

Harnessing its combat Zen

12 March 2025

Zen Technologies (ZEN IN) is an Intellectual Property (IP)-led defence company, making military simulators and counter drone systems. It is the undisputed leader in land-based simulators with a 90% share and is now foraying into naval simulators through new acquisitions. ZEN is set to leverage: 1) in-house R&D and IP-led asset light business model with high ROE, 2) large addressable market for core categories (simulators and anti-drones) and new segments (AI-led defence solutions), and 3) value unlocking through new acquisitions.

ZEN is currently trading at an attractive 21x one-year forward P/E, significantly lower than that for other private players, thus offering a good entry point. Initiate with **Buy** and a TP of INR 1,535, on 25x March FY27E P/E.

Simulators – ZEN's edge despite increasing competition: Demand is robust for the domestic simulator market, led by regulatory tailwinds such as the Simulation Framework, Indigenization Plan and the *Agnipath Yojana* (recruits youth for four-year service in armed forces). Also, as the simulators market is expected to reach INR 150bn by FY29, at a 20%+ CAGR through FY24-29 (source: ZEN), prospects are promising. ZEN is #1 in land-based simulators with FY24 market share at 90%, and the new acquisition should open up opportunities in naval simulators. ZEN enjoys high margin in this category due to own IP that contributes 25-40% to Bill of Materials and 80% outsourcing model.

CDS – Demand strong due to rising geopolitical flashpoints: During the Israel-Iran conflict, ~150 drones were fired. This parenthetical, along with various other geopolitical flashpoints, indicates heightened demand for counter drone systems (CDSs). So, expect the domestic CDS market to post a CAGR of 24% to INR 150bn in FY29 (source: ZEN). ZEN, with products such as *Vyom Kavach*, enjoys an edge in the CDS market. It also seeks to increase its export presence as its products are 20-25% cheaper than those of global OEMs.

Diversification play – AI defence solutions, drones, EW Systems, a potent blend: The domestic drone market may post a CAGR of 22% through FY25-29 to INR 20bn in FY29 (source: Ministry of Civil Aviation). ZEN has thus forayed into drones with 100% indigenization and on the wings of new acquisitions. It is diversifying into new areas of electronic warfare (EW) and AI-led defence solutions (market size: ~INR 80bn). ZEN seeks to grow its exports via a new tie-up in the US and through setting up a subsidiary there with a view to establish a dedicated supply chain to manufacture in that country.

Initiate with Buy; TP at INR 1,535: We initiate coverage on ZEN with a **Buy** and a TP of INR 1,535, based on 25x March FY27E P/E. The P/E is 10% discount to private defence industry P/E of 27x. ZEN is a private player and operates in the niche categories of simulators and counter drone systems.

ZEN is currently trading at an attractive 21x one-year forward P/E, significantly lower than that for other private players, which presents a good entry point. We expect an earnings CAGR of 60% through FY24-27E with an average ROE and ROCE of 42% each through FY25E-27E. Key risks to our call are delay in awarding of tenders and shift in defence budget allocation away from simulators.

Key Financials

YE March	FY23	FY24	FY25E	FY26E	FY27E
Revenue (INR mn)	2,188	4,399	8,686	12,890	17,939
YoY (%)	213.7	101.0	97.5	48.4	39.2
EBITDA (INR mn)	726	1,808	3,248	4,808	6,730
EBITDA margin (%)	33.2	41.1	37.4	37.3	37.5
Adj PAT (INR mn)	478	1,265	2,486	3,679	5,149
YoY (%)	1,546.9	164.9	96.5	48.0	40.0
Fully DEPS (INR)	6.0	15.1	29.6	43.8	61.3
RoE (%)	15.9	33.1	43.4	41.7	38.9
RoCE (%)	16.4	33.2	44.5	42.4	39.4
P/E (x)	54.6	63.5	32.3	21.9	15.6
EV/EBITDA (x)	33.7	43.6	24.3	16.1	11.0

Note: Pricing as on 11 March 2025; Source: Company, Elara Securities Estimate

Rating: **Buy**

Target Price: **INR 1,535**

Upside: **29%**

CMP: **INR 1,192**

As on 11 March 2025

Key data

Bloomberg	ZEN IN
Reuters Code	ZETE.NS
Shares outstanding (mn)	90
Market cap (INR bn/USD mn)	108/1233
Enterprise Value (INR bn/USD mn)	97/1115
Avg daily volume 3M (INR mn/USD mn)	1440/17
52 week high/low	2628/812
Free float (%)	51

Note: *as on 11 March 2025; Source: Bloomberg

Price chart



Source: Bloomberg

Shareholding (%)	Q4	Q1	Q2	Q3
	FY24	FY25	FY25	FY25
Promoter	55.1	55.1	51.3	49.1
% Pledge	-	-	-	-
FII	3.8	3.1	5.7	8.3
DII	3.3	3.4	8.1	9.0
Others	37.8	38.5	35.0	33.7

Source: BSE

Price performance (%)	3M	6M	12M
Nifty	(8.7)	(9.7)	0.7
Zen Technologies	(43.0)	(26.2)	30.2
NSE Mid-cap	(17.8)	(17.3)	0.0
NSE Small-cap	(23.3)	(21.3)	(2.1)

Harshit Kapadia

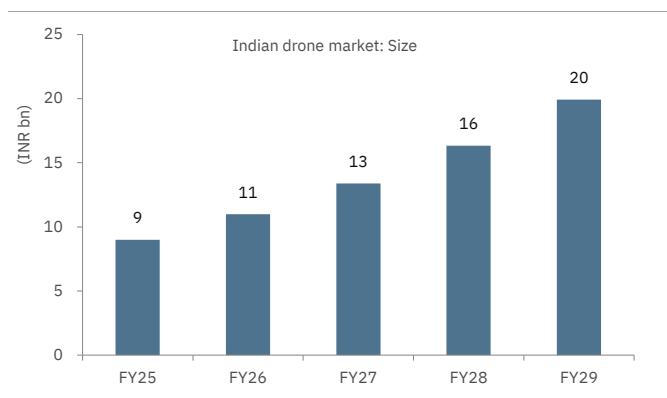
Capital Goods, Consumer Electronics
+91 22 6164 8542
harshit.kapadia@elaracapital.com

Associate
Nemish Sundar



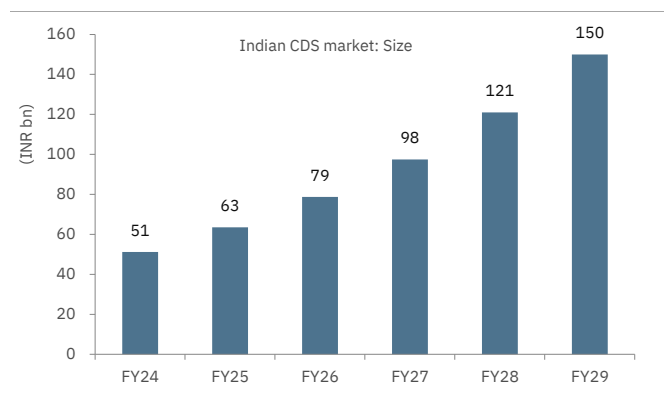
Story in charts

Exhibit 1: Indian Drone market to post a CAGR of 22% in FY25-29



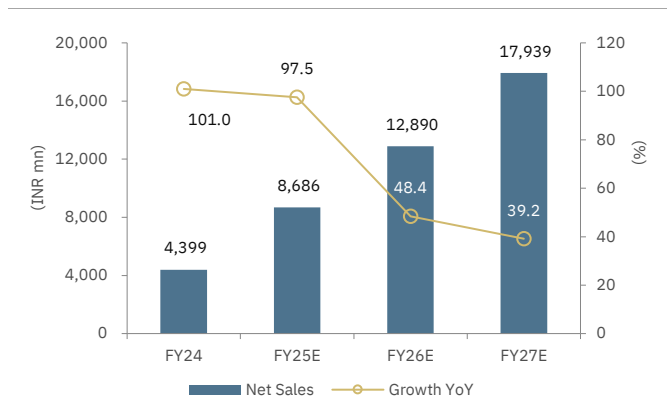
Source: Ministry of Civil Aviation, Elara Securities Research

Exhibit 2: Indian CDS market to post a 24% CAGR in FY24-29



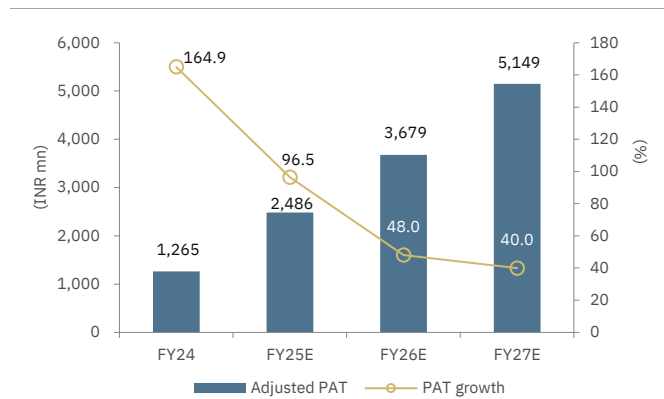
Source: Company, Elara Securities Research

