BUY

Tejas Networks

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Set to scale up; GoI focus is the key catalyst

Telecommunications ▸ Initiating Coverage ▸ **December 27, 2023**

TARGET PRICE (Rs): 1,050

Tejas Networks (Tejas), India's largest R&D-driven telecom equipment company, designs and manufactures wireline/wireless networking products. We expect Tejas to execute orders worth at least Rs292bn over FY24-28E, and generate revenue/EBITDA above Rs300bn/Rs60bn, respectively, led by the BSNL and BharatNet projects. We see revenue peaking in FY25 and settling at ~5x FY24 levels. Tejas is expected to benefit chiefly from: 1) GoI emphasis on domestic manufacturing and the PLI scheme; 2) large spends on BSNL, BharatNet and the Railways; 3) increasing demand in critical infra/India private sector; and 4) global move to replace Chinese telecom equipment. We initiate coverage on Tejas with a BUY recommendation and DCF-based TP of Rs1,050 (WAACC: 10.5%; terminal growth: 6%), implying 14.3x P/E (Dec-24E).

Tejas Networks: Financial Snapshot (Consolidated)

Y/E March (Rs mn)	FY22	FY23	FY24E	FY25E	FY26E
Revenue	5,506	9,196	21,390	1,03,192	69,664
EBITDA	(135)	140	1,574	22,575	14,590
Adj. PAT	43	(279)	814	16,013	13,765
Adj. EPS (Rs)	(6.0)	(2.5)	4.8	94.4	81.1
EBITDA margin (%)	(2.4)	1.5	7.4	21.9	20.9
EBITDA growth (%)	N/A	N/A	1,021.1	1,334.3	(35.4)
Adj. EPS growth (%)	N/A	N/A	N/A	1,867.4	(14.0)
RoE (%)	0.3	(1.1)	2.7	40.8	25.4
RoIC (%)	0.9	(5.5)	(0.5)	65.5	40.0
P/E (x)	2,094.6	(347.7)	178.3	9.1	10.5
EV/EBITDA (x)	(642.7)	653.1	93.5	5.8	8.0
P/B (x)	4.7	3.3	4.6	3.1	2.4
FCFF yield (%)	(1.6)	(12.2)	(2.5)	11.4	12.3

Source: Company, Emkay Research

Tejas set to execute orders worth at least Rs292bn over FY24-28E

Tejas has an order book of Rs92.7bn as of Q2FY24-end that includes: a) Rs74.9bn purchase order (PO) from TCS for BSNL's 4G rollout; b) Rs7bn PO for BSNL's MAAN project; c) Rs2.3bn backlog from international projects. Further, we see Tejas bagging some more POs in the next 2 years, including: i) an ITI PO for 23,633 4G sites of BSNL (~Rs23bn); ii) BSNL's 4G to 5G upgrade (~Rs7.5bn); iii) BSNL's pan-India 5G project (est. Rs90bn); iv) BharatNet-3 (est. Rs70bn); v) Railways upgradation of Kavach to LTE-R (est. Rs15bn). **Overall, we see Tejas executing orders worth at least Rs292bn over FY24-28E.** Revenue during FY24-28E could be higher, as our PO estimate excludes i) project AMCs and ii) run-rate revenue from India private & international projects.

Multiple growth levers to aid in scaling up; initiate with a BUY

We see Tejas scaling up, given that: i) GoI's spending plan for BSNL, BharatNet-3, Railways' Kavach upgradation, etc. is likely to furnish orders worth over Rs292bn; ii) India's private sector/critical infrastructure ramps up, with orders from Railtel, PGCIL, PowerTel, Gail, IOCL, etc; iii) international revenue gains pace, with the BSNL project being used as a reference and the US Rip & Replace program granting new opportunities; iv) Rs7.5bn investment commitment under the PLI scheme is likely to generate maximum incentive of Rs29.1bn in 5 years; v) the expanding product line, incl. wireless, would lead to TAM of ~USD87bn by CY28. Tejas is set to benefit from: a) cost-competitive R&D vs. peers, b) asset-light model with EMS partners, c) Saankhya Labs' acquisition for wireless solutions, d) CEO Anand Athrey's 35-year, US-based work experience likely to provide new connects; e) new reference opportunity from Tata Group companies (TCS, TCom); Tata Group's semiconductor foray could give an added boost. We think Tejas can generate ~Rs300bn/Rs60bn revenue/EBITDA during FY24-28E; revenue would peak at ~Rs100bn in FY25E and later settle at elevated levels (~5x vs. FY24 revenue). Per our DCF-based valuation (WACC: 10.5%; terminal growth: 6%), TP is Rs1,050/sh (23% upside), implying 14.3x P/E (Dec-24). We initiate coverage with a BUY.

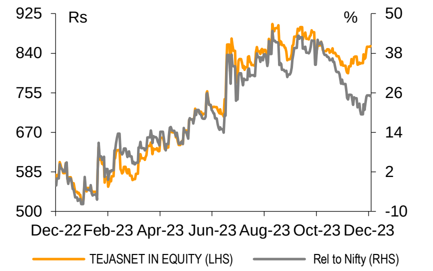
Target Price – 12M	Dec-24
Change in TP (%)	**NA**
Current Reco.	BUY
Previous Reco.	NA
Upside/(Downside) (%)	22.7
CMP (26-Dec-23) (Rs)	855.5

Stock Data	**Ticker**
52-week High (Rs)	940
52-week Low (Rs)	510
Shares outstanding (mn)	170.0
Market-cap (Rs bn)	145
Market-cap (USD mn)	1,748
Net-debt, FY24E (Rs mn)	2,050
ADTV-3M (mn shares)	-
ADTV-3M (Rs mn)	351.9
ADTV-3M (USD mn)	4.2
Free float (%)	-
Nifty-50	21,441
INR/USD	83.2
Shareholding, Sep-23	
Promoters (%)	55.9
FPIs/MFs (%)	11.1/4.0

Price Performance

(%)	**1M**	**3M**	**12M**
Absolute	5.2	1.9	52.6
Rel. to Nifty	(2.9)	(6.5)	26.7

1-Year share price trend (Rs)



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Investment Thesis: Revenue acceleration ahead

Tejas, India's largest R&D-driven telecom equipment company, designs and manufactures wireline and wireless telecom networking products, mainly focusing on metro and access products. **The company uses software-defined hardware as the fundamental building block of its products.** Tejas has always focused on R&D, while its manufacturing is handled by EMS partners. Founded in 2000, the company has been working on connectivity-related projects for India private, Indian government (BharatNet and Critical Infrastructure) as well as international clients.

Acceleration in revenue with more orders: We expect a significant acceleration in revenue from H2FY24 for Tejas, as the company is executing a large order book (Rs92.7bn backlog reported at the end of Q2FY24), led by Rs74.9bn order from TCS for BSNL's 4G implementation. Moreover, we see Tejas receiving orders from i) ITI PO for 23,633 4G sites of BSNL (est. Rs23bn); ii) BSNL 4G to 5G upgrade (est. Rs7.5bn); iii) BSNL's pan-India 5G project (est. Rs90bn); iv) BharatNet-3 (est. Rs70bn); and v) Railways upgradation of Kavach to LTE-R (est. Rs15bn). **Overall, we see Tejas executing orders worth at least Rs292bn in five years** (FY24-FY28, exhibit 1). Revenue over FY24-FY28E could be higher as the below estimates exclude i) AMC for the projects and ii) run rate revenue from India private and international projects. We see the company operating at a different scale from FY25, as it has made investments, added inventory, EMS partners, and employees (particularly in the R&D division), and it is ready to handle larger volumes.

Exhibit 1: Key POs expected to be executed in the next five years* by Tejas

Key POs to be executed in 5 years	(Rs bn)	Comments
BSNL 4G RAN equipment for >100,000 sites	**74.9**	PO received from TCS on August 15, 2023
Equipment for BSNL (4G/5G) – TCS	**1.1**	PO received from TCS on October 19, 2023
BSNL's MAAN	**7.0**	PO received on April 3, 2023
NSIL award to Saankhya	**1.0**	PO received on December 8, 2023
International backlog	**2.3**	As per the Q2FY24 company PPT
Key POs expected		
ITI PO for 23,633 4G sites of BSNL	**23.3**	Assuming 60% of Rs38.89bn APO awarded to ITI by BSNL
BSNL 4G to 5G upgrade – PO Awaited	**7.5**	Assumed to be 10% of the TCS PO for BSNL's 4G
BSNL Pan India 5G	**89.9**	PO assumed to be 20% higher vs. 4G PO from TCS
BharatNet	**70.0**	Assumed to be 5% of the Rs1.4trn budgeted by the government
Railways (upgradation of Kavach to LTE)	**15.0**	Assuming 5% of Rs300bn opportunity from Kavach and LTE-R
Total	**292.0**	

*Source: Company, Emkay Research; Note: * = Excludes AMC for the projects; also excludes run rate revenue from India private & international projects*

Tejas plans to expand its international business in 12-18 months. The company is seen as one of the trusted sources (and as China's alternative) and could benefit from the US Rip and Replace program, which has budgeted ~USD5bn for moving away from Chinese players like Huawei and ZTE. **Tejas' subsidiary, Saankhya Labs, already has its three radios certified and is selling to the USA.** Moreover, with international wins like FibreConnect in Italy, there is growing confidence among global telcos in the company's ability to design and execute complex, large-scale networks, from access to core. The execution of BSNL's 4G project will also act as a reference for other international projects. We also see the company exploring new geographies like Australia.

PLI scheme to bring in additional benefits: We see Tejas benefitting from the PLI scheme, as it builds up scale and executes order backlog. Tejas has committed to making an investment of Rs7.5bn over the scheme period under the Design-Linked PLI Scheme. The investment of Rs7.5bn can generate a maximum incentive of Rs29.1bn in five years for Tejas. According to our revenue estimates, we see Tejas receiving incentives worth ~Rs16bn in five years.

Exhibit 2: PLI incentive for Tejas Networks

(Rs bn)	FY23E	FY24E	FY25E	FY26E	FY27E	FY28E
Revenue	9.2	21.4	103.2	69.7	52.4	54.6
Incremental revenue (vs. FY20), eligible for the incentive	5.3	17.5	99.3	65.8	48.5	0.0
PLI incentive with a lag	**0.0**	**0.4**	**1.2**	**6.3**	**4.6**	**3.4**

Source: Emkay Research

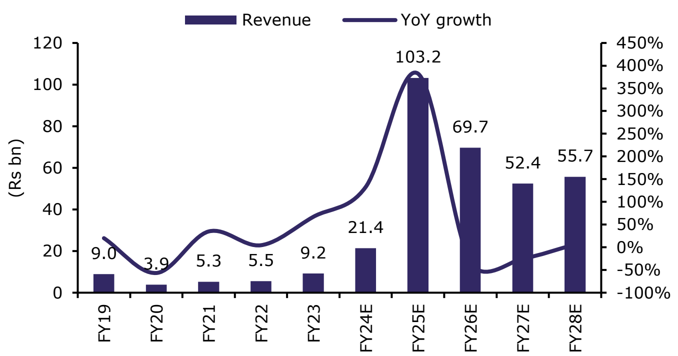
Expanding product line to increase TAM: The company's main focus earlier was on metro and access wireline products. The company has now significantly expanded its product portfolio beyond wireline to include wireless (4G/5G/SATCOM) products. Tejas is joining the handful of 4G/5G equipment suppliers, including Nokia, Ericsson, ZTE, Huawei, and Samsung. No major US companies are doing it, as it is a difficult technology to build using high-power radios. Tejas sees its overall TAM registering a 4.4% CAGR over CY22-28E to USD86.6bn.

