

# Powering Data & Broadband Networks

ANNUAL REPORT 2016-17

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## Forward-looking statements

*In this Annual Report, we have disclosed forward-looking information to enable investors to comprehend our prospects and take investment decisions. This report and other statements - written and oral – that we periodically make contain forward-looking statements that set out anticipated results based on the management's plans and assumptions. We have tried wherever possible to identify such statements by using words such as 'anticipate', 'estimate', 'expects', 'projects', 'intends', 'plans', 'believes', and words of similar substance in connection with any discussion of future performance. We cannot guarantee that*

*these forward-looking statements will be realised, although we believe we have been prudent in assumptions. The achievements of results are subject to risks, uncertainties, and even inaccurate assumptions. Should known or unknown risks or uncertainties materialise, or should underlying assumptions prove inaccurate, actual results could vary materially from those anticipated, estimated, or projected. Readers should keep this in mind. We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise.*

## ABOUT US

Headquartered in Bengaluru, Tejas Networks is an optical and data networking products company with global operations. Our products are used to build high-speed transmission networks that carry voice, data and video traffic from fixed line, mobile and broadband networks over optical fiber. Driven by India's increasing data traffic and rising global optical capital expenditure, Tejas is among India's largest optical networking products companies while competing against global peers.

At Tejas, we design, develop and sell high-performance and cost-competitive products to telecommunications service providers, internet service providers, utilities, defence and government entities in over 60 countries across the world.

Our products utilise a programmable software-defined hardware architecture with a common software codebase that delivers an app-like ease of development and upgrades of new features and technology standards. Ever since inception, we have steadily invested in research and development to grow through multiple technology cycles. Today, we are a

TL9000 and ISO9001 certified company; along with a DSIR approved R&D facility.

Rising smartphone penetration, higher speed networking technologies and accelerating adoption of cloud services by enterprises is pushing a massive increase in data traffic worldwide. At Tejas, we are well-positioned to capitalise on the projected growth in optical capital expenditure in India as well as globally, supported by our dynamic team and world-class products.

**In a world where socio-economic progress is largely defined by technology adoption, the extent of data consumption and the speed of broadband networks, we are powering these promises of the future.**

# 33.7%

Y-o-Y Revenue Growth (net of taxes and component sales)