Exhibit 3: Expect revenue CAGR of 60% through FY24-27E



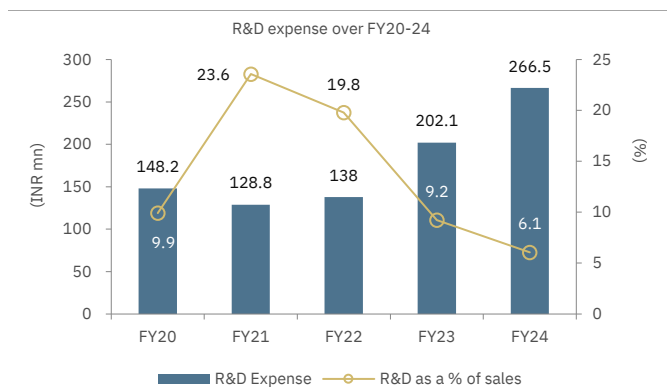
Note: Company, Elara Securities Estimate

Exhibit 4: Expect PAT CAGR of 60% through FY24-27E



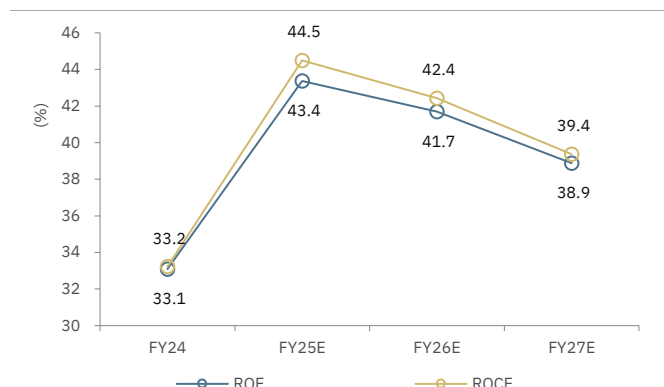
Source: Company, Elara Securities Estimate

Exhibit 5: R&D spend has grown at a 16% CAGR in FY20-24



Source: Company, Elara Securities Research

Exhibit 6: ROCE and ROE to improve 600bps each in FY24-27E



Source: Company, Elara Securities Estimate

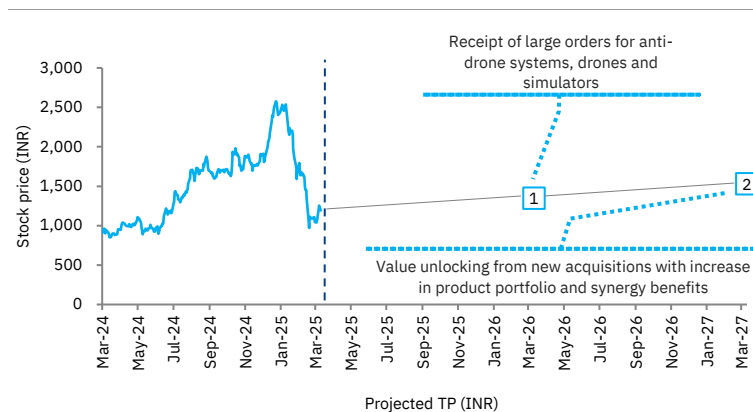
Investment Rationale

Large addressable market for core categories – simulators and counter drone systems – and market leadership in land-based simulators with a share of ~90%.

Potential for value-unlocking from new acquisitions and diversification into new categories – AI-led defence solutions and drones with large total addressable market (TAM).

Intellectual property and research & development-led asset light business model to lead to high ROCE and ROE of ~42% each through FY25-27E.

Valuation Triggers



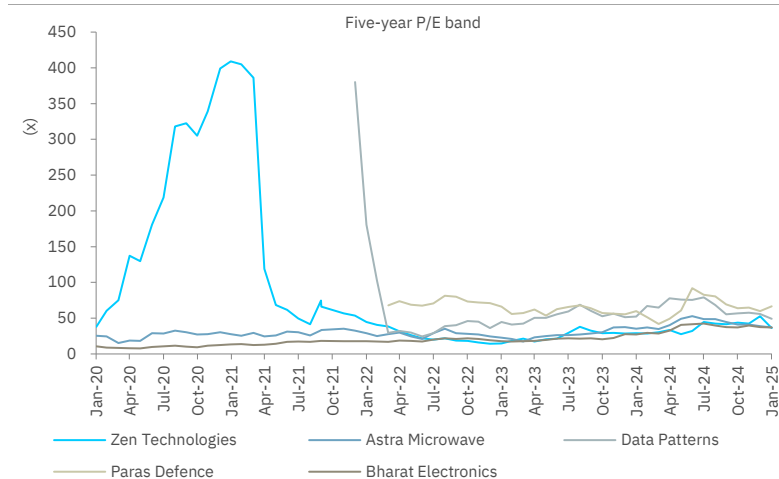
Valuation triggers

- ▶ Receipt of large orders for anti-drone systems, drones and simulators.
- ▶ Value unlocking from new acquisitions with increase in product portfolio and synergy benefits.

Our assumptions

- ▶ Expect revenue CAGR of 60% through FY24-27E
- ▶ Expect EBITDA CAGR of 55% through FY24-27E
- ▶ Expect PAT CAGR of 60% through FY24-27E

Valuation drivers: ZEN trading below five-year average industry P/E of 54x



Source: Bloomberg, Company, Elara Securities Research

Key risks (downside)

- ▶ Delay in awarding of tenders is a huge risk as government tenders form a major portion of ZEN's orderbook.
- ▶ Any shift in defence budget allocation by the government away from simulators.
- ▶ Sharp rise in commodity prices may impact profitability of fixed-price contracts.

Valuation overview

(INR)	
EPS – FY26E	43.8
EPS – FY27E	61.3
Five-year average P/E (x)	52
Target multiple (x)	25
March-27E EPS	61.3
Target price	1,535

Source: Elara Securities Estimate

Industry trends and macro factors

- ▶ The private sector's contribution to domestic defence production is gaining traction.
- ▶ The focus is more on indigenization, increase in defence production and exports due to increasing geopolitical tensions.

Market position and competitive landscape

- ▶ ZEN is the market leader in land-based simulators with strong presence in anti-drone systems.
- ▶ Competition is intensifying in both simulators and anti-drone systems from private companies and start-ups, DPSUs and global companies.

Financials (YE March)

Income Statement (INR mn)	FY23	FY24	FY25E	FY26E	FY27E
Revenue	2,188	4,399	8,686	12,890	17,939
EBITDA	726	1,808	3,248	4,808	6,730
EBITDA margin (%)	33.2	41.1	37.4	37.3	37.5
Add:- Non operating Income	72	149	336	403	463
Depreciation	61	97	162	193	209
EBIT	738	1,860	3,422	5,018	6,985
Less:- Interest Expenses	41	23	90	90	90
PBT	717	1,862	3,359	4,957	6,927
Less :- Taxes	218	566	846	1,249	1,746
PAT	500	1,295	2,512	3,708	5,181
Adj PAT	478	1,265	2,486	3,679	5,149
Balance Sheet (INR mn)	FY23	FY24	FY25E	FY26E	FY27E
Share Capital	80	84	84	84	84
Reserves	3,082	4,402	6,895	10,581	15,738
Net Worth	3,303	4,663	7,182	10,897	16,086
Loans	59	6	6	6	6
Net Deferred Tax Liability	(141)	62	62	62	62
Capital Employed	3,221	4,731	7,250	10,965	16,154
Gross Block	1,269	1,545	2,045	2,245	2,395
Less:- Accumulated Depreciation	517	611	773	966	1,175
Add:- Capital work in progress	19	109	109	109	109
Net Fixed Assets	772	1,042	1,381	1,388	1,329
Investments	22	0	0	0	0
Net Working Capital	754	2,107	4,466	6,385	8,477
Cash & Bank Balance	1,674	1,582	1,404	3,192	6,348
Application of Funds	3,221	4,731	7,250	10,965	16,154
Cash Flow Statement (INR mn)	FY23	FY24	FY25E	FY26E	FY27E
Cash Profit adjusted for non-cash items	757	1,981	3,610	5,240	7,225
Add/Less : Working Capital Changes	551	(1,518)	(2,827)	(2,482)	(2,767)
Operating Cash Flow before Tax	1,308	464	783	2,758	4,459
Tax	(144)	(330)	(330)	(330)	(330)
Operating Cash Flow	1,164	134	453	2,428	4,129
Less:- Capex	(157)	(298)	(500)	(200)	(150)
Free Cash Flow	1,007	(164)	(47)	2,228	3,979
Investing Cash Flow	120	(554)	-	-	-
CF from Fin. Activity	(219)	(33)	(110)	(112)	(114)
Net Change in Cash	908	(751)	(157)	2,116	3,865
Ratio Analysis	FY23	FY24	FY25E	FY26E	FY27E
Income Statement Ratios (%)					
Revenue growth	213.7	101.0	97.5	48.4	39.2
EBITDA growth	1485.4	149.0	79.7	48.0	40.0
PAT growth	1546.9	164.9	96.5	48.0	40.0
EBITDA margin	33.2	41.1	37.4	37.3	37.5
Net margin	21.8	28.8	28.6	28.5	28.7
Per Share data (INR/Share)					
Fully DEPS (INR)	6.0	15.1	29.6	43.8	61.3
DPS	0.1	1.2	0.2	0.3	0.3
Book value per share	39.8	53.4	83.1	127.0	188.4
Payout (incl. Div. Tax) (%)	1.7	8.0	0.8	0.6	0.5
Dividend yield (%)	0.0	0.1	0.0	0.0	0.0
Valuation (x)					
P/E (x)	54.6	63.5	32.3	21.9	15.6
EV/EBITDA (x)	33.7	43.6	24.3	16.1	11.0
EV/Sales	11.2	17.9	9.1	6.0	4.1
Price/Book value	8.2	17.9	11.5	7.5	5.1
Return and Liquidity Ratios					
Net debt/Equity (x)	(0.5)	(0.3)	(0.2)	(0.3)	(0.4)
RoE (%)	15.9	33.1	43.4	41.7	38.9
RoCE (%)	16.4	33.2	44.5	42.4	39.4