Multiple levers at play: Tejas is also set to benefit from i) cost-competitive R&D vs. peers with lower employee cost in India, ii) asset-light model with manufacturing done by EMS partners, iii) Saankhya Labs' acquisition for wireless solutions, which gives access to new capabilities, iv) CEO Anand Athrey's 35 years of experience in the USA, which can help provide new connects and references for the company for international expansion, and v) synergies with Tata Group with new reference opportunity from TCS and TCom. Moreover, Tata Group's semiconductor foray could also provide an additional boost.

Financials to improve with increasing revenue: Tejas can generate ~Rs300bn in revenue over FY24-FY28E, with peak revenue of ~Rs100bn in FY25E. From FY26, we expect revenue to settle down at elevated levels, as Tejas executes BharatNet-3, BSNL's pan-India 5G, and Indian Railway projects, POs for which are yet to be awarded. We see margins improving as scale picks up and component shortage concerns recede, leading to a margin of ~20% over FY25-28, amid operating leverage benefits. **We expect Tejas to generate Rs61bn in EBITDA and Rs49bn in FCF over FY24E-28E.** We expect returns to improve for the company as Tejas gains scale. **We see RoE/ROCE increasing to 25%/35% by FY26E**, as revenue and profitability increase while the company maintains its asset-light structure, as the manufacturing is done by EMS partners.

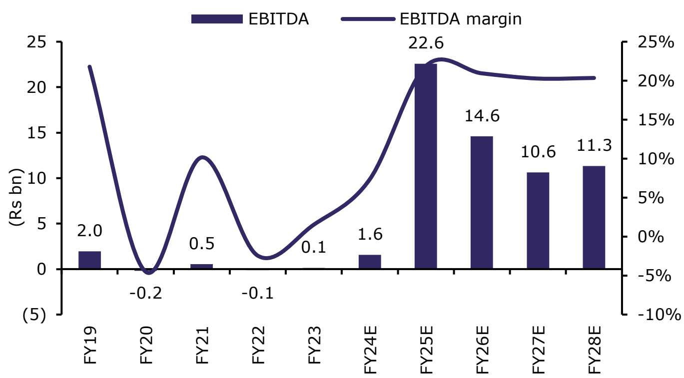
We use DCF valuation (WAACC 10.5%; Terminal growth rate 6%) to arrive at our TP of Rs1,050 (23% upside; implying 14.3x P/E for Dec-2024). We initiate coverage on Tejas with a BUY recommendation.

Exhibit 3: Tejas to generate ~Rs302bn in revenue…



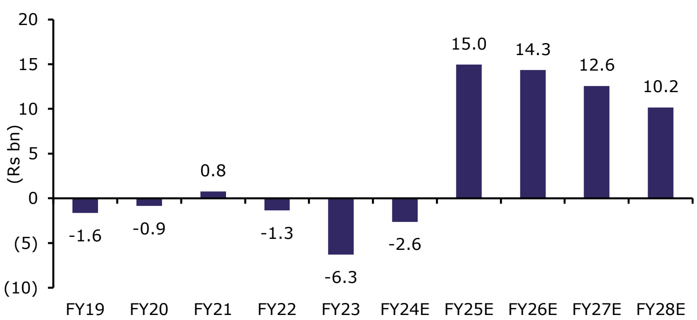
Source: Company, Emkay Research

Exhibit 4: …and ~Rs61bn in EBITDA, over FY24-28E



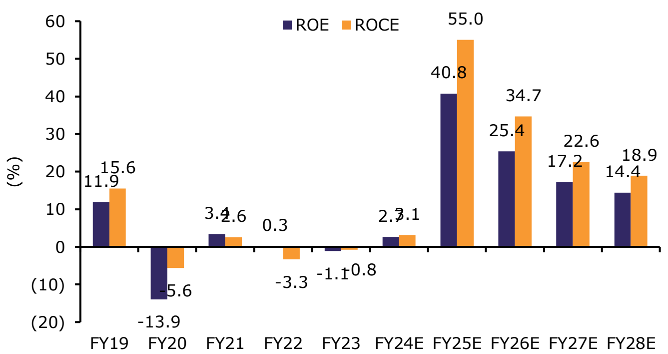
Source: Company, Emkay Research

Exhibit 5: Tejas to register ~Rs50bn in FCF over FY24-28E



Source: Company, Emkay Research

Exhibit 6: Returns to improve to above 14%



Source: Company, Emkay Research

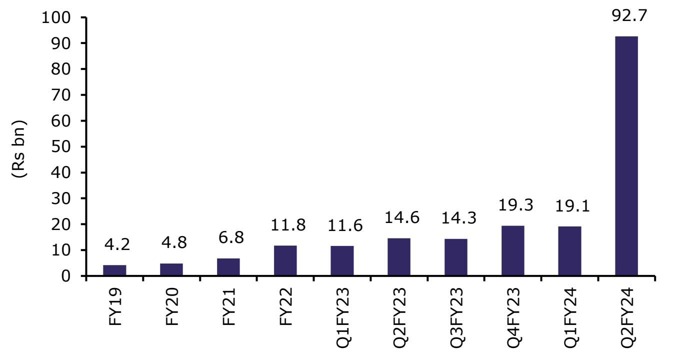
Order book providing revenue visibility

The company's order book stood at Rs92.7bn at the end of Q2FY24, providing revenue visibility. The backlog includes Rs90.3bn of India orders and Rs2.3bn of international orders.

- **BSNL's Rs6.96bn order for MAAN:** In Apr-23, Tejas won against top-tier global router vendors and received a large order of **Rs6.96bn from BSNL**, for a pan-India router network (MPLS-IP based Access and Aggregation Network or MAAN). The company will supply, install, and commission over 13,000 of its TJ1400 series of next-generation access and aggregation routers for realizing a converged multi-service packet network, being rolled out on a nationwide basis. The company expects initial supplies and deployment for BSNL to take 12-18 months (by Sept-24).
- **BSNL's order for 4G/5G RAN equipment:** TCS-led consortium and state-run telecom gear maker, ITI, have jointly bagged 4G network advance purchase orders (APO) of over Rs190bn from BSNL. TCS has bagged an APO of ~Rs155bn and ITI has received an APO of ~Rs38.9bn. Tejas would be supplying all of the radio access network (RAN) equipment, the radio, and the baseband units for all the sites. Around 1,00,000 4G sites have to be deployed for BSNL. In Aug-23, Tejas won a **Rs74.92bn order** from TCS to supply 4G/5G RAN equipment for BSNL's pan-India network (for ~100,000 sites). Tejas received a mobilization advance of Rs7.5bn from TCS to execute this contract in Q2FY24. The equipment will be delivered by Tejas during CY23 and CY24. Support and maintenance services will be offered for a period of nine years after the warranty period.

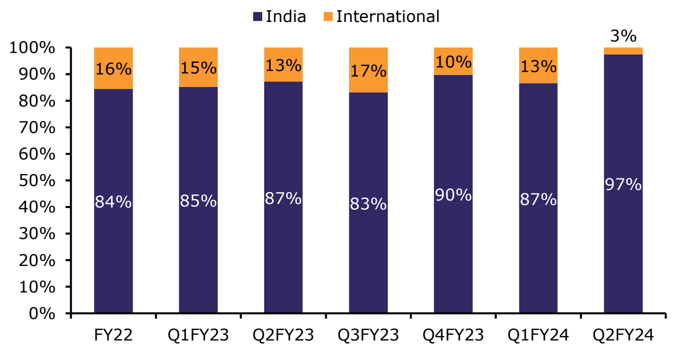
  ITI will also be supplying equipment for ~23,633 sites, which is also going to be executed with Tejas equipment, besides all the sites by TCS. ITI, like TCS, will source equipment from Tejas and supply it. PO from TCS is based on circles and deliveries to every circle, so Tejas' management is expecting more POs to come in circle-wise. Tejas began the shipping of 4G wireless equipment to BSNL in Q2.
- In Oct-23, Tejas received another PO from TCS for an amount of Rs1.08bn for the supply of equipment for BSNL's pan-India 4G/5G network.

Exhibit 7: Order book has been increasing for Tejas



Source: Company, Emkay Research

Exhibit 8: Most of the backlog is pertaining to India



Source: Company, Emkay Research

Pan-India 5G rollout order from BSNL could provide revenue visibility beyond FY25

Tejas expects increased demand for its products by BSNL for i) 5G upgrade of the 4G sites and ii) 5G for the newer bands and multiple different radios. Tejas plans to launch a wide range of 5G products over the next year. **The current backlog of Rs92bn does not include this 5G upgrade order of BSNL.** PO for the 5G upgrade will be a separate PO, but it would be part of the BSNL tender.

Pan-India 5G tender could be as big as 5G: BSNL is also likely to come out with a tender for the pan-India rollout of 5G across circles, once the 4G rollout implementation is done. The 5G rollout is expected to be in the mid-band, where performance is much higher. This tender could potentially be as big as the 4G tender. This will provide additional revenue visibility beyond FY25 for Tejas, once the 4G/5G upgrade part of the current tender is executed.

Moreover, customers are waiting for the shipments to happen to backfill the order book. New orders are expected to increase with the execution of the existing orders.

BharatNet-3 likely to add to revenue

In Aug-23, the Union Cabinet approved an allotment of Rs1.4trn for the next phase of BharatNet to make 5G network available to remote areas in India. BharatNet-3 plans to reach 0.64mn villages within the next two and a half years from the current 0.194mn connected villages under the Bharat Net Udyami Yojana. Last-mile connectivity will be provided by Bharat Broadband Network Limited (BBNL), an arm of state-owned BSNL, in partnership with village-level entrepreneur (VLE). Customer premise equipment and additional fiber required for connecting homes will be provided by BBNL, and local entrepreneurs have been given the task of maintaining the network. The project is being rolled on a 50% revenue-sharing basis between BBNL and VLE, and the monthly broadband plan price starts from Rs399.

Currently, technical discussion is going on w.r.t. the architecture of the network, specification of the product, and technology to be adopted. There has been extensive discussions with all vendors regarding the product specifications to be employed. The implementation will be through BSNL and BBNL. **Out of the total budget of Rs1.4trn, ~10% can be for equipment that can be supplied by Tejas.**

Tejas' GPON solution has been deployed in BharatNet earlier. Tejas' products are helping 70% of the requirements of BharatNet projects already deployed.