# 34.4%

Y-o-Y Gross Profit Growth

# 54.8%

Y-o-Y EBITDA Growth

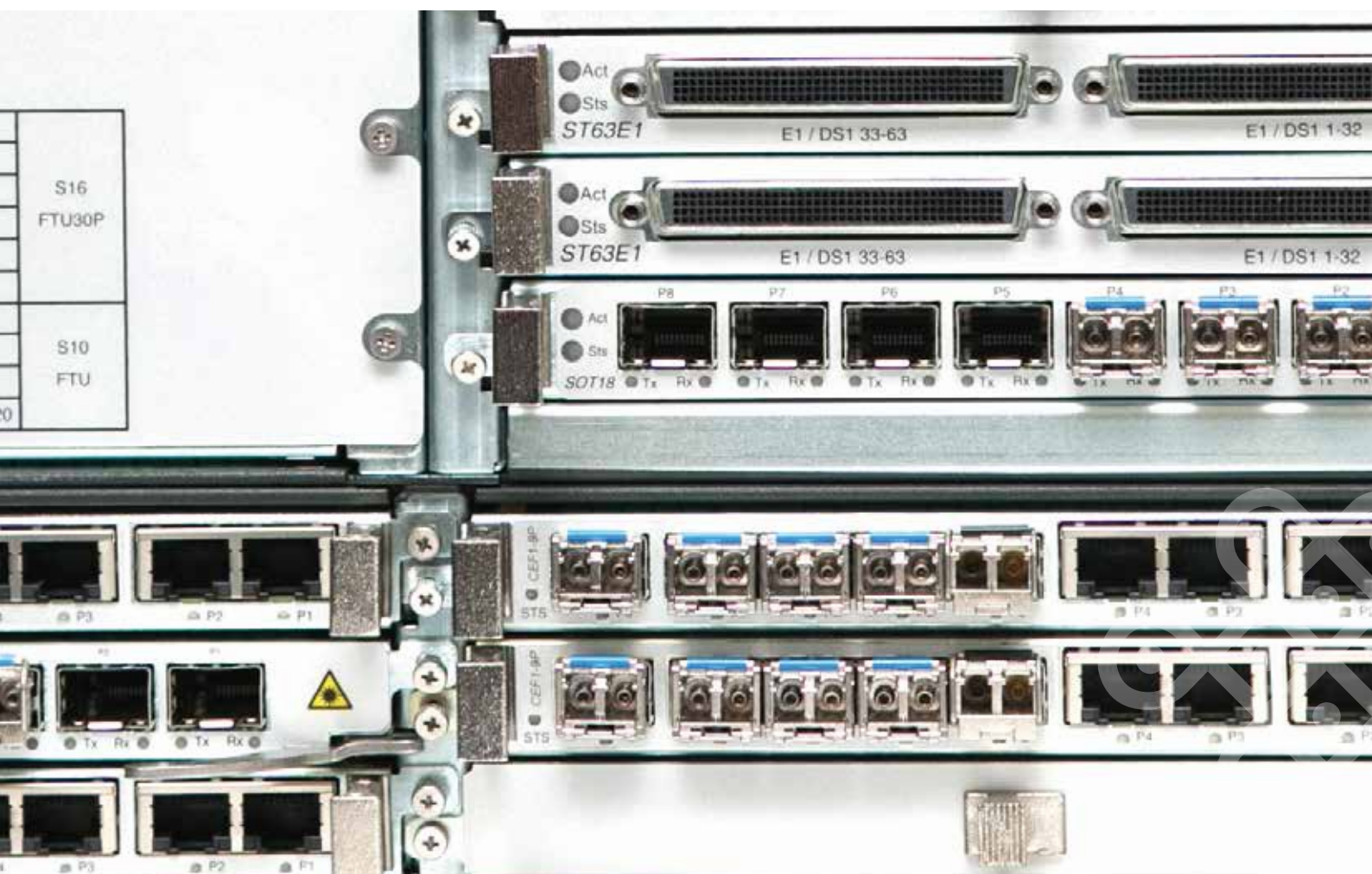
# 121.6%

Y-o-Y PAT Growth

Y-o-Y: Growth in 2016-17 over 2015-16



# Our Products and Solutions



With the exponential increase in data traffic, our customers are in the process of modernising their networks, so that they can transport more bits, but at a lower cost per bit. Our products are used to build high-speed transmission networks that carry voice, data and video traffic from fixed line, mobile and broadband networks over optical fiber.

## Software defined hardware that is flexibly configurable and enabling future-ready products

We strive to design future-ready products by using programmable software-defined hardware architecture that enables easy and rapid adaptation to technology changes, evolving standards and new customer requirements.

Our hardware is modular and our software-defined architecture allows us to remotely upgrade our hardware with new capabilities and features. This enables our customers to adopt a 'pay as-you-grow' approach (i.e., purchase our products/services incrementally as needed) while adopting

new services, and also enables them to extend the life of installed systems through regular feature upgrades without having to invest in new hardware purchases. Our scalable, re-programmable and re-usable products allow reduction in total cost of ownership for our customers and improve the overall efficiencies of their network and operations.

Our software-defined hardware architecture also enables us to deploy the same products across multiple hardware platforms in multiple geographies by making country - specific adaptations, thus allowing us to save costs and realize economies of scale.

Further, we outsource most of our manufacturing to reputed electronics manufacturing services companies. This allows us to stay asset-light and enables us to scale-up production without requiring a corresponding increase in capital expenditure towards our own manufacturing operations. Our India-based operations allow us to design, develop, manufacture and sell high-performance and cost-competitive products in India and globally.



## OUR CURRENT PORTFOLIO

Our current optical transmission products are used in the following parts of a communication network:

- **Access:** The outer perimeter of a telecommunications network, which connects to the end consumers
- **Metro:** Networks that aggregate and distribute traffic collected from access networks within a large city or region
- **Long-haul:** Networks that interconnect metro networks using high bandwidth transmission

## OUR EDGE

- Leadership in the fast-growing Indian optical equipment market
- Technology-leading, yet cost-competitive products.
- Well-positioned to capitalise on expected industry growth in emerging and India-like markets internationally
- Track record and culture of innovation, leading to product and technology leadership
- Software defined hardware that is flexibly configurable and enabling future-ready products
- Cost and capital efficient asset light business model
- Long-standing customer relationships with strong repeat business