Expect revenue CAGR of 60% through FY24-27E

Expect an earnings CAGR of 60% through FY24-27E

Note: Pricing as on 11 March 2025; Source: Company, Elara Securities Estimate

Harnessing its combat Zen

- ▶ Simulators – ZEN's edge despite increasing competition
- ▶ CDS – Demand strong due to rising geopolitical flashpoints
- ▶ Diversification play – AI defence solutions, drones, EW systems, a potent blend

Simulators – ZEN's edge despite increasing competition

Simulators to morph into an INR 150bn industry through FY24-29

Expect India's simulation training equipment industry to be worth INR 150bn by FY29, at a 20%+ CAGR through FY24-29 (source: ZEN). ZEN's addressable market through FY24-29 is estimated at INR 150bn as it increases the scope of its services for all three armed forces from its current expertise in land-based simulators (order backlog worth INR 7.9bn as of March 2024).

Favorable shift in government policy

Regulatory tailwinds propelling demand

In the past few years, various regulatory actions have sought to promote defence indigenization and 'Buy and Make in India'. Also, the government has taken many steps to promote the use of simulators to cut training cost, equipment 'wear and tear' and increase the efficiency of training through various AI- and AR-based simulator technologies. Some schemes benefiting the simulators industry are:

- ▶ **DPP 2016 and DAP 2020:** These policies ensure the highest degree of probity, public accountability, transparency, fair competition and level-playing field. In addition, self-reliance in defence equipment production and acquisition were key policy aims. The policy prioritized 'Buy (Indian: IDDM) – Indigenously designed, developed and manufactured category, followed by 'Buy (Indian)', 'Buy and Make (Indian)', 'Buy and Make', and 'Buy (Global)' in the same order.

The policy sought to offer domestic companies a level-playing field. **DAP 2020** empowers the Indian domestic industry through 'Make in India' initiative and has laid down a strict order of preference for procurement. It has adequately included provisions to encourage FDI to establish a manufacturing hub for both import substitution and exports while protecting the interests of Indian industries.

- ▶ **Simulation Framework:** In September 2021, the Ministry of Defence (MoD) promulgated the framework to enhance and synergise use of simulators by the three services and the Indian Coast Guard (ICG). The overarching vision was to shift to simulation-based training across all the military domains. The policy will apply to all types of simulators in use/to be procured by the armed forces. Avenues of application will be constantly explored to achieve a high level of operations preparedness while reducing the expenditure on training and preserving the life of the equipment.
- ▶ **Agnipath Pravesh Yojana:** In June 2022, the cabinet approved the *Agnipath Pravesh Yojana*, per which the youth will enrol and serve in the army for a period of four years. Use of simulators would help speed up the training process and ensure that the maximum number is trained. The period of service is low, necessitating an efficient and effective training.
- ▶ **PIL:** The Department of Defence Production has published five positive indigenization lists (PIL) as of June 2024, totalling 5,011 items, comprising Line Replacement Units/Systems/Sub-systems/Assemblies/Sub-assemblies/Spares & Components and raw material. The total import substitution value of these items amounts to INR 44.5bn. Within these lists, 16 simulators have been identified, which would be procured indigenously through December 2020 to December 2028.

India's simulators market to reach INR 150bn by FY29 at a 20%+ CAGR

DAP 2020 and DPP 2016, Simulation Framework, Agnipath Yojana and PIL driving demand

ZEN had a 90% share in land-based simulators as of March 2024

Acquisition of ARIPL to open up opportunities in naval simulators

Simulators – ZEN's distinct strength

#1: Rich experience – 155+ patents, a portfolio of 42 products

ZEN has an experience of >30 years in the simulators industry and is currently the leader in land-based training simulators with >90% market share as of March 2024. It has 155+ patents in the training systems with a portfolio spanning 42 products to cater to the Indian armed forces. The company had supplied >1,000+ training systems globally as of March 2023.

ZEN's simulation portfolio comprises: 1) live ranges, 2) live simulation, 3) virtual and constructive simulations and 4) operational equipment. As per a study conducted by The Economic Resources Institute (TERI), the adoption of crew gunnery simulators could lead to potential savings of INR 3.8bn through 30 years while also preventing significant Carbon Dioxide emissions. Also, the use of tank simulators results in significant savings due to prevention of wear and tear, savings in fuel costs etc.

#2: Sustaining leadership in the face of increasing competition, led by cost effectiveness

In the past years, ZEN has remained the preferred player when it comes to supplying simulators. It closely works with the armed forces to develop simulators as per requirement and has obtained the necessary approvals and certifications to supply the highest-quality products. It has been able to surpass peers through extensive focus on R&D and innovation.

The simulator market is now witnessing a rise in competition from existing defence players and new start-ups. However, ZEN should remain the market leader, enjoying a dominant market position despite intensifying competition, due to its long-standing relationship with the Indian Army, and strong prowess in R&D and patents.

Bharat Electronics is the only competitor in the listed space. However, various private companies and start-ups such as Tecknotrove, Delta Conflict Kinetics, Navyug Info Solutions Pvt. etc are venturing into the space. In the global market, various MNCs such as SAAB, Rheinmetall and Lockheed Martin are present. However, ZEN's products are 25-30% cheaper than comparative products in the domestic market, yielding it an edge in exports.

#3: Branching into naval simulators

ZEN has recently acquired a 100% stake in Applied Research International Pvt. (ARIPL) and ARI Labs Pvt. (ALPL) that specialize in simulators and assessment tools for marine, offshore, naval, ports and terminals, construction and mining industries along with offering e-governance solutions to the Directorate General of Shipping in India.

The acquisition opens up new opportunities for ZEN in the marine and naval simulators market and enhances its ambit from land-based simulators to marine. Although ARI's current orderbook is small, the company expects to double and triple this very soon as it integrates its existing systems and capabilities with the newly-acquired company and starts developing its product suite.

Global adoption of simulators rising

The global military simulation and training market is projected to reach ~USD 22bn by 2033 at a CAGR of 5% over FY23-33 (source: ZEN). As per the management, the importance of simulators is being realized globally, with many countries investing heavily in manufacturing and integration of simulator-based training.

The United States Department of Defence is focusing on AR and VR technologies to enhance soldier readiness. **Asia Pacific** is expected to be the fastest-growing market for simulators, led by growing investments by **China, Japan and South Korea**.

Simulators – Attributes and benefits

The Simulators category comprises a combination of equipment, controlled environments and specially developed modules. These are used to recreate or imitate scenarios, so as to help users learn, train and equip themselves to meet real-life situations.

Simulators – Key benefits

- ▶ **Integration of cutting edge technology for training:** The simulators have various state-of-the-art technological applications integrated – Augmented and virtual reality and artificial intelligence based solutions that provide a highly immersive and realistic training environment, offering diverse scenarios and battle conditions.
- ▶ **Cost efficient alternative:** Simulators are more cost efficient than live trainings as these reduce expenses such as use of arms and ammunition, travelling, equipment wear and tear etc. Comparatively, simulators only have the initial cost of purchase and Annual Maintenance Contract (AMC) expenses.
- ▶ **Flexibility:** Simulators offer access to different terrains, battle scenarios and tactical conditions at a single location. These also have the ability to train multiple groups at a single time. This helps reduce the training time for new personnel and increase the efficiency of training.
- ▶ **Environmental and safety benefits:** Use of simulators helps reduce the environmental impact of live training (pollution through utilization of ammunition and heavy machinery). This helps mitigate the casualties and injuries involved in live training.