Exhibit 9: Existing expenditure budgeted by the government

Expenditure head	2021-22	2022-23	2023-24	Change
(Rs bn)	Actual	RE	BE	YoY
BharatNet	75.1	15.0	50.0	233%
Network for the Defence Services	30.7	19.6	21.6	10%
PLI for Telecom	0.0	0.0	8.0	N/A

Source: Emkay Research

Railway Ministry plans tender to upgrade anti-collision tech, Kavach, to LTE

The Ministry of Railways is planning to upgrade its indigenous anti-collision system, Kavach, to 4G/5G (LTE-based). Kavach is an indigenously developed Automatic Train Protection (ATP) system. Kavach's electronic system activates the train's braking system automatically if the driver fails to do so and prevents the collision between two locomotives equipped with functional Kavach systems. The tenders for the next-gen Kavach will be rolled out from May to June next year, as per media reports, while the tender to upgrade the existing Kavach technology to LTE is expected to be floated soon.

Kavach is already operating on more than 1,465 route kilometers (rkm), with work ongoing for over 3,000 rkm. In addition, surveys are being conducted for 6,000 rkm.

Meanwhile, there has been a significant push to enable 5G-based operations in Indian Railways, which would lead to an upgrade in several outdated methods, particularly in communication. Indian Railways was allotted a 5 MHz spectrum in the 700 MHz band in June 2021, with a commitment to invest Rs250bn for the development of long-term evolution over the following five years. (*Link*)

Railways and C-Dot earlier signed MoU in Apr-22 to use LTE-R, a next-gen communications network (dedicated for railway services), enabling high-speed wireless voice and data communications inside trains, from train to the ground and from train to train. The network will also enable 5G use cases in Indian Railways, in line with the Make in India policy. **The upgrade of Kavach to 4G/5G is likely to add to the company's order book.**

India private and critical infrastructure also to ramp up

Tejas is engaging more with private telcos as 5G implementation progresses, resulting in more bandwidth in backhaul networks. With India private, Tejas is playing an important role in the wireline space (access and metro) and residential and enterprise broadband.

In critical infrastructure, Tejas' products are extensively used in all parts of the network (long haul and access). Some companies using Tejas' products include Railtel, Indian Railways, PGCIL, PowerTel, Gail, and IOCL.

It has to be noted that India private and international projects are more of a run-rate business, and deals generally do not show up in the order book. **This order book reported by the company does not reflect the full potential revenue of the company.**

Increasing international focus to aid growth

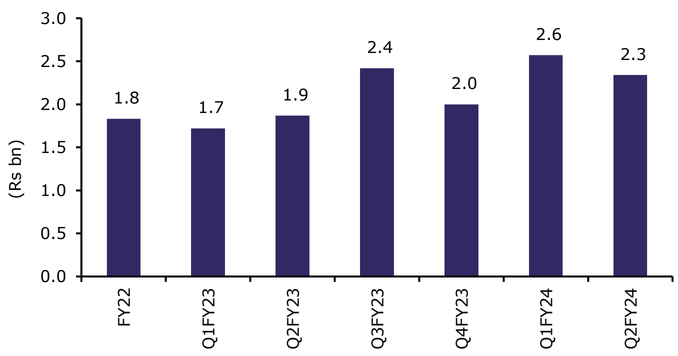
Tejas had an international order backlog of Rs2.3bn at the end of Q2FY24, and these orders are typically to be fulfilled in the next quarter within 16-20 weeks. These deals and applications, along with the execution of the BSNL project, can serve as important references for Tejas in the markets being targeted by the company. Tejas is investing in growing its international sales teams, developing its international business, and working with partners to make sure that its international business pipeline becomes strong in the next few quarters. **Tejas plans to expand its international business in 12-18 months.** The company is seen as one of the trusted sources (and as China's alternative). **Moreover, the international business is likely to have a higher margin vs. the domestic business.**

Change in the international strategy: The company has been focusing on emerging markets such as Southeast Asia, Middle East, and Africa and has worked in several international markets with OEM partners. **The company is currently focusing on gaining direct access to markets in Europe and USA.**

FibreConnect in Italy (required for launching broadband services in Italy using a complete portfolio of Tejas wireline products employing all of its access technologies, metro aggregation, and long-haul technologies) is also likely to serve as an important reference for the company. It is a single vendor network built solely using its products and technologies across all the applications and managed by a single network management system. The products offered range from DWDM/PTN/OTN for Core to xPON and Ethernet for Access. FibreConnect targets industrial areas in Italy, which currently lack broadband infrastructure.

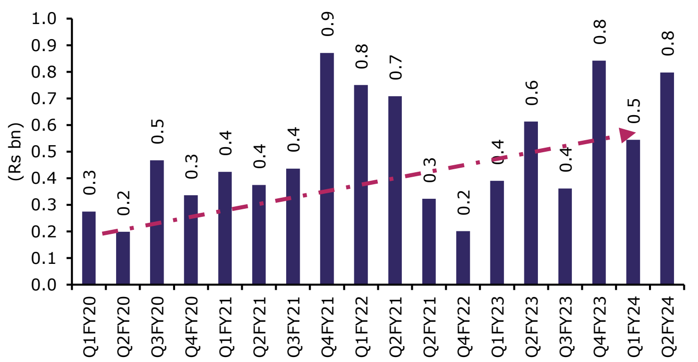
- Tejas has also been selected for the backbone network of a leading media and entertainment company in the USA.

Exhibit 10: International order book has been increasing



Source: Company, Emkay Research

Exhibit 11: International revenue levels have improved vs. FY20



Source: Company, Emkay Research

US Rip and Replace program can help international revenue

The US Rip and Replace program is aimed at moving away from Chinese players like Huawei and ZTE, especially in regards to the already installed 4G equipment in the USA and replacing that with modern, fully functional equipment. Congress allocated USD1.9bn for the Rip and Replace program with the passage of the Secure and Trusted Communications Network Act of 2019. The approved applications sought ~USD4.98bn to replace equipment from companies like Huawei and ZTE, indicating the current shortage of ~USD3bn. The Biden administration has asked Congress for an additional USD3.1bn to fully fund small-and-medium-sized network operators' efforts to remove and replace network gear and services from banned Chinese vendors.

Deepening partnerships with Washington in the technology sector will accelerate demand for products from India, including Tejas and TCS. At the G20 Summit, India and the USA affirmed their commitment to building 5G and 6G technologies, with the US President welcoming Indian companies for their support in the Rip and Replace program about the pilot project initially.

However, a few concerns regarding scale and brand value appeal compared to Nokia and Ericsson as well as the Federal Communications Commission (FCC) certification in the USA remain. Certification is essential for companies regarding security purposes as well as product compatibility purposes. **Saankhya Labs already has its three radios certified and is already selling to the USA.**

Further, during G20 Summit, the Memorandum of Understanding (MoU) between Bharat 6G Alliance and Next G Alliance, operated by Alliance for Telecommunications Industry Solutions, is a first step towards deepening public-private cooperation between vendors and telecom operators. The Next G Alliance was launched by the Alliance for Telecommunications Industry Solutions (ATIS) as an initiative to advance North American wireless technology leadership over the next decade through private sector-led efforts with its initial focus on 6G.

Beneficiary of government support through PLI scheme

In FY23, Tejas was declared eligible under the design-linked PLI scheme. **Tejas has committed to make an investment of Rs7.5bn over the scheme period.** The Rs122bn incentive scheme for local manufacturing of telecom and networking products offered 4-6% incentive to eligible companies on incremental sales over the base year (FY20), subject to investment thresholds being met. The scheme offers an additional incentive of 1% for applicants approved under the design-linked PLI scheme. The scheme is for a period of five years. In case of Tejas, the company will be eligible for an incentive from FY23 to FY27. **The investment of Rs7.5bn can theoretically generate a maximum incentive of Rs29.1bn in five years for Tejas.** The company gets PLI benefit for all the products it manufactures. Tejas has applied for PLI incentives for FY23, which are currently under process.

Exhibit 12: PLI for companies other than MSMEs, for investment over Rs1bn (rates for design-led manufacturing)

Year	Proposed Incentive Rate with Design-Led Manufacturing	Cumulative Investment	Minimum Eligible Incremental Net Sales of Manufactured Goods over the Base Year	Maximum Eligible Incremental Net Sales of Manufactured Goods over the Base year
1	**7%**	Greater than or equal to 20% of X	3*(20% of X)	20*(20% of X)
2	**7%**	Greater than or equal to 40% of X	3*(40% of X)	20* (40% of X)
3	**6%**	Greater than or equal to 70% of X	3*(70% of X)	20* (70% of X)
4	**6%**	Greater than or equal to X	3*X	20*X
5	**5%**		3*X	20*X

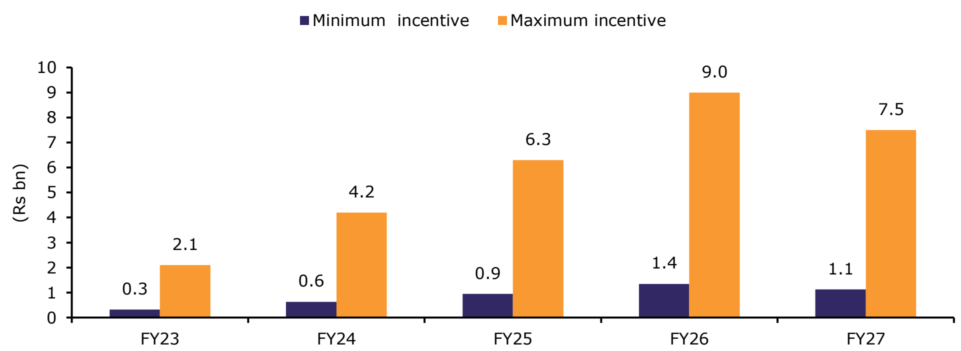
Source: MoT; Note: X = Committed Total Investment by the company/entity over a period of four years

Exhibit 13: Investment and incentive schedule for Tejas, for investment of Rs7.5bn

Year	Proposed Incentive Rate with Design-Led Manufacturing	Cumulative Investment (Rs bn)	Minimum Eligible Incremental Net Sales of Manufactured Goods over the Base Year FY20 (Rs bn)	Maximum Eligible Incremental Net Sales of Manufactured Goods over the Base year FY20 (Rs bn)
FY23	**7%**	1.5	4.5	30
FY24	**7%**	3	9	60
FY25	**6%**	5.25	15.75	10
FY26	**6%**	7.5	22.5	150
FY27	**5%**		22.5	150

Source: MoT, Emkay Research

Exhibit 14: Range of incentives that Tejas can receive, assuming investment of Rs7.5bn



Source: Emkay Research

Exhibit 15: PLI incentive for Tejas

(Rs bn)	FY23E	FY24E	FY25E	FY26E	FY27E	FY28E
Revenue	9.2	21.4	103.2	69.7	52.4	54.6
Incremental revenue (vs. FY20), eligible for incentive	5.3	17.5	99.3	65.8	48.5	0.0
PLI incentive with a lag	**0.0**	**0.4**	**1.2**	**6.3**	**4.6**	**3.4**