- Strong professionally managed team with significant industry experience

## APPLICATIONS

- 2G/3G/4G/5G Mobile and Fixed-line Backhaul
- Enterprise Leased Line Services
- Wholesale Bandwidth Services
- Metro/Regional/National Optical Backbones
- Next-generation Utility Networks
- Data Center Inter-connects (DCI)

## OUR CERTIFICATIONS

- TL9000 and ISO9001:2008 certified
- MEF CE1.0 and CE2.0 certifications
- CE/cTUVus/FCC/IEC/ICES standards
- RoHS and WEEE compliant

## MARKET REACH

We sell our products predominantly through a combination of direct sales to communication service providers as well as by leveraging our strong relationships with leading global optical vendors and integrated solution providers as original equipment manufacturers (OEMs). We have a history of high customer retention. Our strategic OEM relationships enable us to gain access to their customers, especially in North America and Europe, and grow our international businesses in these geographies.

## Global Top 10

Ranked among top-10 suppliers in the global optical aggregation segment

## 333 Patents

Patent applications filed (203 filings in India, 89 filings in the United States and 6 filings in Europe)

## 2<sup>nd</sup> Largest

Largest optical networking products company in India while competing against global peers

## 60+ Countries

Global Presence

## 250+ Customers

Long-standing relationships

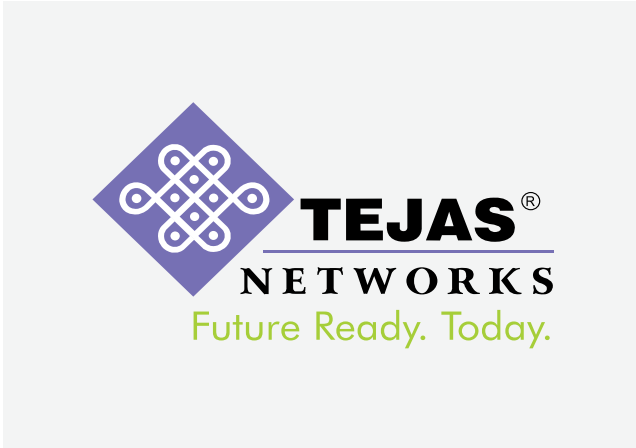
## 600+ Team

World-class talent



# Milestones and Achievements

## 2000 – 2003



**> ₹40 crore**

Cumulative Revenue

**8**

Patents Filed

- Incorporated in Bangalore. Founding team included Sanjay Nayak (CEO & MD), Dr. Kumar Sivarajan (CTO) and Arnob Roy (President Optical).
- Procured order from Tata Power and successfully helped build India's first high-speed Metro DWDM network in Mumbai
- Launched our first product - TJ100 STM-1 Multiplexer product
- Obtained interface approval from Telecom Engineering Center (TEC) for TJ100 product
- Team Size - 100+

## 2004 – 2007



**> ₹400 crore**

Cumulative Revenue

**17**

Patents Filed

- Procured large order from Railtel Corporation of India for a Pan-India optical MSPP network covering 400+ stations
- Registered first customer wins at Airtel, Tata Communications, Power Grid (PGCIL), Oil India (OIL), Gas Authority of India (GAIL)
- Launched a range of STM-1, STM-4 and STM-16 Multiservice Provisioning Platforms (MSPP) designed to meet international standards
- Obtained Carrier Ethernet CE1.0 certification from Metro Ethernet Forum (MEF)
- Executed our first global OEM agreement with Nortel Networks
- Received award for Excellence in R&D from DSIR, Government of India
- Won "Deloitte Fast 50 India", "Red Herring 100 Asia" and "Red Herring 100 Global" awards
- Team Size: 500+



## 2008 – 2012



**> ₹2,500 crore**

Cumulative Revenue

**159**

Patents Filed

- Won and Executed large BSNL order for Optical MADM equipment
- Acquired ISO 9001:2008 and TL9000-H certification
- Signed OEM contracts with two leading international vendors to supply our MSPP and CPO products
- Commercial deployment of our products in Tier-I 3G/ BWA networks in India such as Airtel, Aircel, BSNL
- Two-time winner of the prestigious CSIR Diamond Jubilee Technology Award from the Honorable Prime Minister of India
- Featured as a Harvard Business School case study
- Recognized as a Top-5 domestic patent filer in information technology by India Patent Office
- Received several prestigious innovation awards from NASSCOM, Aegis Graham Bell, Economic Times and Telecom Center of Excellence (TCOE)