Domestic CDS market to post a CAGR of 24% to INR 150bn in FY29

ZEN expects robust demand for its Vyom Kavach in CDS space

CDS – Demand strong due to rising geopolitical flashpoints

The counter drone systems (CDS) industry is witnessing a surge in demand, led by escalating geopolitical flashpoints. The recent drone attacks on Israel, and the Russia-Ukraine conflict have shown that drones will now be a primary means of attack and infiltration, thus necessitating an effective means to counter these. As a note of interest, >150 drones were launched by Iran on Israel during the conflict. Resultantly, two types of technologies have been developed to counter the drone systems per the type of drone (soft kill and hard kill systems).

Soft kill systems are primarily used to capture the drone, and retrieve it safely, using various methods such as hacking the software, capturing the drone, jamming the signal etc. Hard kill, on the other hand, is used to kill and completely neutralize the drone.

Exhibit 3: Global counter drone systems – Countermeasures and key players

Equipment	Use	Soft kill/ hard kill	Major players
RF jammers	Transmits large RF energy towards the drone, masking the controller signal.	Soft kill	TRD Systems PTE, HP Wust
GPS spoofers	Sends a new signal to the target drone, which replaces the communication signal.	Soft kill	Regulus
High power microwave devices	Generates an electromagnetic pulse capable of disrupting electronic devices.	Soft kill	Diehl Defence
Nets and net guns	Fires a net at a drone, prohibiting the rotor blades.	Soft kill	Fortem Technologies, OpenWorks Engineering
High energy lasers	Fires a focused laser that destroys the drone.	Hard kill	Lockheed Martin, Raytheon
Cyber takeover systems	Sends a signal to hack the drone, assume control and direct it to land safely.	Soft kill	D-Fend Solutions

Source: Robin Radar Systems, Elara Securities Research

ZEN expanding its CDS portfolio rapidly

ZEN is rapidly expanding its product portfolio in the CDS segment in both soft kill and hard kill systems. The company currently caters mainly to the soft kill market, with offerings including detectors, jammers, radars, cameras and command and control systems. ZEN has acquired certain products through the acquisition of Unistring Tech Solutions Pvt. that designs and develops electronic warfare (EW) communication and radar applications. ZEN is now moving towards hard kill systems, and is expecting to scale this up soon.

Vyom Kavach Shield: At the Aero India 2025 Defence Exhibition, ZEN unveiled its new product, *Vyom Kavach Shield in the Sky*, which is one of the most advanced anti-drone systems globally. The product offers **four layers** of protection. The **first layer** is a software soft kill or jamming soft kill – Software signals are sent to disable ground communication and deny GPS. If the drone is able to evade this layer, the **second layer** of defence, the Kamikaze drones, are deployed to kill the drone. ZEN has designed its Kamikaze drones in such a way that its own drones are not hit but enemy drones are destroyed. In the **third layer**, *Vyom Kavach Shield* uses third-party missiles (integrated into the shield). The **fourth layer** involves an actual weapon such as the *Gatling Gun, a 20mm gun, or a 12.7mm cannon or even the L70 air defence*, which can be integrated into the system as a last resort.

ZEN is expecting robust demand for its *Vyom Kavach*. The *Kavach* is one of its kind and has extensive capabilities against the drones, with particular expertise in taking out swarm drones.

Anti-drone market – Competition Rising but ZEN positioned well

The anti-drone systems industry is witnessing an increase in new entrants and global players seeking to enter India due to growing demand. In India, various companies such as Bharat Electronics, Paras Defence and Adani Defence and many start-ups such as Big Bang Boom Solutions, Alpha Design Technologies and Jataayu Aerospace etc. are present in both soft kill and hard kill segments.

ZEN, however, is well set given its own R&D-led IPs and introduction of new innovative products such as *Vyom Kavach*. Also, due to its long-standing relationship with the armed forces and thus, better understanding of the requirement, ZEN is able to develop products that are equipped to clear the evaluation stage (only some players are able to do), and is thus winning the tenders.

ZEN is now foraying into drones with a 100% indigenization rate

India's drone market is expected to grow at a 22% CAGR to INR 20bn by FY29.

In the global space, large companies such as DroneShield, Thales, Lockheed Martin, Saab, Israel Aerospace (IAI) etc. are leading the market. ZEN's products are 20-25% cheaper than the products of global players, and hence, it is looking to expand its export presence. Currently, ~50% of ZEN's orderbook comprises anti-drone systems, which mainly consists of export orders.

From anti-drones to drone manufacturing

ZEN has now announced its decision to enter drone manufacturing, thus diversifying from being an anti-drone systems player. As per the management, many drone manufacturers in India are using Chinese components. This increases the possibility of hacking while operating near the borders. So, ZEN now seeks to make drones leveraging 100% indigenization, with major components being manufactured in-house.

ZEN has also acquired a 51% stake in Andhra Pradesh-based Vector Technics, a leading provider of propulsion and power distribution solutions for drones and unmanned aerial vehicles (UAVs). Vector will continue to cater to the drone ecosystem in India by offering its components, while ZEN has indicated that it mulling another acquisition to deepen its foothold in drone manufacturing.

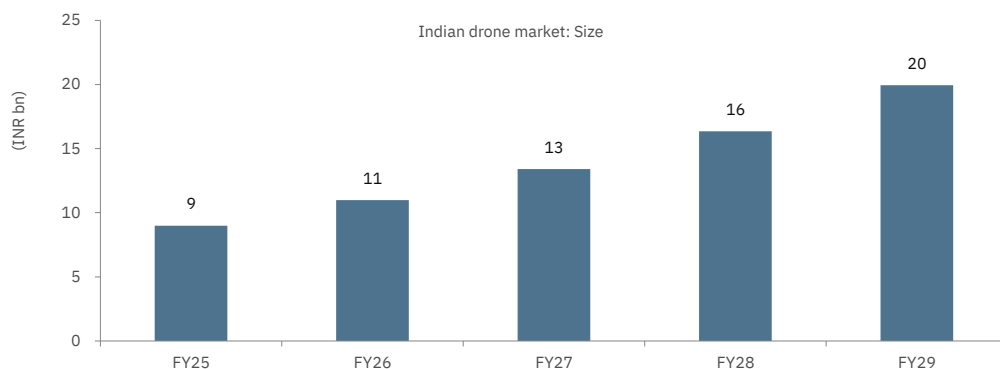
Indian drone market witnessing robust growth

The drone technology has emerged as a game-changer in modern warfare and security scenarios. India's drone manufacturing industry is expected to jump to INR 9bn in CY25 from INR 600mn in FY21, as per the Ministry of Civil Aviation. This is further expected to grow at a CAGR of 22% through 2025-30. Even as the global drone industry gains currency, so has the number of attacks and incursions into the Indian territory in the past four years, indicating a shift in warfare tactics.

The first-ever reported drone attack on a defence establishment was that on an Indian Air Force Station at Jammu (the drone had dropped two explosives).

As notes of interest, statistically, India's Border Security Force (BSF) has shot down / intercepted 125 drones through H1CY24, 107 drones in CY23 and 22 drones in CY22 (along the border that the Indian state of Punjab shares with Pakistan).

Exhibit 4: Indian drone market to post a CAGR of 22% through FY25-29



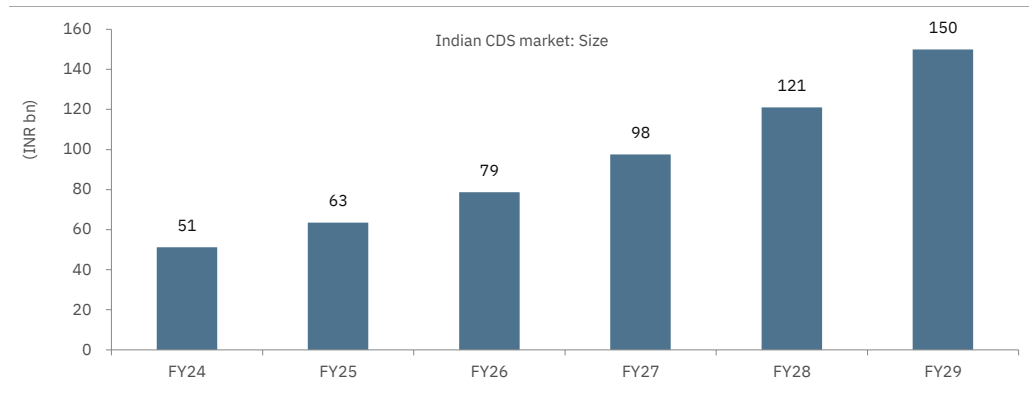
Source: Ministry of Civil Aviation, Elara Securities Research

Counter-drone industry to grow at a 24% CAGR through FY24-29

To avert such drone incursions, there is an urgent and growing demand for effective counter-drone technologies to protect important strategic assets such as military bases, refineries, airports, and other critical infrastructure.

As a note of interest, India has ~15,106kms of land border and a coastline of ~7,516kms, including island territories, as per the Ministry of Home Affairs. Considering the Counter Unmanned Aerial System (CUAS) range of 5-10kms, the CDS industry in India is estimated to be INR 150-200bn in the next 3-5 years, at a CAGR of 24% through FY24-29, (source: ZEN).