Source: Emkay Research

Exhibit 16: Progress under the PLI Scheme for telecom and network products manufacturing in India, as of 31-Aug-2023

Category	Investment	Sales	Employment-count
	(Rs bn)	(Rs bn)	(No. of)
MSMEs	1.69	14.54	1,559
Other domestic companies	9.93	40.8	14,829
International companies	12.57	289.82	1,365
Total	**24.19**	**345.16**	**17,753**

Source: udyamimitra.in

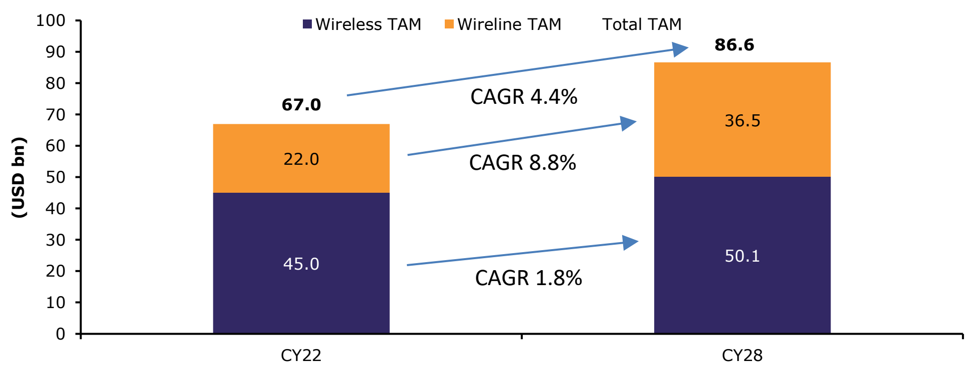
Expanding product line-up increasing TAM

Tejas has significantly expanded its product portfolio, which now consists of optical and packet transport, fiber access (FTTX), as well as wireless (4G/5G/SATCOM) products, which can be used to build an end-to-end telecom network. Historically, Tejas had a very strong wireline portfolio, and it has now added a wireless portfolio of 4G, 5G, and satellite; it also has 5G broadcast.

Tejas' products use software-defined hardware for their optical products, which can be reprogrammed to change the fundamental characteristic of the hardware. Access and aggregation products mostly use software-defined hardware as technology changes fast for these products. Tejas uses its wireline products for GPON, FTTH, and enterprise also in 4G/5G wireless base band unit or BBU. This converged product is one of the biggest differentiators for the company.

The company has made several recent additions to its network portfolio in diverse areas such as advanced multi-band 4G/5G radios, multi-technology 5G xHaul using WDM, xPON and IP/MPLS, and multi-terabit optical transmission with C+L band support.

Exhibit 17: TAM expected to increase for Tejas



Source: Company

Wireless products: In FY23, Tejas continued its investments in wireless product development (for 4G and 5G), which ended the year with good topline growth.

Tejas has been conducting trials with BSNL for 4G/5G radios. Tejas is collaborating with other ecosystem partners in India (TCS and C-DOT) for an end-to-end 4G and 5G stack. Tejas is currently one of the few telecom equipment companies in the world to offer both 3GPP and O-RAN compliant products for 5G RAN. **Tejas is now joining the handful of 4G/5G equipment suppliers, including Nokia, Ericsson, ZTE,** Huawei**, and Samsung. No major US companies are doing it, as it is a difficult technology that uses high-power radios.** Its 4G/5G RAN equipment is fully built in-house using own IPR, design, software, and hardware.

Tejas' 4G/5G RAN has two parts: i) base band unit or BBU, which are boxes at the base of the tower (these are also used in the company's wireline products) and **ii) the remote radio head** seen at the top of the tower that connects to the antenna. Wireless base band unit or BBU can also be used as wireline products for GPON, FTTH, and enterprise. **This converged product is one of the biggest differentiators for the company.**

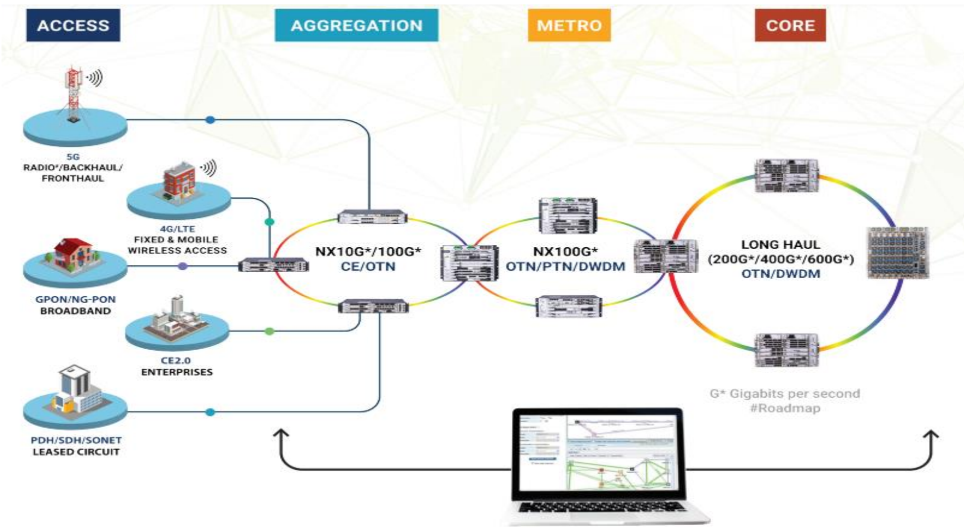
BSNL is the first customer for Tejas in wireless. Tejas wants to make sure that it is largely deployed in India and is fully mature before exporting it. Its product has been tested for more than a year in Chandigarh network as proof of concept after which it has been given the PO. Now, the larger deployment is happening across circles. These products have longer sales cycles, hence international deployment will happen at least after six months.

Wireline products: In the wireline segment, the company has a very strong end-to-end product portfolio, ranging from access and aggregation to the core. In India, Tejas provides GPON and DWDM products to leading Tier-1 operators. In FY23, Tejas was selected for multi-city enterprise GPON and PTN applications by two leading ISPs in the country.

Tejas registered several wins with system integration partners for Ethernet/IP switches in video surveillance, smart cities, campus networks, connectivity of banks, and other security-sensitive business verticals. **Key focus areas of Tejas in the wireline segment include the following:**

- Tejas is enhancing its optical networking products to support long-haul transmission, 1.2Tbps capacity per wavelength, and multi-terabit OTN switching.
- The company is upgrading its FTTX products based on GPON/XGS-PON technologies to support 25G and 50G speeds, making it ideal for non-residential applications such as enterprise broadband and 5G fronthaul.
- The company is also making investments in developing higher-capacity packet switching and routing products based on IP/MPLS technologies with associated software protocols to address the needs of next-generation access, campus, and metro networks.
- The company has been selected as GPON vendor for OLTs and ONTs by two leading regional ISPs in India.

Exhibit 18: End-to-end network solutions



Source: Company

About optical networks: An optical network is typically segregated into the following:

- **Access network** or the outer perimeter of a telecommunications network, which connects to the end-consumers.
- **Metro network** aggregates and distributes traffic collected from a variety of access networks within a large city or region.
- **Long-haul or backbone network** that interconnects metro networks using high bandwidth transmission networks.

Tejas' products are used to build telecom networks that carry voice and data traffic over optical fiber. **Tejas' main focus is on metro and access products.** Its **TJ1600 series of products**

are used for metro core networks (used for long-haul), while **TJ1400 products are used for metro access products and aggregation**.

Uses software-defined hardware in products: Tejas has made software-defined hardware the fundamental building block of its products. The company uses software-defined hardware so that it can change the fundamental characteristic of the hardware by reprogramming it. Access and aggregation products mostly use software-defined hardware products as technology changes fast for access and aggregation products. These are not used much in long haul or core products, where the technology changes slowly.

Exhibit 19: Tejas Networks – Key products

Category	Products	Details
BROADBAND ACCESS		
4G/LTE-based wireless broadband access products	TJ1400 eNoDB; TJ1602 eNoDB; TJ6003W	4G/LTE products are broadband access products used for delivering high-speed broadband services over wireless frequencies.
XPON based fiber broadband access	TJ1400-1 Pizza box OLT; TJ1400 OLT; TJ2100 ONT	XPON products are optical fiber-based broadband access products used in fiber-to-the-home/curb/building/premise broadband access applications.
Carrier Ethernet routing and switching	TJ1400P – M Series; TJ1400P Access Router; TJ1400 Aggregation Router	Enterprise Ethernet switches are deployed in a LAN within offices or campuses. Enterprise Ethernet switches enable inter-connection of computing devices and accurate redirection of packet traffic from source to destination devices within offices and campuses.
OPTICAL NETWORKING		
Converged-packet optical (CPO)	TJ1400; TJ1600; TJ1270	CPO products can simultaneously support transport, processing, and switching of both circuit and data traffic within one product. CPO products are key growth drivers of the global optical networking market.
Packet Transport Network (PTN)	TJ1400P; TJ1400 PTN	PTN products primarily transport data traffic and can also transport voice traffic by emulating it as packets of data. PTN products include Edge IP/MPLS and IP/ Ethernet products.
Dense Wavelength Division Multiplex (DWDM)	TJ1600 OTN/DWDM; TJ1600 Core Switch	DWDM products enable transportation of multiple wavelengths of light of different colors simultaneously over the same fiber, thereby allowing large volume of data to be transported over a single optical fiber.
OTHERS		
Network Management Software	TejNMS (TJ5500)	Integrated management application offering a single window operation for end-to-end network management. It supports provisioning, operations and management of PTNs, DWDM, SDH/SONET, GPON and OTN based services.

Source: Company, Emkay Research

R&D focus and cost advantage vs. global players gives an edge

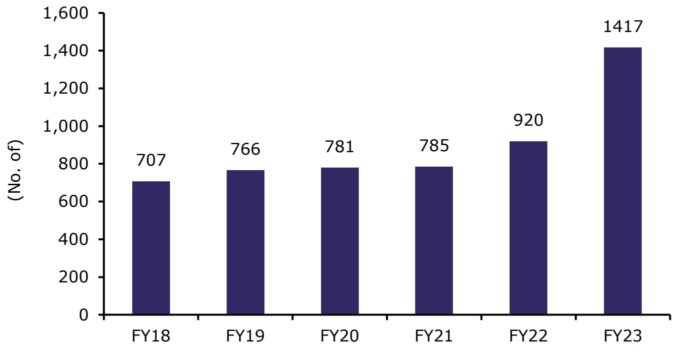
The company maintains its focus on R&D and innovation in an effort to build globally competitive products. During FY23, the company invested 28% of revenue (on fully expensed basis) on R&D, while increasing R&D headcount by more than 60%. The primary investment has been in R&D, but there have been marginal investments in support and other functions as the deployment in case of the BSNL order will be done by TCS.

The company continues to invest in growing its R&D teams for large upcoming shipments. **Tejas is looking to build teams in anticipation of the long cycle of business growth.** The Tata Group is looking to build Tejas a top tier OEM from India. The company has primarily added permanent employees in the R&D space, as Tejas is an R&D-driven company. In the R&D division, employee strength has increased to ~1,100 from ~350.

