions via various channels, including independent agents and financial advisors, large banks and investment firms, and competitive financial organizations. The COO described the challenges to ensure compliance: *"We have multiple different vendors for supply chain. Each type of vendor or partner within the supply chain has a different code of conduct. Managing compliance policies can be a challenging task because we are spread worldwide and have to consider the regulations and policies of each region. We have to ensure the security and confidentiality of all data that we collect."*

**SOLUTION:** The complexity of the ecosystem and the different compliance requirements governing interactions led this firm to implement a flexible, multifaceted solution in which all vendors are connected to the collaboration system (although in different ways). According to the COO, *"Our supply chain is a key part of the company's financial infrastructure and keeping it well organized and healthy is essential for us, which is why we have a proper system for each partner."* The solution supports seamless connectivity between the firm and its partners and among the partners, who may need to collaborate with one another to deliver services to end clients. It also simplifies visibility and management across partners.

**BENEFITS:** Key benefits of the connected partner ecosystem solution include faster product delivery, better control, and simpler vendor management. Because partners can connect and collaborate with one another—sharing data and resources related to customer service and product delivery—products are delivered more quickly. The COO also cited greater control over vendors: *"Our connectivity solution allows for the monitoring of activities across the vendors. This can be important for quality control or to ensure that the vendors are meeting their obligations. Additionally, connectivity can allow for the automation of tasks, such as billing or shipping, which can save time and money."*

**THE LAST WORD:**

*Initially we used to connect with our partners one-to-one, but now we have a system for them [to communicate with one another] as well. We should have done it a long time ago, but right now we are on the right path."*

—COO, *Global Financial Services Firm*

# Connected Infrastructure

An organization's hyperconnected ecosystems require a strong technology foundation, one that is designed to enable seamless and secure resource sharing, data transfer, communications, and collaboration among relevant people and machines.

As organizations pursue their digital transformation initiatives, they require a network, compute, and storage infrastructure that is:
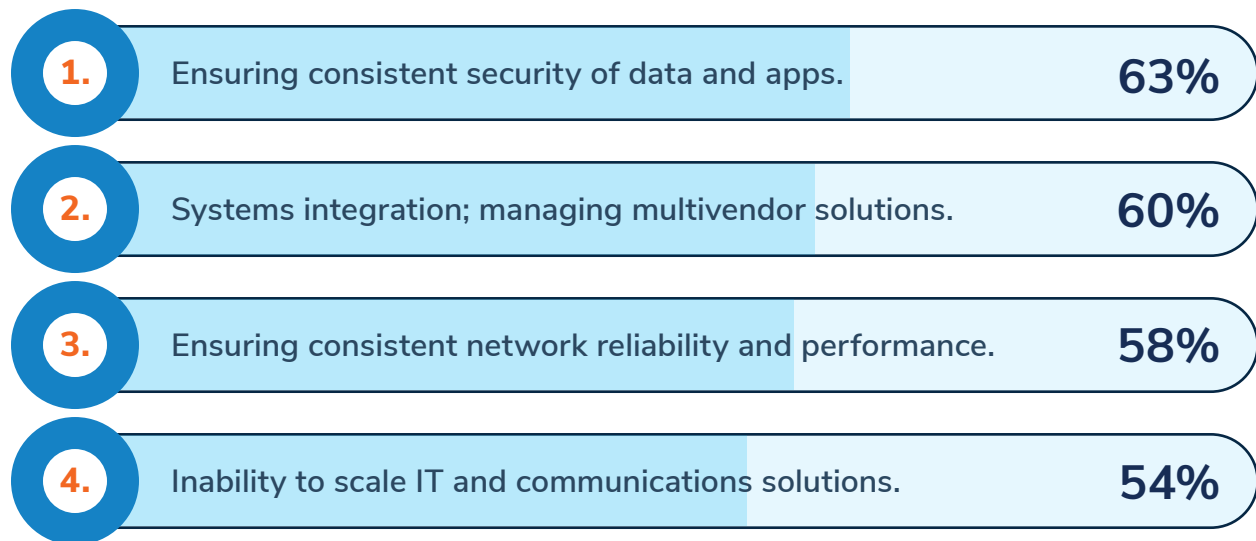
▶ Flexible, to enable new technologies (such as IoT, AI, and 5G wireless connectivity)

▶ Resilient, to support always-on business

▶ Ubiquitous, to make it easily accessible to users and devices across geographies

▶ High capacity, to handle increasing volumes of data and usage, with no performance degradation

▶ Scalable, to account for dynamic business

However, as many organizations have discovered, achieving transformation is difficult. Security is a top challenge, according to a 2022 Frost & Sullivan global survey of IT decision-makers, especially when ensuring consistent app and data security. Manually integrating fragmented, multivendor systems creates a time and cost burden, both at implementation and throughout the life cycle. Consistent network performance is essential for stakeholders to access apps and data, but not always assured in a geographically dispersed environment. Manual scaling can result in a loss of employee productivity and customer goodwill.

### Challenges Hindering Digital Transformation Success

| | Challenge | |
|---|---|---|
| 1. | Ensuring consistent security of data and apps. | 63% |
| 2. | Systems integration; managing multivendor solutions. | 60% |
| 3. | Ensuring consistent network reliability and performance. | 58% |
| 4. | Inability to scale IT and communications solutions. | 54% |

*Source: Frost & Sullivan 2022 ITDM Survey*

To mitigate the challenges, organizations require flexible, hyperconnected infrastructure, in which intelligence is increasingly abstracted from hardware; virtual solutions are preferred over physical systems, and infrastructure scales with the needs of the business. Such solutions support hybrid environments, including edge-to-cloud networking. Process automation, often shaped by artificial intelligence, eliminates many manual tasks, while simplifying management and monitoring, and ensuring greater cost-efficiencies.