Exhibit 5: Indian CDS market to post a 24% CAGR through FY24-29



Source: Company, Elara Securities Research

Market size for AI-based products estimated at INR 80bn in the next 3-5 years

ZEN acquired a 45% stake in Bhairav Robotics to up its product offerings in AI and robotic solutions

Diversification play: AI defence solutions, drones, EW system, apt mix

Four new AI-based defence products introduced

ZEN recently launched four new products in collaboration with its subsidiary, AI Turing Technologies. These are AI-led defence products designed via own IPs, and catering to global demand.

- ▶ **ADS camera (Hawkeye):** This is an anti-drone system camera with multiple sensor detection modules for all-weather drone tracking up to 15kms.
- ▶ **Ultralight Remote Controlled Weapon System (Barbarik URCWS):** This is the world's lightest remote controlled weapon station, with precise targeting capabilities for ground vehicles and naval vessels. It has undergone successful firing trials.
- ▶ **Robodog (Prahasta):** This is an automated quadrupled that uses LIDAR and reinforcement learning to create real-time 3D terrain mapping for mission planning, navigation and threat assessment. It can be used as the first line of defence for commandos during Counter Insurgency operations such as 26/11, thus saving lives.
- ▶ **Stihir Stab 640:** This is a rugged stabilized sight mainly for armored vehicles, ICVs, and boats. The sight provides exceptional situational awareness with automatic search and tracking capabilities.

The market size for these AI-based products has been estimated at INR 80bn in the next 3-5 years, as per the management, with robust demand expected from both domestic and international markets due to the uniqueness and utilization of these offerings.

ZEN has recently acquired a 45% stake in Bhairav Robotics that may help it increase its product offerings in the AI and robotic solutions space.

Foray into minefield reconnaissance, led by new patent

ZEN has recently received a patent for Mine Detection Systems, thus potentially foraying into the field of minefield reconnaissance. The Mine Detection System incorporates GPS/ GIS technology to plot and record coordinates of mines in its memory. This ensures safe retrieval of mines. This system can also work in varying altitudes up to 15,000feet above the sea level, at temperatures ranging from -25 to 45 degrees (Celsius), and even during night.

EW, drones entry through acquisition

Zen looks to foray into EW systems to increase its product portfolio similar to other players like Bharat Electronics. The company looks to tap into this market through acquisition of an existing company with a robust product portfolio and strong visibility.

The company has also announced manufacturing of drones with 100% indigenization rate as mentioned earlier which will be supported by new acquisitions. The company has already acquired Vector Technics which supplies components for the drone ecosystem, which will continue to do so.

ZEN outsources 80% of production, with IP content forming 25-40% of BOM

Currently, exports constitute ~35% of ZEN's orderbook

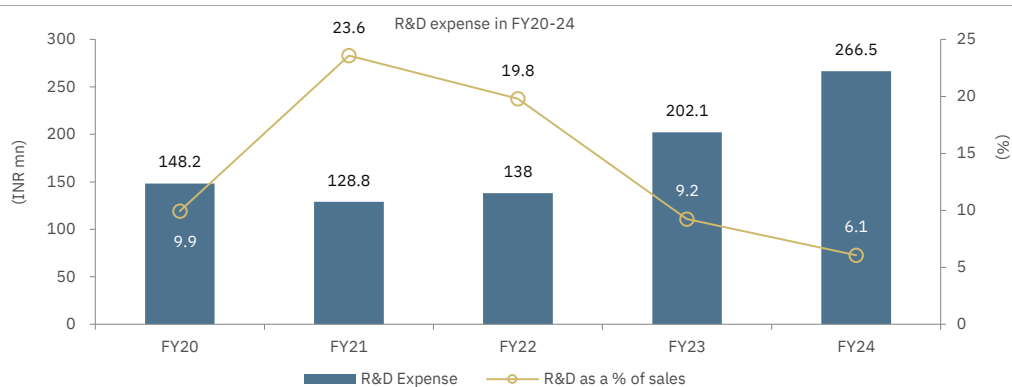
ZEN – R&D and IP moat sturdy

ZEN has an IP-driven asset light business model that helps it achieve superior ROCE and ROE compared with the industry. It completely owns the IP in contrast with various defence companies that are provided the IPs by Defence Research & Development Organization (DRDO) or receive the technology from foreign partners. As of FY24, ZEN had filed >155 patents, including 15 filed in FY24 alone. Of these, 75 have been granted so far.

ZEN mainly focuses on developing new IPs and patents rather than manufacturing. It outsources ~80% of its production. The IP content forms 25-40% of the bill of material, yielding high EBITDA margin and return on capital. ZEN outsources production but retains IPs, which is why its EBITDA margin is robust. As per ZEN, it has a lead time of ~2-3 years versus its competitors (that are mulling entering the segment) due to an extensive IP base and enduring relationship with the armed forces.

ZEN has consistently increased its absolute R&D spend in the past five years, from INR 148mn in FY20 to INR 266mn in FY24, at a 16% CAGR, spending a total of ~INR 1bn in the past five years. Further, ZEN intends to spend at least INR 300mn in FY25 on R&D to develop new technologies and grow its product portfolio. More than 30% of ZEN's workforce is dedicated to R&D.

Exhibit 6: R&D spend has grown at a 16% CAGR through FY20-24



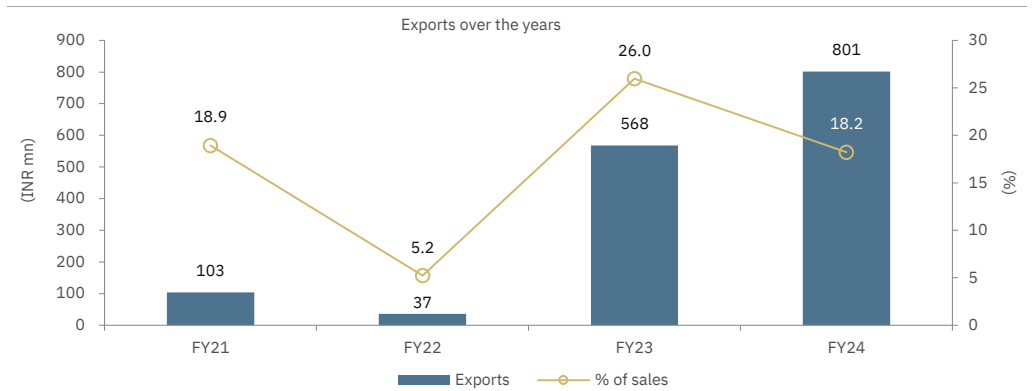
Source: Company, Elara Securities Research

Exports: Large opportunity

ZEN has grown its exports revenue at a CAGR of 98% through FY21-24 to INR 800mn in FY24, which formed 18% of revenue. Currently, exports constitute ~35% of ZEN's order book. It seeks to improve its export contribution to 25-30% given higher margin. Geopolitical conflicts have spiked the demand for ZEN's product categories, which augurs well. Also, due to ZEN's products being 20-30% cheaper in both anti-drones and simulators, it is able to compete with large established defence players such as Lockheed Martin, Saab, Thales etc.

ZEN has recently entered into a strategic partnership with US-based AVT Simulation, a premier provider of customized training systems, to expand its presence in the US. AVT Simulation has >25 years of experience in simulation, and ZEN will utilize its partnership to grow its presence there, in line with the target to set up a dedicated supply chain and manufacturing presence in the US and thereafter, in NATO and Europe. It expects huge orders from FY27 from the US market.

Exhibit 7: Exports have grown at 98% CAGR through FY21-24

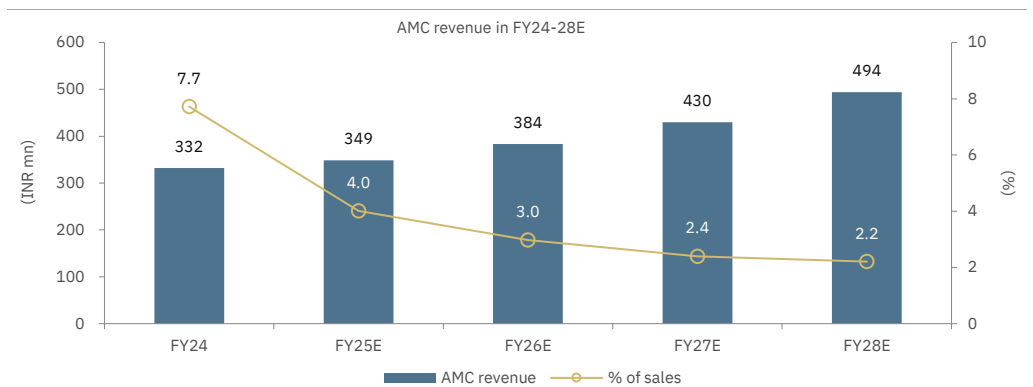


Source: Company, Elara Securities Research

AMC to ensure steady stream of revenue

ZEN's AMC business contributed ~8% to FY24 revenue, due to product sales growing at a stellar clip. It has grown its AMC business at a CAGR of 14% in FY20-24. ZEN is looking to scale up its AMC business to ensure a continued stream of revenue every year, as its product sales spike. We expect revenue from the AMC segment to grow at a CAGR of 10% in the next 4-5 years with greater visibility – Note that simulators require a periodic maintenance of >12-15 years to ensure operability. Increase in AMC contribution will prop overall margin given the margin-accretive nature of the segment.