As an R&D-driven company, hiring and retaining premier technical talent is critical to the company's long-term success. In FY23, the company continued to accelerate hiring across all key functions to support its growth plans. As of March 31, 2023, the company had 1,417 employees on its rolls (including subsidiaries), which is a 54% YoY increase vs. FY22. **The company added 497 employees during FY23 (including SL) and its annualized attrition was 17.9%. Over 64.5% of Tejas' employees are in R&D with an average industry experience of 8.7 years and nearly 29.4% have advanced degrees in engineering.** The company's R&D headcount increased by 81% during FY23 (including SL) compared with FY22.

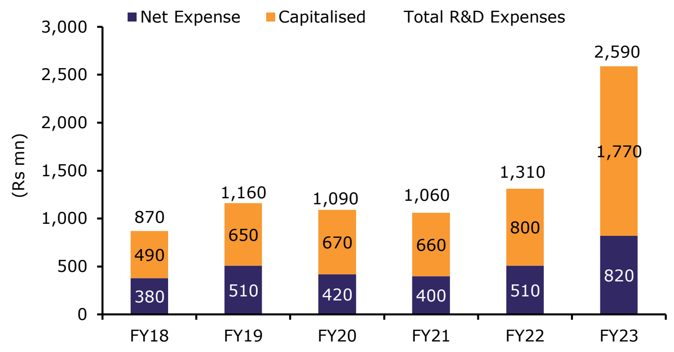
During the course of the year, the HR team also on-boarded a majority of the Saankhya employees to Tejas. On the hiring front, Tejas partnered with an external agency to hire junior technical talent across India. This external agency has deep relationships with top engineering colleges, which were leveraged to hire talent across the country. This hired talent is then put through the rigorous 'Tejas Academy' bootcamp.

Exhibit 20: Permanent employee count has gone up for Tejas



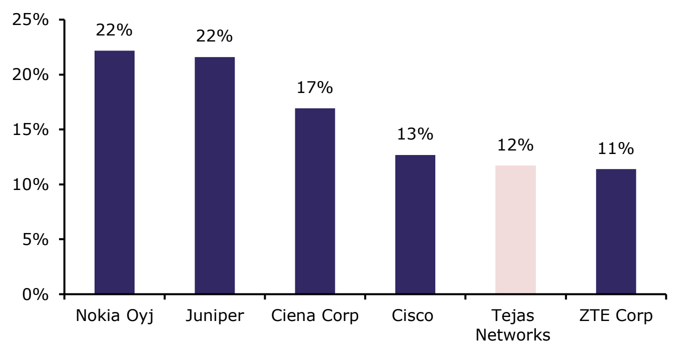
Source: Company, Emkay Research

Exhibit 21: R&D expense has increased to help build up scale



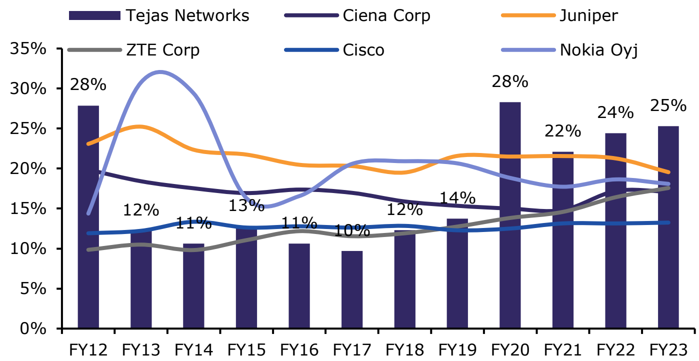
Source: Company, Emkay Research

Exhibit 22: Employee cost as a share of revenue – FY13-19 average



Source: Company, Emkay Research

Exhibit 23: Tejas vs peers – Employee cost as a share of revenue



Source: Company, Emkay Research

Some of the highlights of Tejas' products are as follows:

- **Software-defined hardware:** Programmable silicon eases feature upgrades and helps in quicker incorporation of new standards and protocols.
- **Multi-generation support:** Products can support multiple technology generations from the same platform (2G/3G 4G/5G and GPON->XGSPON/NG-PON). The company has built strong client relationships aided by Tata's brand support.
- **Reuse of hardware elements:** Tejas' products maximize the reuse of hardware elements during network transition through hardware reprogramming, software upgrades, tunable optics, and multi-rate cards.
- **Disaggregated architecture:** Disaggregated architecture enables dynamic and incremental scaling of switching capacity.

Exhibit 24: Competition from global players

Products	Competitors
CPO products	Huawei, Nokia, Ciena and ZTE
PTN products	Cisco, Nokia, Huawei, ZTE, ECI, Fiberhome
DWDM products	Huawei, Ciena, ZTE, Nokia, Adva, Infinera
GPON-based broadband access	Huawei, Nokia, ZTE, Dasan, UTL, Alphion
4G/LTE-based wireless broadband access	Ericsson, Nokia, Samsung, ZTE and Huawei
Enterprise ethernet switches	Cisco, Juniper, Huawei and HP

Source: Company, Emkay Research

Asset-light model with EMS makes operations scalable

The company follows an asset-light manufacturing model. It manufactures products in India through partnerships with Electronics Manufacturing Services (EMS) companies that include Sanmina (factory in Chennai) and Cyient (factory in Mysore). The company has added new facilities in Bengaluru and increased manufacturing infrastructure significantly to address the large upcoming shipments. The company has significantly expanded its manufacturing capacity by signing up four new EMS partners in India. Tejas has an in-house manufacturing facility focused on final integration, testing, and quality control to ensure only high-quality products are delivered by the company.

Saankhya Labs' acquisition to aid wireless solutions

In FY23, Tejas acquired 64.4% of Saankhya Labs for Rs2,839.4mn in an all-cash deal. For the 35.6% balance equity shares, the company filed for amalgamation through the National Company Law Tribunal (NCLT) process, which is currently underway. Its integration with Tejas is progressing well.

Saankhya is strong in **satellite communications and broadcast technology** and in semiconductor design. Further, it was a profitable company before the acquisition. However, currently, the focus is on developing chips for its own internal products for its internal consumption.

- **Satellite communication products:** The company has developed asset-tracking applications like Vessel Tracking System and Locomotive Tracking System using satellite communication solutions. Unlike many other asset-tracking solutions, Saankhya Labs' real-time asset tracking solutions include two-way communication capability, which can help in better management and increasing the efficiency of operations.

- **5G broadcast technology:** Developing multiple applications such as data distribution as a service, direct-to-mobile (D2M) broadcast, etc. Saankhya's broadcasting solution uses 'smart' pipes to deliver linear and OTT video services by exploiting the one-to-infinite architecture.

- **Silicon design:** Tejas is focusing on how it can use Saankhya Labs' semiconductor design skill sets to enhance its products.

Tejas is not yet looking at how the company can get into the semiconductor market of building chips and selling it globally.

New order from NSIL, Department of Space, in Dec-23: Saankhya Labs has secured an order worth **Rs964.2mn** from NewSpace India Limited (NSIL), a Government of India entity under the Department of Space. This involves providing Two-Way MSS Terminals (Xponders) for Marine Fishing Vessels along India's coastal states, enhancing Monitoring, Control, and Surveillance (MCS) systems. In collaboration with NSIL, ISRO, and the Department of Fisheries, Saankhya Labs will deploy indigenous satellite terminals (Xponders) on fishing vessels. This will help ensure fishermen's safety by enabling vessel communication, navigational aid, boundary alerts, and emergency weather notifications.

Partnership with Renesas Electronics

In June-22, Japanese chipmaker, Renesas Electronics Corp. announced a partnership with Tejas on the design, development, and manufacturing of Renesas' semiconductor solutions. Renesas will collaborate with Tejas for implementing next-generation wireless network solutions. This includes the design and development of semiconductor solutions for radio units (RU) used in telecom networks from 4G to 5G. Renesas and Tejas also plan to develop some new technologies, the details of which have not been disclosed by the companies.

Experienced management

Tejas is led by its newly appointed CEO, Anand Athrey, an industry veteran with more than 25 years of experience in telecom equipment, networking, and software industries. Before Tejas, he was the Executive Vice President and Chief Development Officer at Juniper Networks, where he served for over 18 years and built several products. At Juniper, he managed USD4bn worth of products, ranging from silicon to highly complex systems (full rack, massive routers, and common operating system across all of its products); and it was done at scale. He led this for a long time, which gives him experience and connect, particularly in the USA, where he has worked for ~35 years. **We believe Tejas will benefit from his long experience and good connect in the USA, where the company is trying to make inroads. His experience will particularly help drive international revenue and in sourcing electronic components where the company is facing some challenges.**

Moreover, Arnob Roy, Co-Founder, Executive Director (ED), and Chief Operating Officer (COO) of Tejas has over 30 years of experience in R&D, operations, and sales in the high-tech industry. His has led the company since inception and we believe his experience will prove to be valuable in executing large BSNL orders, given his earlier experience with BharatNet project's execution.

Synergies with Tata Group

Tejas is expected to benefit from the backing of a big group. Tejas is working with Tata Group companies on deals wherever it is feasible – TCS (TCEL) and TCom (TCTS) – where there are several synergies. There can be some synergies with TCom on optical transport as well as enterprise 5G. Tejas is also working with TCS on BSNL's 4G/5G deal. Moreover, TCom and TCS have the reach and penetration that can help connect Tejas to their customers.

Tata Group's semiconductor foray's additional boost

Tata Electronics, part of the Tata Group, is planning to set up a semiconductor processing plant in Assam at an investment of about Rs400bn. The Centre has been approached for the final nod after discussions with the state government, and the go-ahead is expected soon, as per media reports. If Tata Group companies can start chip manufacturing, there is a possibility that Tejas can join hands for the sourcing of hardware/chips. However, this is still a couple of years away.

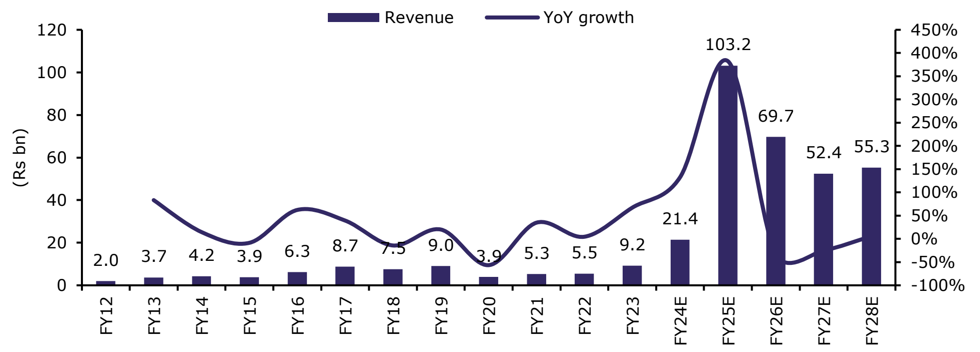
Financials to improve with increasing revenue

Revenue to pick up with the execution of BSNL's order book

We estimate Tejas to execute orders worth at least Rs292bn in five years (FY24-FY28). This includes key projects related to BSNL, BharatNet-3, and Railways (up-gradation of Kavach to LTE). Revenue over FY24-FY28E could be higher as estimates exclude (i) AMC for the projects and (ii) run rate revenue from India private and international projects (see exhibit 25). Tejas can generate ~Rs300bn in revenue over FY24-FY28E, with peak revenue of ~Rs100bn in FY25E. From FY26, we expect revenue to settle down at elevated levels, as Tejas executes BharatNet-3, BSNL's pan-India 5G, and Indian Railway projects, POs for which are yet to be awarded.