## FUTURE-PROOFING DIGITALIZATION

## THE SUCCESS STORY OF A CDO IN HEALTH & BEAUTY
*CDO, Global Health and Beauty*

**BUSINESS CHALLENGE:** This highly distributed firm, with offices in 130 countries, has a complex stakeholder ecosystem comprising supply chain partners, retail partners, vendors, employees, and customers. The company set out on the difficult task of digitalizing its workflowst to support collaboration, communication, and resource-sharing among many critical stakeholders. According to the CDO, *"The COVID-19 pandemic highlighted the need for [our business] to shift towards a digital-first strategy. [We had to] make the necessary adjustments to our communication infrastructure in order to ensure that employees, customers, and partners can connect, communicate, and collaborate from anywhere and across any device."*

**SOLUTION:** The company implemented a software-defined, virtualized, and intelligent infrastructure as the foundation of a hyperconnected ecosystem. As noted by the CDO, *"This type of infrastructure is designed to be agile, reliable, and future-proofed to integrate emerging technologies, such as AI, IoT, Web 3.0, and Private 5G. An intelligent infrastructure combines the power of software-defined and virtualized infrastructure with AI and machine learning capabilities to provide greater visibility, control, and automation of the network. AI and machine learning can help identify and remedy network inefficiencies and security threats, automate service delivery and workload management, and facilitate predictive analytics."*

**BENEFITS:** By minimizing physical hardware through virtualization, the company reduced costs and improved scalability and operational efficiency. Furthermore, by implementing 5G networking, the company improved application performance and connectivity to customers. The CDO reported, *"5G is the next frontier in mobile connectivity. Because of 5G, we can reduce latency, get faster data speeds, and deliver 24x7x365 connectivity. It holds immense promise for businesses and individuals, empowering them to accomplish work at a faster pace."*

**THE LAST WORD:**

*A software-defined, virtualized, and intelligent infrastructure is essential for creating a hyperconnected ecosystem that is both reliable and future-proofed. This type of infrastructure enables faster response times to meet changing demands and deliver cost savings, improved security, and scalability."*

—*CDO, Health and Beauty Firm*

# Choosing the Right Partner for Your Hyperconnected Ecosystems

If the greatest challenge to implementing an effective digital strategy is complexity, how can enterprises expect to build the hyperconnected ecosystems they need? For an increasing number of organizations, the answer is to partner with an expert.

> According to the Frost & Sullivan survey, **72% of organizations engaged with at least one external partner** to assist with at least some aspects of their digital transformation.

Their engagements generally related to specific and siloed areas of their digital transformation initiatives: cloud, security, network, and edge.

However, individual partners handling each area of your digitalization may keep you from achieving your goals. Instead, your company needs a partner to help you build hyperconnectivity for all your critical ecosystems. Look for a partner that offers:

▶ A **diverse solutions portfolio** comprising wireline and wireless connectivity services, cloud/edge computing, UCC, CX management, IoT, big data and AI, and other advanced technology solutions

▶ **Best-of-breed solutions and deep expertise** in implementing the technologies of high priority to an organization

▶ **Broad geographical reach and knowledge** of unique regional technology preferences and regulatory requirements

▶ A **track record of innovation and market leadership**, ensuring that you will continue to benefit from the latest technologies

▶ **Responsive customer service and support capabilities**, including the same collaboration tools you want to include in your own organization

Technology can help drive your business success, but only if you harness it to support your key priorities. Building hyperconnected ecosystems provides the broad foundation your organization needs to ensure your customers, employees, partners, and systems are working in harmony.

# Why Tata Communications

As a hyperconnected ecosystem is heavily technology-dependent, businesses need the right infrastructure, applications, processes, and skills to enable connection and collaboration among all ecosystem stakeholders.

CIOs like you need a digital ecosystem strategy that can help realize the full potential of new technologies and enable new partnerships and agile operating models. This transformation also makes it imperative for CIOs to work with a broad ecosystem comprising technology vendors and expert partners as they build solutions across disparate technology areas—such as connectivity, cloud, collaboration, IoT, and security—which leads to an incredible level of complexity. In addition to this complexity, challenges like legacy processes and systems, organizational silos, skill shortages, and changing customer expectations keep CIOs up at night.

They need a partner to simplify and manage this complexity and provide end-to-end solutions. Tata Communications combines platforms, infrastructure, and expertise to provide a digital fabric on which you can build compelling employee and customer experiences.

This digital fabric includes platforms for connected customers and connected solutions powered by secure and robust cloud, Edge, and network infrastructure. It is secure by design and has a visibility and management layer (TCX) that ensures you can seamlessly build and manage your digital applications.

Tata's digital fabric is built on a network that connects to over 35% of the world's Internet routes, which connects businesses to 80% of the world's cloud giants and 4 out of 5 mobile subscribers. Its customers rely on the company's expertise and its industry-leading NPS of 84 is a testament to that.

*—Tata Communications*

# About Tata Communications

A part of the Tata Group, Tata Communications (NSE: TATACOMM; BSE: 500483) is a global digital ecosystem enabler powering today's fast-growing digital economy in more than 190 countries and territories. Leading with trust, it enables digital transformation of enterprises globally with collaboration and connected solutions, core and next gen connectivity, cloud hosting and security solutions and media services. 300 of the Fortune 500 companies are its customers and the company connects businesses to 80% of the world's cloud giants.

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