Exhibit 8: AMC revenue to grow at a 10% CAGR in FY24-28E



Source: Company, Elara Securities Estimate

Expect revenue from AMC segment to grow at a CAGR of 10% in the next 4-5 years

Valuations and recommendation

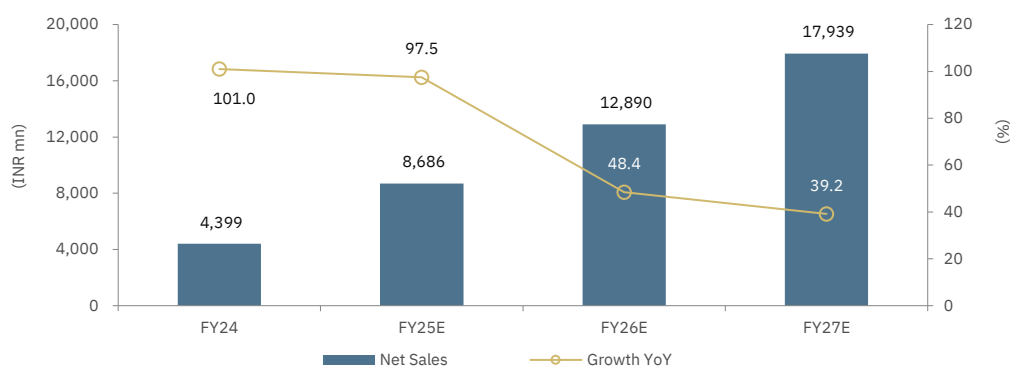
- ▶ Expect revenue to surge at a 60% CAGR through FY24-27E
- ▶ Initiate Buy with a TP of 1,535, implying a 29% upside
- ▶ Key risks – Delayed awarding of orders, shift in defence budget allocation away from simulators

Expect revenue CAGR of 60% through FY24-27E

We expect a revenue CAGR of 60% through FY24-27E to INR 18bn in FY27E. Revenue growth should be led by: 1) a rise in defence budgetary allocation and spending, 2) growing geopolitical flashpoints, resulting in focus on drones and counter-drone systems, 3) foray into new AI-based defence solutions and other IP related products with rising demand and 4) leveraging its R&D capabilities and vast IP portfolio to further develop new products.

Through FY20-23, ZEN posted a sales CAGR of 14%, with sales declining in FY21-22 due to the pandemic and slowdown in simulator orders.

Exhibit 9: Expect revenue CAGR of 60% through FY24-27E

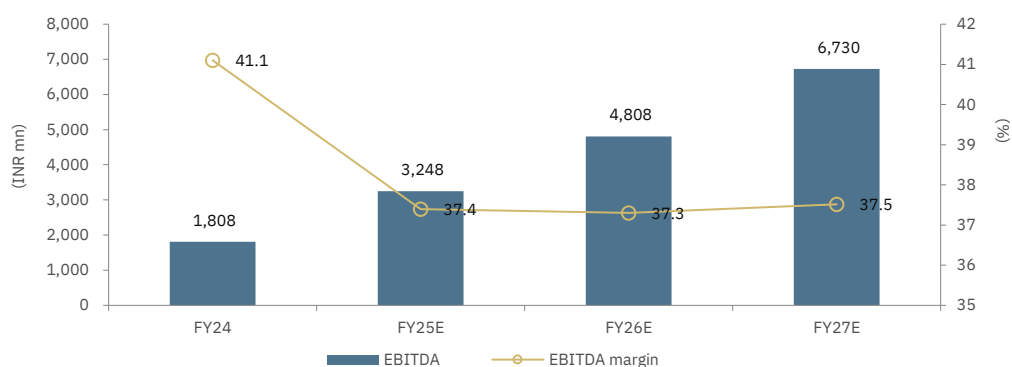


Source: Company, Elara Securities Estimate

Expect EBITDA CAGR of 55% through FY24-27E

In FY24, ZEN's EBITDA margin reverted to pre-pandemic levels, led by stabilization in raw material prices, robust orderbook and focused execution. However, expect margin to contract by 360bps through FY24-27E due to a change in mix as contribution from lower-margin anti drone systems (versus simulators) should spike. However, absolute EBITDA may rise at a 55% CAGR over the same period, led by higher sales, operating leverage and cost optimization initiatives.

Exhibit 10: Expect EBITDA margin to contract 360bps through FY24-27E



Source: Company, Elara Securities Estimate

Revenue growth to be led by rise in defence budgetary allocation and spending

Absolute EBITDA may rise at a 55% CAGR in FY24-27E, led by higher sales, operating leverage and cost optimization initiatives

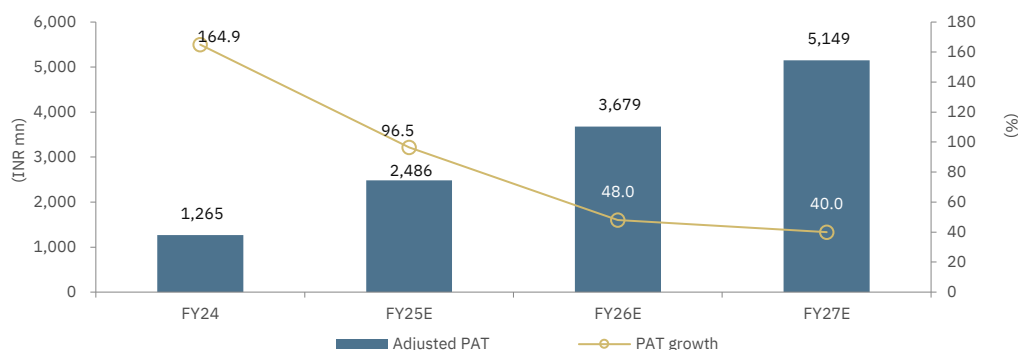
PAT growth to be led by scale-up in demand, growing contribution from service business, higher other income

Cost optimization to drive ROCE and ROE

Expect PAT CAGR of 60% through FY24-27E

ZEN's PAT declined at a CAGR of 6% through FY20-23, due to a sharp rise in raw material prices, lower sales growth and continued increase in employee cost and other expenses. We expect a PAT CAGR of 60% through FY24-27E, largely led by scale-up in demand (leading to operating leverage benefits), growing contribution from service business and higher other income.

Exhibit 11: Expect earnings CAGR of 60% through FY24-27E

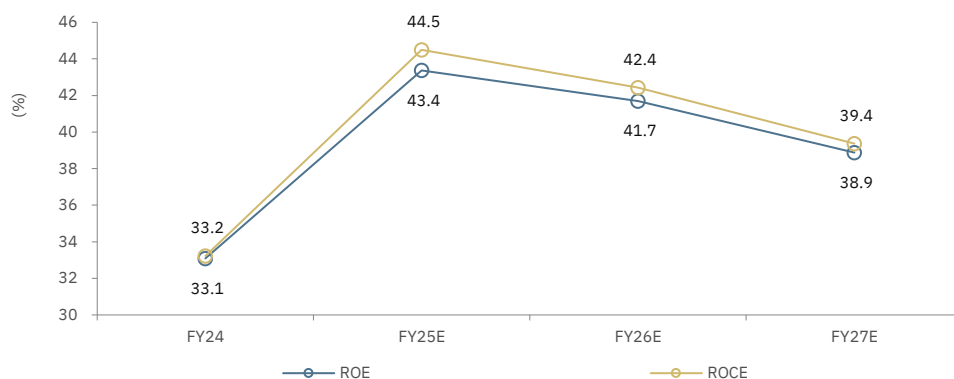


Source: Company, Elara Securities Estimate

ROCE and ROE to further improve

Due to its asset light model and as a significant portion of manufacturing being outsourced, ZEN witnessed a robust ROE and ROCE of 33% each in FY24. We expect further growth through FY24-27E of ~600bps each, led by cost optimization and higher contribution from exports and service business, which is more margin-accretive.