In Q2FY24, Tejas reported the best quarter ever in its history with revenue of Rs3.96bn and 80% YoY growth. Tejas also had the largest backlog of Rs92.7bn and a healthy booking at the end of Q2FY24.

Exhibit 25: Revenue to remain elevated post peaking in FY25, on execution of the BSNL order



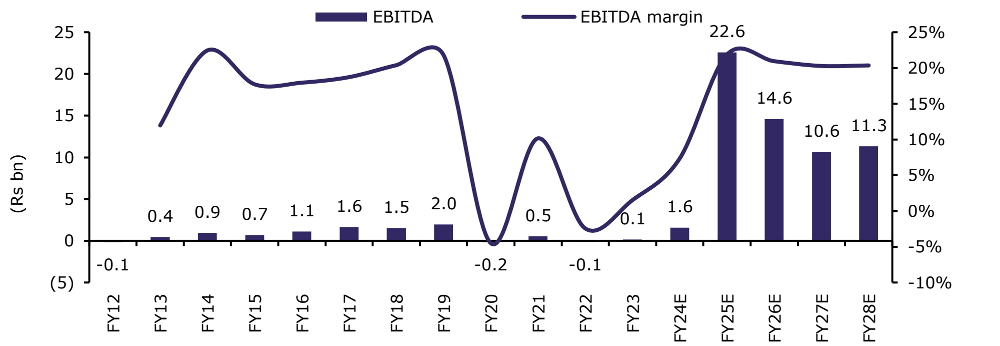
Source: Company, Emkay Research

Margins to improve as scale picks up and component shortage concern recedes

Tejas has invested ahead of the growth curve. As a result, fixed cost will stabilize once the scale picks up and delivery of BSNL products starts. Cost increases will come down significantly once the investment for people, infrastructure, and manufacturing lines stabilizes. Moreover, the company is paying expedite fees for the early delivery of semiconductor chips, which is likely to decline over time, thus aiding margin expansion. Margin pressure due to component shortage is unlikely to be sustained as the company has already placed POs for components required for the delivery of BSNL's order. Costs will come down as the company becomes more predictable in ordering and supply chain management. Lead times are still long, but the company will be able to plan more effectively as long as they are constant. **The company wants to move to better planning, which will reduce expedite fee. Once the company gains scale, it can also start negotiating with the suppliers, which will help margins. The pricing of components depends on volume and relationship.**

We expect better margins as the company starts to grow and gains scale. On the execution of 4G BSNL project, we expect an increase in Tejas' credibility and it is likely to be recognized as one of the leading OEMs in the world with higher scale, which will lead to new opportunities for Tejas.

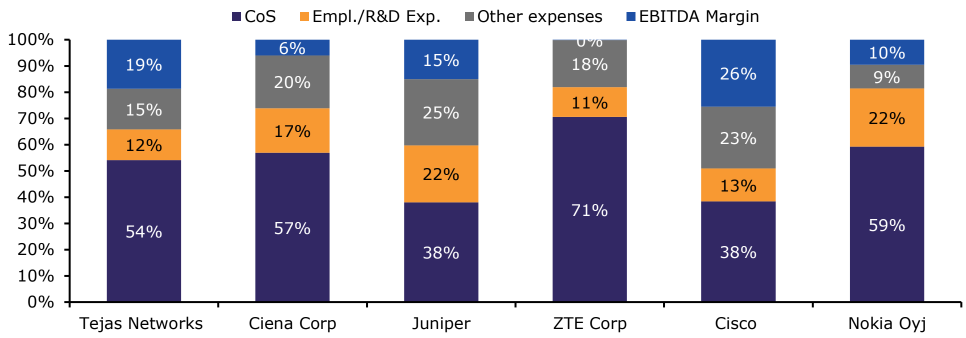
Exhibit 26: Margin to recover to 20% on operating leverage, as revenue increases



Source: Company, Emkay Research

While comparing the cost structure of Tejas with peers (over FY13-19), we see that Tejas enjoys a higher EBITDA margin vs. peers due to lower employee expenses (or R&D expenses) and other expenses as a share of revenue vs. peers. We believe, being an R&D-driven industry, Tejas benefits from lower manpower cost in India, which gives it an edge over peers.

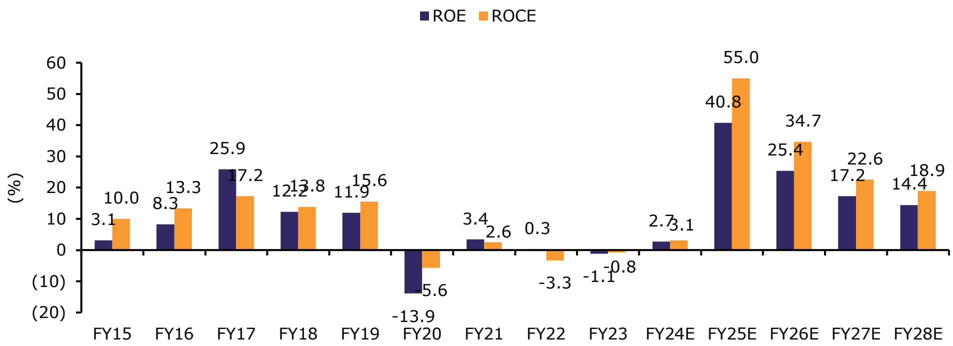
Exhibit 27: Cost and EBITDA margin as a share of revenue – Tejas vs. peers (FY13-19)



Source: Company, Emkay Research, Bloomberg

Returns to improve: We expect returns to improve for the company as Tejas gains scale. We see RoE/ROCE increasing to 25%/35% by FY26E, as revenue and profitability rise while the company maintains its asset-light structure, as manufacturing is done by EMS partners.

Exhibit 28: RoE to be above 14%, even after stabilization of revenue

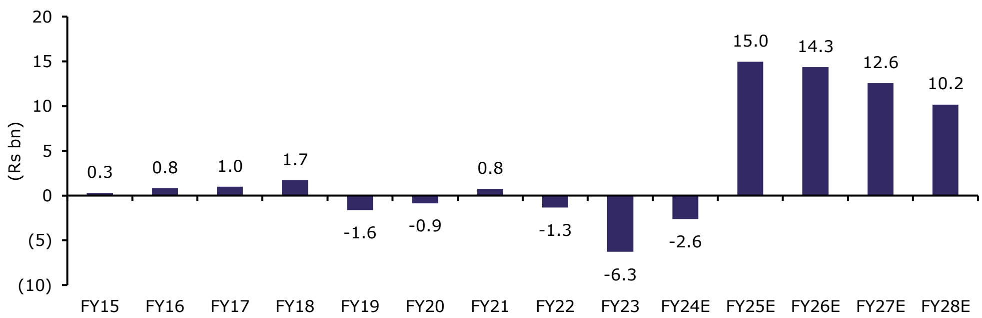


Source: Company, Emkay Research

Cash position remains strong

The company's cash position remains strong at Rs13bn in cash and cash equivalents with no debt at the end of FY23. This along with the strong balance sheet can help execute large orders and scale-up business going forward. Rs18bn has been invested by the Tatas in Tejas. Currently, the company does not have any debt. There may be short-term working capital arrangements that need to be done as receivables increase with the scaling up of operations. The company does not have manufacturing operations, so it does not require debt for it. We see Tejas generating ~Rs49bn in free cash flow over FY24-28E.

Exhibit 29: Tejas to generate ~Rs50bn in free cash flow over FY24-28E



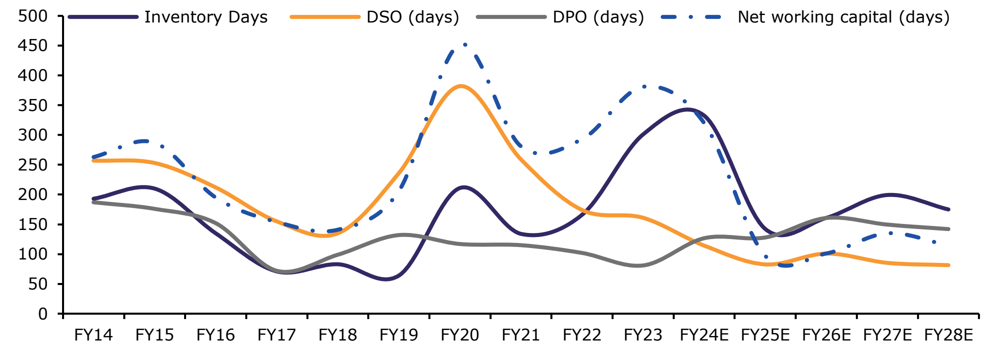
Source: Company, Emkay Research

Working capital to remain manageable: Despite increased revenue during Q2, trade receivables for Q2 were down to Rs4.87bn from Rs5.01bn in Q1 and collections during Q2 have been the highest quarterly collections ever. **During Q2, the company's net working capital was Rs6.71bn, which significantly decreased by Rs5.27bn during Q2, primarily on account of mobilization advance of Rs7.5bn received from TCS for 4G equipment supplies.** Inventory levels have increased to Rs14bn (at the end of Q2FY24), primarily because of securing long-lead components for expediting the delivery of several, critical large orders. This is likely to get converted into finished goods and shipped in the coming quarters. With increased execution of BSNL POs, inventory is expected to rise for the next few quarters, as there is a lag between manufacturing and shipments, though it will gradually subside as the shipment of finished goods gains pace.

Less likelihood of working capital getting stretched this time: Tejas previously completed a BharatNet project, during which the company faced challenges with the late payment of receivables. This led to stretched working capital for the company.

We see less likelihood of working capital getting stretched this time on the execution of BSNL's 4G project as (i) Tejas has already received the mobilization advance of Rs7.5bn from TCS for 4G equipment supplies; (ii) BSNL's project for 4G has been fully funded by the government and it is not being funded by the cash flow of BSNL and, hence, the likelihood of working capital stretching again is less; and (iii) inventory with the company is expected to come down as issues related by component sourcing gets resolved.