## 2013 – 2017



**> ₹5,000 crore**

Cumulative Revenue

**333**

Patents Filed

- Selected as a PTN supplier for two major 4G networks in India
- Deployed one of Asia's first and largest PTN networks for mobile backhaul at Sacofa
- Selected as a supplier for WIOCC, Africa's carrier of carriers owned by 14 major African telcos
- Selected as an optical equipment supplier for Bangladesh's National Broadband Network
- Received Carrier Ethernet CE2.0 certification from MEF for TJ1400, TJ1400P, TJ1600
- Procured international orders for 100G from telecom operators in Africa and South East Asia
- Recognised as a Two Star Export House by the Ministry of Commerce
- Won the TDB/DST National Technology Award for indigenous technology from the Honorable President of India
- State Export Excellence Award (Electronics and Communications category) from the Government of Karnataka
- Secured order for the supply, installation, commissioning and maintenance of GPON equipment for the Pan-India BharatNet project (Phase-I)
- Received the Most Innovative Product Award from IESA
- Received the Top Indian MSME for Patent & Commercialization from DIPP, Government of India and CII
- Team Size: 600+



# Chairman's Message



**“Tejas is at the intersection of key Government of India initiatives such as “Make in India”, “Digital India” and “Start-up India”.”**

## Dear Shareholders,

Your company just completed a successful IPO in India raising ₹ 450 crore in primary issuance. The issue received strong institutional interest from Indian as well as International investors. This is a major milestone for a company, which started in the year 2000 with a meagre capital, but a very ambitious vision- to build a world-class technology product company from India. The success of Tejas signifies the emergence of innovative, new-generation deep-technology product companies from India, which are driven by first-generation entrepreneurs. It is also a significant milestone for the start-up ecosystem in India, since Tejas has set an example for early investors to get significant financial returns, thereby improving the overall investment climate in the country for startups.

Tejas Networks offers state-of-the-art products for the high-growth segment of the telecom market, which is for creating high-speed data networks to cater to the ever-increasing demand for bandwidth. Factors like the evolution of new high-speed internet technologies, increased consumption of video content and the proliferation of affordable smartphones are primarily driving this increasing bandwidth demand. Besides, growth in enterprise data services, cloud-based applications and data centers further increase the data consumption across global markets. These trends require telecom service providers and government entities to make significant capital expenditure in building high-capacity optical transmission networks, that are built using products designed and manufactured by Tejas.

India too is going through a digital transformation and the Government of India has a flagship program of “Digital India”. Government is making significant investments in increasing the country's broadband infrastructure through projects such as BharatNet, which will provide us significant growth opportunities. In addition, policies like “Make in India” and “Preferential Market Access” (PMA) will benefit us, since they are targeted towards encouraging indigenous technology and use of domestically manufactured products like ours. Besides, with the advent of high-speed networks and increased use of data, private telecom operators in India need to invest in optical networks to upgrade their network capacities to stay competitive. To retain and grow their market, it is imperative for telecommunication service providers to ensure that they connect a majority of their cell tower on optical fiber, so that they can cater to the ever-increasing demand for data and bandwidth.

Internationally, in emerging markets, the state of digital infrastructure, economic affordability, trends of data growth and need for technology are similar to India. We are taking our success in India into “India-like” markets in South-East Asia, Africa and Latin America. Customers in these countries





highly value our experience in India and we have seen a strong demand for our products and solutions in these countries. In addition, we are able to leverage our strong OEM partners in USA, who sell our products to their customers across the world.

At Tejas, we are well poised to capitalise on these rising industry trends. Our end-to-end portfolio of optical networking products for access, metro and long-haul networks help us leverage the expected growth in optical networking capex-both in India as well as internationally. Today, we are ranked as the sixth largest supplier in the global optical aggregation segment and we are growing faster than the market.

Over the years, we have built a reputation for delivering technologically advanced and high-quality products that are backed by our reliable customer service team. We are the only India-based optical transmission systems company that is TL9000 certified. We have consistently achieved field uptime exceeding 99.999% since 2008. We share long-term relationships with all our customers, with 88% of our business during last year coming from existing customers and most of our top customers have been with us for more than a decade.

### TECHNOLOGY LEADERSHIP

Our products are used to build communication networks that carry voice, data and video traffic from fixed line, mobile and broadband networks over optical fibre. They are based on global technology standards, which enable telecommunications networks that are used to provide mobile, internet and broadband services, primarily over optical fibre.