Exhibit 12: Expect ROE and ROCE to improve by 600bps each through FY24-27E



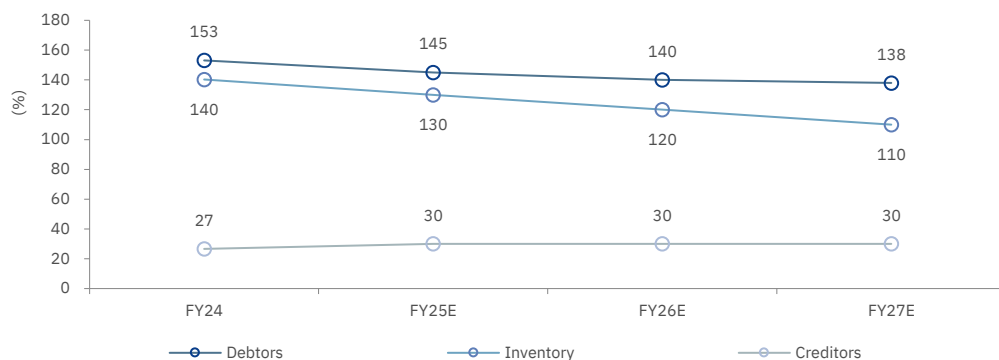
Source: Company, Elara Securities Estimate

Optimization of working capital cycle

ZEN has witnessed a rise in working capital days in FY20-23 due to higher inventory and debtor days. However, driven by better term orders and growth of service segment, we expect working capital days to improve through FY24-27E to 218 days in FY27E from 267 days in FY24.

ZEN's asset light business model does not require too much capex infusion for growth

Exhibit 13: Working capital cycle to improve through FY24-27E

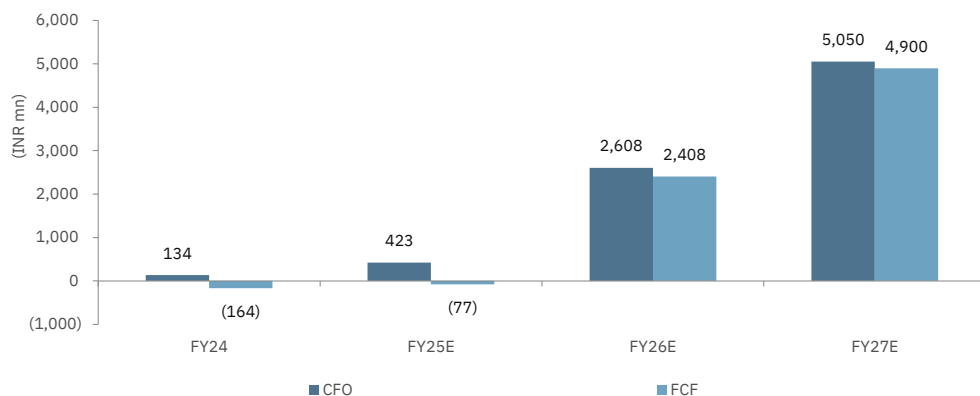


Source: Company, Elara Securities Estimate

CFO spikes 37x through FY24-27E due to low capex model

We expect ZEN to post 'cashflow from operation' CAGR at 235% through FY24-27E, led by robust expansion in orderbook and growth in profitability. Free cashflows should grow from negative INR 164mn in FY24 to INR 4.9bn in FY27E as ZEN's asset light business model does not require too much capex infusion for growth.

Exhibit 14: Expect CFO CAGR at 235% and FCF CAGR at 400% through FY24-27E



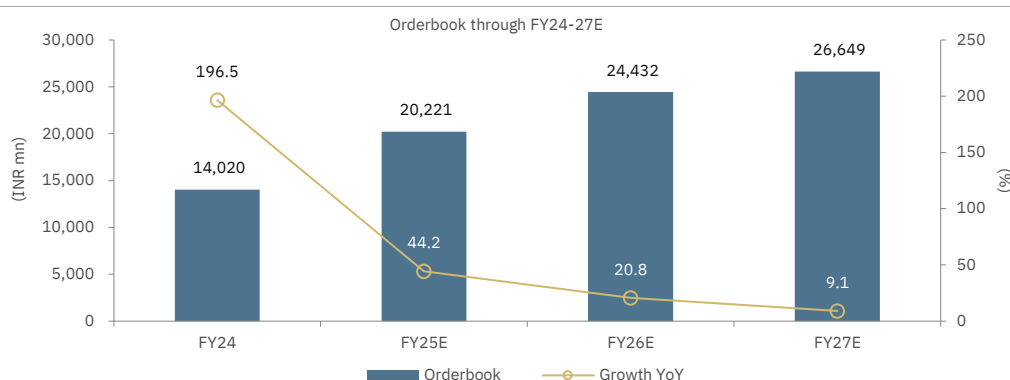
Source: Company, Elara Securities Estimate

Expect orderbook CAGR at 24% through FY24-27E

ZEN has witnessed strong orderbook expansion through FY21-24 at a 94% CAGR to INR 14bn in FY24, due to introduction of DAP 2020, Simulation Framework and growth in export orders given geopolitical tensions, especially for anti-drone systems.

We expect momentum in orderbook growth to continue led by robust demand for new AI-based products with huge TAM, foray into drones, large addressable opportunity for simulators and anti-drone systems and growing export presence. We expect an orderbook CAGR of 24% through FY24-27E to INR 26.6bn in FY27E. Equipment may constitute the majority share of the orderbook at ~90% while the balance would be formed by the AMC segment.

Exhibit 15: Expect orderbook to post a CAGR of 24% through FY24-27E



Source: Company, Elara Securities Estimate

Initiate Buy with a TP of 1,535, implying an upside of 29%

We initiate coverage on ZEN with **Buy** and a TP of INR 1,535, on 25x March FY27E P/E, which is 10% discount to private defence industry FY27 P/E of 27x (ZEN is a private player and operates in the niche categories of simulators and counter drone systems).

ZEN’s prospects are sure given: 1) R&D and IP-led asset light model, leading to high ROCE and ROE, 2) large addressable market for core categories of simulators and counter drones and for emerging categories such as AI defence products, and 3) potential for growth through value unlocking of its acquisitions in naval simulators, anti-drone systems and drones.

ZEN is currently trading at an attractive 21x one-year forward P/E, significantly lower than that of other private players – This offers a good entry point. We expect an earnings CAGR of 60% through FY24-27E, with an average ROE and ROCE of 42% each through FY25E-27E.

Note: We have not incorporated ZEN’s recent acquisitions into the financials and valuations due to small size. As of now, this does not significantly impact TP (no financial disclosures by ZEN regarding the acquisitions).

Exhibit 16: Valuations

(INR)	
EPS – FY26E	43.8
EPS – FY27E	61.3
Five-year average P/E (x)	52
Target multiple (x)	25
March-27E EPS	61.3
Target price	1,535

Source: Elara Securities Estimate

Exhibit 17: Peer valuations

Company	Ticker	Rating	Mcap				P/E (x)			EV/EBITDA (x)			P/BV (x)		
			(INR bn)	CMP (INR)	TP (INR)	Upside (%)	FY25E	FY26E	FY27E	FY25E	FY26E	FY27E	FY25E	FY26E	FY27E
Bharat Electronics	BHE IN	Buy	1,990	272	370	27	38.4	33.7	28.4	35.1	29	25.2	11.8	9.9	8.4
Zen Technologies	ZEN IN	Buy	108	1,192	1,535	29	32.3	21.9	15.6	24.3	16.1	11.0	11.5	7.5	5.1
Paras Defence*	PARAS IN	NR	37	922	NA	NA	61.4	51.2	41.9	41.8	33.5	26.9	6.9	6.3	5.5
Data Patterns*	DATAPATT IN	NR	91	1,624	NA	NA	41.7	33.6	28.8	32.4	25.5	20.2	5.9	5.0	4.2
Astra Microwave*	ASTM IN	NR	61	638	NA	NA	35.5	29.2	23.4	23.1	19	15.4	5.2	4.5	3.8

Note: NR=Not Rated; Pricing as on 11 March 2025; Source: Company, Elara Securities Estimate, Bloomberg estimates for Not Rated companies

Key risks (downside)

- ▶ Delay in order awarding is the biggest risk as a major portion of ZEN's orders is from government tenders.
- ▶ A shift in defence budget allocation away from simulators may hit ZEN.
- ▶ Economic slowdown in India or globally may push back orders domestically or for exports.
- ▶ A sharp rise in commodity prices may mar the profitability of contracts on fixed-price basis.

Company Description

Incorporated in 1993, Zen Technologies is a leading player in providing defence training solutions, drones and anti-drones solutions with a dominant market share of >95% in tank simulators. ZEN has a proven track record of >three decades in building training systems for imparting defence training and measuring combat readiness of the armed forces, security forces and para-military forces. ZEN uses indigenous designs, develops and makes sensors and simulator technology-based defence training systems. It makes land-based military training simulators, driving simulators, live range equipment and anti-drone systems. With a dedicated R&D facility, AI center (recognized by the Ministry of Science and Technology, Government of India) and production facility in Hyderabad, ZEN has applied for 150+ patents and shipped >1,000 training systems globally.

Board of Directors & Management

ZEN's eight-member Board of Directors is headed by Mr. Ashok Atluri, Chairman and MD. The company has four Executive Directors and four Independent Directors.