Exhibit 30: Working capital increased in FY19/FY20, as DSO related to BharatNet is stretched



Source: Company, Emkay Research

Valuation: Initiate with a BUY recommendation and DCF-based TP of Rs1,050

We see Tejas generating ~Rs300bn in revenue over FY24-FY28E, which is likely to result in EBITDA of ~Rs60bn over the same period. **We use DCF valuation (WAACC 10.5%; Terminal growth rate 6%) to arrive at our TP of Rs1,050 (23% upside), implying 14.3x P/E (Dec-24). We initiate coverage with a BUY recommendation,** as we see Tejas to be the major beneficiary of: i) the government's emphasis on domestic manufacturing and PLI scheme; ii) large spending expected by the government on BSNL and BharatNet; iii) increasing demand in critical infrastructure and India private; and iv) global move towards replacing Chinese telecom equipment from ZTE and Huawei. We see some moderation in revenue for Tejas post FY26 on the execution of BSNL's 4G project. However, we expect revenue to remain well above FY23 levels, as the company executes orders led by BSNL.

Exhibit 31: Sensitivity to terminal growth rate and WACC

		Terminal Growth Rate				
(Rs/share)		**5.0%**	**5.5%**	**6.0%**	**6.5%**	**7.0%**
	11.5%	800	835	**880**	930	990
	11.0%	855	900	**955**	1,020	1,100
WACC	**10.5%**	**925**	**980**	**1,050**	**1,135**	**1,240**
	10.0%	1,010	1,080	**1,165**	1,280	1,430
	9.5%	1,110	1,200	**1,320**	1,475	1,690

Source: Emkay Research

Exhibit 32: Tejas Networks vs peers – Valuations

	EV/EBITDA (x)			P/E (x)			ROE (x)		
Company	**FY24E**	**FY25E**	**FY26E**	**FY24E**	**FY25E**	**FY26E**	**FY24E**	**FY25E**	**FY26E**
For Dec ending	**CY23E**	**CY24E**	**CY25E**	**CY23E**	**CY24E**	**CY25E**	**CY23E**	**CY24E**	**CY25E**
ZTE	6.9	6.2	5.8	12.0	10.5	9.3	15.0	15.1	15.1
Nokia	4.8	5.0	4.6	9.5	9.7	8.9	7.9	7.4	8.2
Cisco	9.1	9.4	9.3	13.2	12.9	12.5	35.1	32.4	30.6
NEC	8.5	7.5	6.8	24.8	17.8	15.0	5.8	7.3	8.1
Optical specialists									
Fiberhome	26.9	20.0	18.0	40.0	28.1	22.0	3.9	5.4	6.6
Ciena	10.4	9.6	8.2	16.6	15.2	12.4	14.0	14.3	15.9
Adtran	44.6	15.2	8.5	N/A	80.3	16.6	-21.7	-2.7	3.6
Infinera	11.2	8.1	5.7	28.6	14.2	8.5	21.3	45.1	56.2
Juniper	8.5	8.6	8.0	12.8	12.6	11.5	16.8	16.8	17.6
Multi-vertical OEMs									
Fujitsu	8.3	9.2	8.5	16.1	19.3	15.9	15.4	12.5	14.8
Tejas Networks	95.5	5.8	8.0	178.3	9.1	10.5	2.7	40.8	25.4
Median (Ex-Tejas)	**8.8**	**8.9**	**8.1**	**16.1**	**14.7**	**12.4**	**14.5**	**13.4**	**14.9**
Average (Ex-Tejas)	**13.9**	**9.9**	**8.3**	**19.3**	**22.1**	**13.3**	**11.4**	**15.4**	**17.7**

Source: Bloomberg, Emkay Research

Exhibit 33: Tejas Networks vs peers – EBITDA margin

Company	**Mkt. Cap.**	**FY24E**	**FY25E**	**FY26E**
For December ending	**(USD bn)**	**CY23E**	**CY24E**	**CY25E**
ZTE	16.5	12.1%	12.3%	12.1%
Nokia	17.7	14.4%	14.9%	15.6%
Cisco	196.6	36.1%	37.1%	36.5%
NEC	15.5	10.3%	11.0%	11.7%
Optical specialists				
Fiberhome	3.0	3.7%	4.3%	4.3%
Ciena	6.4	15.1%	16.0%	17.3%
Adtran	0.5	2.1%	6.8%	10.3%
Infinera	1.0	9.0%	11.8%	15.6%
Juniper	9.2	20.2%	20.3%	20.8%
Multi-vertical OEMs				
Fujitsu	30.8	14.1%	12.1%	13.3%
Median (Ex-Tejas)		**13%**	**12%**	**14%**
Average (Ex-Tejas)		**14%**	**15%**	**16%**

Source: Bloomberg, Emkay Research

Exhibit 34: Tejas Networks vs peers – CAGR over CY22-25E

For December ending	Mkt. Cap. (USD bn)	Revenue CY22-25E	EBITDA CY22-25E	PAT CY22-25E
ZTE	16.5	5.8%	11.0%	11.7%
Nokia	17.7	-1.5%	0.7%	-16.4%
Cisco	196.6	2.1%	5.8%	8.1%
NEC	15.5	4.3%	7.4%	0.7%
Optical specialists				
Fiberhome	3.0	9.3%	8.9%	21.0%
Ciena	6.4	7.7%	22.0%	37.0%
Adtran	0.5	5.0%	NM	NM
Infinera	1.0	3.1%	NM	NM
Juniper	9.2	2.1%	11.1%	14.8%
Multi-vertical OEMs				
Fujitsu	30.8	2.4%	6.7%	7.5%
Tejas Networks		96%	370%	N/A
Median (Ex-Tejas)		**4%**	**8%**	**10%**
Average (Ex-Tejas)		**4%**	**9%**	**11%**

Source: Bloomberg, Emkay Research

Risks and risk mitigants

Supply chain constraints can impact margin

During FY23, Tejas navigated many tough issues on the supply chain. In Q1FY24, there was a disruption in the EMS planned transition, and there were also a few component delays. However, this has been fixed now. The company also paid expedite fees for pulling in delayed components for critical customer shipments. These costs could not be fully passed on to its customers, leading to margin pressure for Tejas.

Tejas continues to build on inventory, and the company has secured a long lead component for expediting the delivery of several critical, large orders. The company believes better planning and ordering components in advance will help mitigate the component availability risk.

On the supply chain front, Tejas has appointed Sembian Venkatesan as its Chief Supply Officer. Sembian is an industry veteran of 30 years in manufacturing and supply chain management.

Client concentration risk and volatility in financial results

Tejas operates in the B2B business and a significant portion of its revenue is derived from a small number of customers, which is the inherent nature of the industry. This leads to client concentration as well as lumpiness in its revenue. Net revenue contribution of its top-two customers was 20% during FY23 vs. 33% in FY22, as per the company's annual report. We estimate that a large proportion of the order book in the next five years will be coming from BSNL and BharatNet-3, so client concentration may continue. However, with international expansion and addition of more clients, lumpiness in revenue is likely to gradually reduce, as the company gains scale.

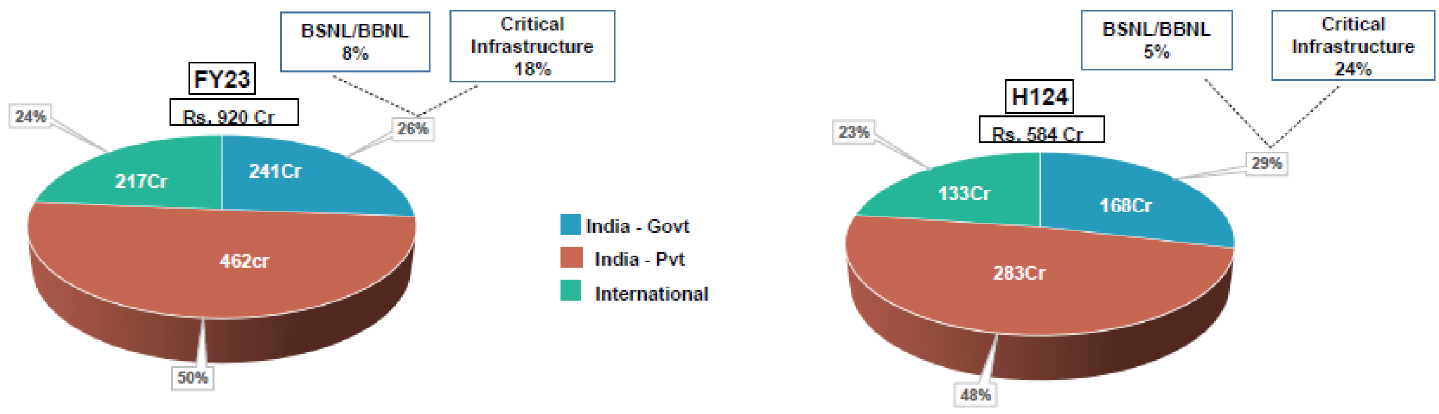
Adverse international restrictions

The US has banned some chips and China has banned some new materials. However, US-China geopolitical tensions have been going on for some time. Moreover, the use of Chinese components is low in Tejas' products and is unlikely to impact Tejas. The company's management feels good diplomatic relations with the USA have only helped Tejas in this regard.

About the company

Founded in 2000 and headquartered in Bengaluru, Tejas is India's largest R&D-driven telecom equipment company. The company designs and manufactures high-performance wireline and wireless networking products for telecom service providers, internet service providers, utilities, and defense and government entities in over 75 countries. The company aims to become an innovation-driven, global telecom and networking product company. The company's revenue is split between India government, India private, and international clients.

Exhibit 35: Tejas Networks – Revenue breakup (H1FY24 vs. FY23)



Source: Company; Note: 1 crore = 10mn

Tejas is ranked No. 1 in India's optical aggregation market and stands among the top 10 players globally (source: Omdia). Tejas has a rich portfolio of patents and has shipped more than 700,000 systems across the globe.

In FY23, Tejas acquired 64.4% stake in Saankhya Labs for Rs2,839.4mn in an all-cash deal.

Company Timeline

Exhibit 36: Tejas Networks – Timeline

Time period	Funding and financials	Business
2000-2003	Founded in Bangalore in CY2000	Launched TJ100MC
	Series A funding – Rs207mn	Won first pan-India network (Railtel)
	Series B funding – Rs408mn	Won many customers in India including Tata
	Series C funding – Rs698mn	
	FY03 revenue – Rs270mn	
2004-2007	Series D funding – Rs930mn	Launched TJ100ME and TJ1500
	Series E funding – Rs950mn	Signed agreement with a global OEM (Ciena/Nortel)
	FY07 revenue – Rs3.35bn	Won the world's largest MSPP deployment at BSNL
2008-2011	Series F funding – Rs748mn	Launched Packet Optical Product (POTP) – TJ1600 and TJ1400
	FY11 revenue Rs4.47bn	Products used in 3G networks of Airtel, BSNL, RCOM, and Aircel
2012-2018	Series G funding – Rs670mn	Launched DWDM, PTN, GPON, and 100G products
	IPO in 2017	Started international sales expansion
	FY18 revenue Rs7.50bn	Built Asia's largest PTN network in Malaysia
		Deployed in 4G backhaul network of Airtel, Idea, RJio
2019-2023	FY20 to FY22 impacted by COVID-19	Tejas declared eligible under the design-linked PLI scheme
	Also impacted by chip shortage	Rs74.92bn order from TCS to supply 4G/5G RAN equipment for BSNL
	FY20 revenue at Rs3.9bn	Acquired Saankhya Labs for wireless communication solutions
	FY23 revenue at Rs9.2bn	

Source: Company, Emkay Research

Key management personnel

- **Anand Athreya (CEO):** Anand Athreya is an industry veteran with more than 25 years of experience in telecom equipment, networking, and software industries, both in technical and managerial capacities. Before Tejas, he was the Executive Vice President and Chief Development Officer at Juniper Networks, where he served for over 18 years and built several products. Prior to Juniper, Anand worked in various roles in Procket Networks, Malibu Networks, Tiara Networks, and Novell.