Our products utilise a programmable, software-defined hardware architecture, which allows us to easily customize our products to meet new standards as well as market-specific requirements of features and performance. This has enabled us to deploy our products worldwide - in India, the emerging markets as well as the developed markets. Our optical networking products can be flexibly configured as CPO, PTN and DWDM products as per the communications service provider's needs and traffic requirements in their networks. We also offer broadband access products, based on GPON technology for Fiber-to-the-home (FTTX) applications. We are also investing in new wireless broadband access products, based on 4G/LTE technology and enterprise ethernet switches. Besides, we provide intelligent network management software for easy deployment of large-scale networks.

Developing optical and data networking products requires large number of skilled R&D professionals across multiple domains, deep technology knowledge and significant up-front investments as well as long gestation period. This creates very high entry barriers for a new competitor.

### WAY AHEAD

Tejas lies right at the intersection of the key Government of India initiatives such as "Make in India", "Digital India" and "Start-up India". Our innovative product and talent helps us to be invaluable partner to the government's initiative to create a "New India".

Going forward, we aim to invest in expanding our product portfolio and to increase our sales and marketing presence, especially in international markets. We expect our performance to gain momentum in India as well internationally, as the demand for higher-speed data networks continues to increase.

We are grateful to our customers, employees, shareholders, suppliers and bankers—all of whom are critical to our success. We see significant opportunities for growth over the next several years and we look forward to the next stage of our journey together.

We thank the government of various countries where we have our business operations. We also thank the Government of India, particularly the Ministry and Department of Electronics and Information technology, the Ministry of Commerce, the Ministry of Finance, the Ministry of Corporate affairs, the Customs and Excise departments, the Income Tax department, Reserve bank of India, Karnataka State Government, and other Government agencies for their support and look forward for their continued support in future.

Bengaluru,  
August 26, 2017

Warm regards,  
**Balakrishnan V.**  
Chairman



# CEO and MD's Statement



**“We saw broad-based growth across our customers in India as well as internationally. Telecom service providers globally are seeing an exponential increase in data traffic on their networks”**

## Dear Shareholders,

FY 2016-17 was another year of solid growth and strong financial performance for your Company. We completed a fifth consecutive year of growth and made significant progress on our business and financial performance across all key parameters. Here is a glimpse:

- Consolidated revenue (net of taxes and component sales) growth of 33.7%
- EBITDA growth of 54.8%
- Cash flow from operations (excluding the effect of changes in Bills discounting of Trade receivables) grew by 101.6%

Our financial performance improved as is evident from the following ratios:

- Operating expenses reduced from 19.3% to 16.3% of revenues
- Free cash flow generation (excluding the effect of changes in Bills discounting of Trade receivables) of ₹ 119.92 crore
- ROCE of 17.44%
- Debt/Equity ratio 0.56
- Reduction in DSO by 46 days to 157 (previous year 203)

We saw broad-based growth across our customers in India as well as internationally. Telecom service providers globally are seeing an exponential increase in data traffic on their networks, due to increased proliferation of high-speed 4G and broadband networks, growing use of streaming video, mobile apps, ecommerce and other popular Internet services on affordable and powerful smartphones, tablets and home devices. The rapid acceleration in data traffic is driving the demand for an increased investment in optical networking products due to an increase in network fiberization and need for further capacity upgrades in existing fiber-optic networks.

**India:** There is a huge pent-up demand for optical transmission equipment in India and our India revenues during FY17 grew 25.7% y-o-y basis. Telecom service providers, especially the mobile operators, have historically under-invested in optical fiber transmission and instead relied more on the older technology of microwave radio transmission for their 2G/3G networks. In addition, Indian Government (like other Governments around the world) is investing in building a nationwide high-speed fibre optic network, especially to connect the rural areas. This broadband network (called Bharatnet) will serve as the backbone for all future government services, education, healthcare, public safety and other applications.

During FY17, the spending by Government establishments (BSNL, Railtel, BBNL and PGCIL) increased and our revenues from the Government accounts grew significantly. We also saw an increase in the procurement activity and we won many tenders, resulting in a strong backlog for FY18. We were selected as one of the key supplier of GPON equipment for Government of India's prestigious BharatNet project. We had continual business from private telecom service providers