Member	Designation	Experience
Mr. Ashok Atluri	Chairman and Managing Director	Mr. Ashok Atluri is a first generation entrepreneur and visionary founder of ZEN and has an expertise in designing simulators. He holds a Post Graduate Diploma in Applied Computer Science. He was named the "Small Scale Entrepreneur of the Year" by the Hyderabad Management Association in 1998.
Mr. Kishore Dutt Atluri	Founder, President and Joint Managing Director	Mr. Kishore Dutt Atluri co-founded ZEN in 1993, with the primary objective of designing and developing training simulators for defence and security forces. He has >21 patents in his name and is in-charge of all defence marketing activities. He has deep insight in simulation technology and its application in defence and homeland security.
Mr. Ravi Kumar Midathala	Executive Director	Mr. Ravi Kumar Midathala has >20 years of experience in the software industry. He has expertise in systems programming and robotics and is actively involved in designing and developing the current range of simulators. In his role as Head, R&D division, ZEN has filed >110 patents.
Ms. Shilpa Choudhari	Executive Director	Ms. Shilpa Choudhari worked as a research associate and later as AGM, Sales and Marketing at ZEN. This yielded her an insight into ZEN's products. She holds a Bachelor's in Technology and a Master's in Finance and Foreign Trade.
Dr R K Tyagi	Independent Director	Dr R K Tyagi has >47 years of experience, including 15 years of experience in board level positions. He holds a Ph.D. (Doctorate in Management Studies) from Agra University and has completed his Engineering (Electronics & Communication) from IIT, Roorkee and an MBA (Marketing) from IGNOU, New Delhi. He has served as the Chairman of Hindustan Aeronautics and the Chairman and Managing Director of Pawan Hans Helicopters.
Dr Ajay Kumar Singh	Independent Director	Dr Ajay Kumar Singh has extensive experience in leadership, program planning and designing, implementing teaching, monitoring and evaluation, including business development and consulting. He completed his Post-Doctoral Fellowship in Social Marketing from ISB, Hyderabad and holds a Ph.D.
Mr Sanjay Vijay Singh Jesrani	Independent Director	Mr Sanjay Vijay Singh Jesrani joined ZEN's board in CY24. He is the Founder and CEO of Go North Ventures, which is a proprietary angel investment firm, focused on investing in and mentoring start-ups. Holds a Bachelor's in Commerce and is a Fellow Member of The Institute of Chartered Accountants of India (ICAI).
Ms. Sirisha Chintapalli	Independent Director	Ms. Sirisha Chintapalli has >11 years of exposure and experience in Legal, Finance, Secretarial, Insolvency and Regulatory Compliance streams. He has handled various issues / assignments / mergers and is well-versed with various statutes involved in the day-to-day operations of ZEN.

Source: Company, Elara Securities Research

Annexure I: Product portfolio

Exhibit 18: ZEN'S new anti-drone system, *Vyom Kavach* and another anti-drone system mounted on a truck



Source: Company, Elara Securities Research

Exhibit 19: Live ranges



Source: Company, Elara Securities Research

Exhibit 20: Virtual simulation



Source: Company, Elara Securities Research

Exhibit 21: Combat training center



Source: Company, Elara Securities Research

Exhibit 22: ZEN's new Kamikaze drones

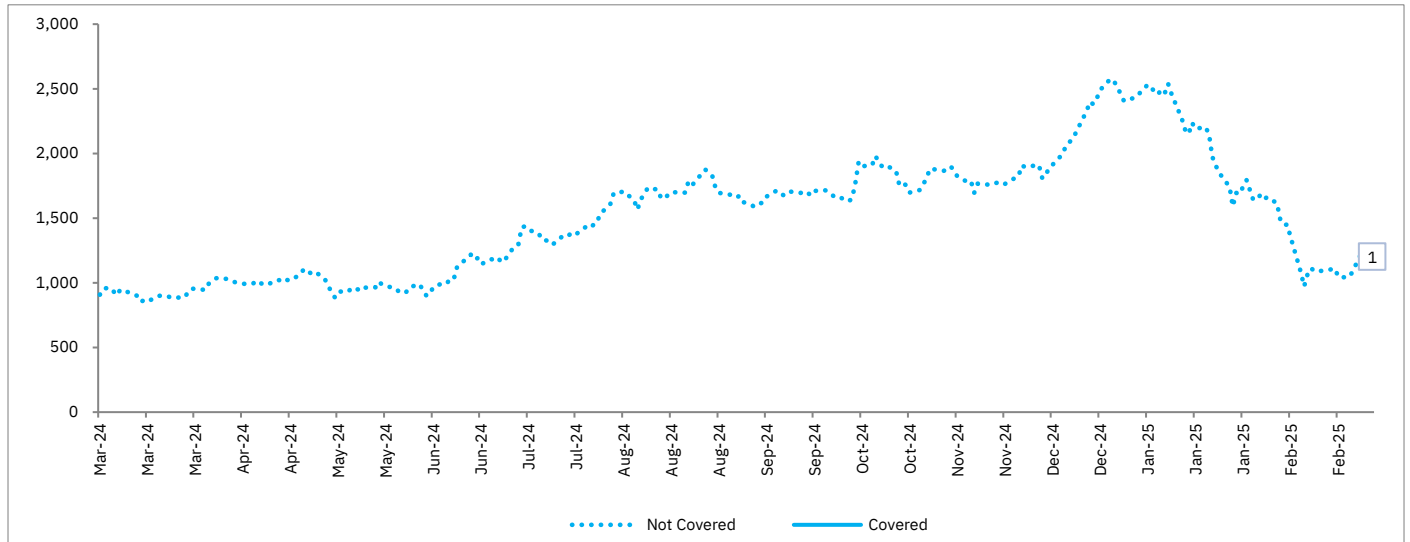


Source: Company, Elara Securities Research

Abbreviations

ADS	Anti-drone systems
AI	Artificial intelligence
ALPL	ARI Labs Pvt.
AMC	Annual maintenance contract
BSF	Border Security Force
ARIPL	Applied Research International Pvt.
CDS	Counter drone systems
CUAS	Counter Unmanned Aerial System
DAP	Defence Acquisition Procedure
DPP	Defence Procurement Procedure
DRDO	Defence Research & Development Organization
EW	Electronic warfare
IAF	Indian Air Force
ICG	Indian Coast Guard
IDDM:	Indigenously designed, developed and manufactured
IP	Intellectual property
ML	Machine learning
MoD	Ministry of Defence
PIL	Positive Indigenization List
R&D	Research and Development
TERI	The Economic Resources Institute
UAV	Unmanned Aerial Vehicle
UTS	Unistring Technology Solutions

Coverage History



	Date	Rating	Target Price	Closing Price
1	11-Mar-2025	Buy	INR 1,535	INR 1,192

Guide to Research Rating

BUY	Absolute Return >+20%
ACCUMULATE	Absolute Return +5% to +20%
REDUCE	Absolute Return -5% to +5%
SELL	Absolute Return < -5%

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India

Elara Securities (India) Private Limited
One International Center, Tower 3,
21st Floor, Senapati Bapat Marg,
Elphinstone Road (West)
Mumbai – 400 013, India
Tel : +91 22 6164 8500

Europe

Elara Capital Plc.
6th Floor, The Grove,
248A Marylebone Road,
London, NW1 6JZ,
United Kingdom
Tel : +44 20 7486 9733

USA

Elara Securities Inc.
230 Park Avenue, Suite 2415,
New York, NY 10169, USA
Tel: +1 212 430 5870
Fax: +1 212 208 2501

Asia / Pacific

Elara Capital (Asia) Pte.Ltd.
One Marina Boulevard,
Level 20,
Singapore 018989
Tel : +65 6978 4047



Managing Director

Harendra Kumar | harendra.kumar@elaracapital.com | +91 22 6164 8571



Head of Research

Dr Bino Pathiparampil | bino.pathiparampil@elaracapital.com | +91 22 6164 8572

Sales Team



India

Hitesh Danak - hitesh.danak@elaracapital.com - +91 22 6164 8543
Ashok Agarwal - ashok.agarwal@elaracapital.com - +91 22 6164 8558



India, APAC & Australia

Sudhanshu Rajpal - sudhanshu.rajpal@elaracapital.com - +91 22 6164 8508
Joshua Saldanha - joshua.saldanha@elaracapital.com - +91 22 6164 8541
Shraddha Shrikhande - shraddha.shrikhande@elaracapital.com - +91 22 6164 8567



India & UK

Prashin Lalvani - prashin.lalvani@elaracapital.com - +91 22 6164 8544



India & US

Karan Rathod - karan.rathod@elaracapital.com - +91 22 6164 8570



Corporate Access, Conference & Events

Anita Nazareth - anita.nazareth@elaracapital.com - +91 22 6164 8520
Tina D'souza - tina.dsouza@elaracapital.com - +91 22 6164 8595

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Elara Securities (India) Private Limited

Registered Office Address: One International Center, Tower 3, 21st Floor, Senapati Bapat Marg, Elphinstone Road (West) Mumbai – 400 013, India Tel : +91 22 6164 8500
CIN: U74992MH2007PTC172297 | SEBI Research Analyst Registration No.: INH000000933
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Investor Grievance Email ID: investor.grievances@elaracapital.com - Tel. +91 22 6164 8509
Compliance Officer: Mr. Anand Rao - Email ID: anand.rao@elaracapital.com - Tel. +91 22 6164 8509