Anand earned his B.E. in Electrical Engineering from Bangalore University and M. Tech in Computer Science and Engineering from Osmania University in India. He obtained an MBA from National University in California and attended the Advanced Management Program at Harvard Business School.

- **Arnob Roy (ED, COO):** Arnob Roy is the Co-Founder, Executive Director, and Chief Operating Officer of Tejas. He has over 30 years of experience in R&D, operations, and sales in the high-tech industry. Prior to Tejas, he has held senior management positions at Synopsys Inc. and Cadence Design Systems.

  Arnob holds a Master's Degree in Computer Science from the University of Nebraska, Lincoln, USA, and a Bachelor's Degree in Technology in Electronics and Communication Engineering from the Indian Institute of Technology, Kharagpur.

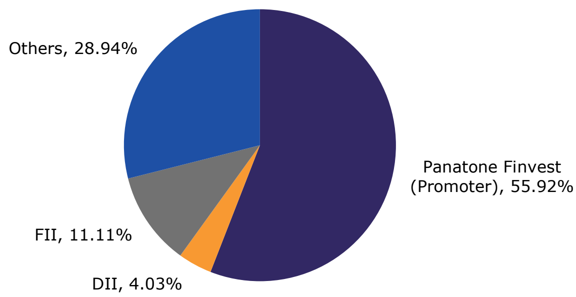
- **Sumit Dhingra (CFO):** Sumit Dhingra has been appointed as CFO of Tejas with effect from December 1, 2023. He has over 16 years of experience in corporate finance, performance management, business planning, acquisitions, fundraising, strategic analysis, and project management across a spectrum of industries. Prior to joining Tejas, he worked as Assistant Vice President in the Group CFO's Office at Tata Sons Pvt. Ltd. In the past, Sumit has also worked with Kotak Investment Banking and Everstone Capital.

  Sumit Dhingra is an MBA from Indian Institute of Management Calcutta and BE (CSC) from Delhi Institute of Technology.

Shareholding

Tejas is part of the Tata Group, with Panatone Finvest (a subsidiary of Tata Sons Pvt) being the majority shareholder with a ~56% stake.

Exhibit 37: Tejas Networks – Shareholding pattern (Sep-23)



Source: BSE

Tejas Networks: Consolidated Financials and Valuations

Profit and Loss

Y/E Mar (Rs mn)	FY22	FY23	FY24E	FY25E	FY26E
Revenue	**5,506**	**9,196**	**21,390**	**1,03,192**	**69,664**
Revenue growth (%)	4.6	67.0	132.6	382.4	(32.5)
EBITDA	**(135)**	**140**	**1,574**	**22,575**	**14,590**
EBITDA growth (%)	(125.2)	0.0	1,021.1	1,334.3	(35.4)
Depreciation & Amortization	768	1,140	1,681	1,989	2,237
EBIT	**(902)**	**(1,000)**	**(107)**	**20,586**	**12,353**
EBIT growth (%)	(6,639.1)	0.0	0.0	0.0	(40.0)
Other operating income	0	0	0	0	0
Other income	433	810	1,104	1,943	7,019
Financial expense	32	152	145	55	53
PBT	**(501)**	**(342)**	**852**	**22,474**	**19,319**
Extraordinary items	(670)	0	0	0	0
Taxes	(544)	(62)	39	6,461	5,554
Minority interest	0	0	0	0	0
Income from JV/Associates	0	0	0	0	0
Reported PAT	**(627)**	**(279)**	**814**	**16,013**	**13,765**
PAT growth (%)	(267.0)	0.0	0.0	1,867.4	(14.0)
Adjusted PAT	**43**	**(279)**	**814**	**16,013**	**13,765**
Diluted EPS (Rs)	**(6.0)**	**(2.5)**	**4.8**	**94.4**	**81.1**
Diluted EPS growth (%)	(249.7)	0.0	0.0	1,867.4	(14.0)
DPS (Rs)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Dividend payout (%)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
EBITDA margin (%)	(2.4)	1.5	7.4	21.9	20.9
EBIT margin (%)	(16.4)	(10.9)	(0.5)	19.9	17.7
Effective tax rate (%)	108.6	18.3	4.5	28.7	28.7
NOPLAT (pre-IndAS)	**77**	**(817)**	**(102)**	**14,668**	**8,802**
Shares outstanding (mn)	105.0	113.5	169.6	169.6	169.6

Source: Company, Emkay Research

Balance Sheet

Y/E Mar (Rs mn)	FY22	FY23	FY24E	FY25E	FY26E
Share capital	1,178	1,716	1,730	1,730	1,730
Reserves & Surplus	18,124	28,013	29,548	45,561	59,326
Net worth	**19,303**	**29,730**	**31,278**	**47,290**	**61,055**
Minority interests	0	0	0	0	0
Deferred tax liability (net)	(1,470)	(738)	(1,326)	(1,326)	(1,326)
Total debt	**124**	**2,027**	**2,979**	**2,979**	**2,979**
Total liabilities & equity	**17,957**	**31,019**	**32,930**	**48,943**	**62,708**
Net tangible fixed assets	0	0	0	0	0
Net intangible assets	0	0	0	0	0
Net ROU assets	0	0	0	0	0
Capital WIP	396	1,536	2,760	2,478	2,710
Goodwill	0	2,118	2,118	2,118	2,118
Investments [JV/Associates]	0	0	0	0	0
Cash & equivalents	**7,490**	**10,041**	**8,103**	**23,732**	**38,740**
Current assets (ex-cash)	10,367	17,238	36,909	55,525	39,714
Current Liab. & Prov.	1,674	4,264	23,495	41,797	27,503
NWC (ex-cash)	**8,693**	**12,974**	**13,414**	**13,728**	**12,211**
Total assets	**17,957**	**31,019**	**32,930**	**48,943**	**62,708**
Net debt	(3,348)	(5,391)	2,050	(13,579)	(28,586)
Capital employed	17,957	31,019	32,930	48,944	62,709
Invested capital	**10,071**	**19,442**	**22,068**	**22,733**	**21,259**
BVPS (Rs)	183.8	261.9	184.4	278.8	359.9
Net Debt/Equity (x)	(0.2)	(0.2)	0.1	(0.3)	(0.5)
Net Debt/EBITDA (x)	24.9	(38.4)	1.3	(0.6)	(2.0)
Interest coverage (x)	(0.1)	(0.8)	0.1	0.0	0.0
RoCE (%)	**(3.3)**	**(0.8)**	**3.1**	**55.0**	**34.7**

Source: Company, Emkay Research

Cash Flows

Y/E Mar (Rs mn)	FY22	FY23	FY24E	FY25E	FY26E
PBT	(501)	(342)	852	22,474	19,319
Others (non-cash items)	0	0	0	0	0
Taxes paid	544	62	(39)	(6,461)	(5,554)
Change in NWC	(2,547)	(3,550)	(1,028)	(314)	1,517
Operating cash flow	**(173)**	**(3,803)**	**1,467**	**17,024**	**16,853**
Capital expenditure	(1,187)	(7,370)	(5,090)	(2,059)	(2,512)
Acquisition of business	0	0	0	0	0
Interest & dividend income	242	522	670	719	719
Investing cash flow	**(8,278)**	**(5,813)**	**(4,400)**	**(1,340)**	**(1,793)**
Equity raised/(repaid)	213	538	14	0	0
Debt raised/(repaid)	(53)	1,903	952	0	0
Payment of lease liabilities	0	0	0	0	0
Interest paid	(32)	(152)	(145)	(55)	(53)
Dividend paid (incl tax)	0	0	0	0	0
Others	8,266	7,700	(864)	0	0
Financing cash flow	**8,394**	**9,989**	**(43)**	**(55)**	**(53)**
Net chg in Cash	(57)	373	(2,976)	15,629	15,007
OCF	(173)	(3,803)	1,467	17,024	16,853
Adj. OCF (w/o NWC chg.)	(2,720)	(7,353)	438	16,710	18,371
FCFF	(1,361)	(11,173)	(3,624)	14,965	14,342
FCFE	(1,151)	(10,802)	(3,099)	15,629	15,007
OCF/EBITDA (%)	128.8	(2,708.8)	93.2	75.4	115.5
FCFE/PAT (%)	183.5	3,869.1	(380.7)	97.6	109.0
FCFF/NOPLAT (%)	**(1,762.0)**	**1,367.4**	**3,555.7**	**102.0**	**162.9**

Source: Company, Emkay Research

Valuations and Key Ratios

Y/E Mar	FY22	FY23	FY24E	FY25E	FY26E
P/E (x)	2,094.6	(347.7)	178.3	9.1	10.5
P/CE(x)	110.8	112.8	58.2	8.1	9.1
P/B (x)	4.7	3.3	4.6	3.1	2.4
EV/Sales (x)	15.7	10.0	6.9	1.3	1.7
EV/EBITDA (x)	(642.7)	653.1	93.5	5.8	8.0
EV/EBIT(x)	(95.9)	(91.7)	(1,378.7)	6.4	9.4
EV/IC (x)	8.6	4.7	6.7	5.8	5.5
FCFF yield (%)	(1.6)	(12.2)	(2.5)	11.4	12.3
FCFE yield (%)	(1.3)	(11.1)	(2.1)	10.8	10.3
Dividend yield (%)	0.0	0.0	0.0	0.0	0.0
DuPont-RoE split					
Net profit margin (%)	0.8	(3.0)	3.8	15.5	19.8
Total asset turnover (x)	0.4	0.4	0.7	2.5	1.2
Assets/Equity (x)	0.9	1.0	1.0	1.0	1.0
RoE (%)	**0.3**	**(1.1)**	**2.7**	**40.8**	**25.4**
DuPont-RoIC					
NOPLAT margin (%)	1.4	(8.9)	(0.5)	14.2	12.6
IC turnover (x)	0.0	0.0	0.0	0.0	0.0
RoIC (%)	**0.9**	**(5.5)**	**(0.5)**	**65.5**	**40.0**
Operating metrics					
Core NWC days	576.2	515.0	228.9	48.6	64.0
Total NWC days	**576.2**	**515.0**	**228.9**	**48.6**	**64.0**
Fixed asset turnover	0.7	0.8	1.3	5.4	3.2
Opex-to-revenue (%)	46.0	37.5	29.6	16.1	18.2

Source: Company, Emkay Research

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Ratings	Expected Return within the next 12-18 months.
BUY	>15% upside
ADD	5-15% upside
REDUCE	5% upside to 15% downside
SELL	<15% downside

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