



ZEN TECHNOLOGIES LIMITED being there...

25th Annual Report
2017-18

EXPANDING HORIZONS





EXPANDING HORIZONS

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AT Zen Technologies, we believe the words 'Expanding Horizons' neatly encapsulate our business direction and intent.

Because we are expanding our opportunity size even as the size of the global addressable market keeps growing.

Because we are expanding our footprint across a larger number of global markets.

Because we are increasing the proportion of annuity AMC revenues within our income mix.

Because we are targeting to grow our business in the US, the world's largest and most sophisticated market within our sector.

Because we are at the cusp of growing our order book, revenues, margins and profits, strengthening business sustainability.

Zen Technologies Limited, incorporated in 1993 and headquartered in Hyderabad, designs, develops manufactures world-class, state-of-the-art training simulators. Its mission is to provide quality products and services to its customers. Zen is at the forefront of applying new technologies and developing new products. It is actively involved in indigenisation of technologies, which are beneficial to Indian armed forces, state police forces and para-military forces. Zen's complement of products and services includes a variety of simulators, which find applications in the defence and homeland security sectors.

Vision

To be a leading global defence training solutions provider

Mission

To provide training solutions through innovative and cost effective solutions

9 things you need to know about Zen Technologies



1. Pioneer in Defence training solutions

Zen is a pioneer in the defence training solutions sector. Over the last 25 years, company has supplied over 1000 simulators to 100+ clients across the country. Owing to the rich experience Zen has aggregated over the years, the Company has emerged as dominant force within its industry.

2. R&D-driven company

Zen is a focussed R&D-driven organization employing over 90 in-house researchers with specialized knowledge. It continues to collaborate with leading technical universities to augment capabilities. Continuous large R&D investments have significantly shortened lead times in developing new simulators coupled with its proprietary and extensive data-bank of simulation modules. This continues to be the Company's key competitive edge.

3. Wide product range

Zen is in an enviable position to offer a range of training solutions that can be tailored as per the client's training needs. With over 40 simulators, ranging from the small arms training simulator to advanced tank firing simulators, Zen possesses the capability to address most defence and security training requirements.

4. Asset Light model

Zen continues to focus on value-added activities like R&D, intellectual property and client engagements. Zen has partnered with reputed vendors to manufacture as per the customer's requirements. This has allowed Zen to continue to scale its business in an asset-light way without commensurate capital expenditure in setting up large manufacturing facilities.

5. Net debt-free Balance Sheet

Zen has a strong net debt-free Balance Sheet, which enables it to continue investing for the long-term.

6. Strong governance

Zen complies with industry best practices to make itself an ideal long-term business partner for clients and suppliers while also attractively positioning itself among the best employers in the industry. Zen has a strong governance framework encompassing product quality, environmental compliance as well as information & security management.

7. Listed on NSE & BSE

Zen went public in 2000 and has since been a profit-making and dividend-paying company. Zen Technologies is listed on the BSE Limited (BSE) and the National Stock Exchange of India Limited (NSE). Its market capitalisation stood at Rs. 882 crore as on 31 March 2018.

8. Our products

Zen has been at the forefront of applying new technologies and developing new products and is actively involved in the indigenisation of technologies, which are helpful for security forces in India and other friendly countries.

Defence

- 81mm Mortar Integrated Simulator
- Zen Advanced Weapons Simulator (Zen AWeSim®)
- Air-to-Ground Firing Range Scoring System
- Zen Anti-Aircraft Air Defence Simulator (Zen 3ADS)
- Zen Anti-Tank Guided Missile Simulator (Zen ATGM® Sim)
- Zen Armour Combat Training System (ZEN ACTS™)
- Zen Artillery Forward Observers Simulator (Zen ArtyFOS)
- Zen Automatic Grenade Launcher Simulator (Zen AGL Sim)
- Zen Infantry Combat Vehicle Driving Simulator (Zen BMP II DS)
- Zen BMP II Integrated Missile Simulator (Zen BMP II IMS)
- Zen Carrier Mortar Tracked Simulator (Zen CMT Sim)
- Zen Combat Training Centre (Zen CTC)
- Zen Combat Training Simulation System (Zen CTSS)
- Zen Containerised Indoor Shooting Range (Zen CISR)
- Zen Containerised Tubular Shooting Range (Zen CTSR)
- Zen Driver Aptitude Testing System (ZEN DATS™)
- Zen Driving Training Simulator (ZEN DTS®)
- Zen Hand Grenade Simulator (Zen HE36S®)
- Zen Infantry Weapons Training Simulator (Zen IWTs®)
- Zen Master Control Station for Live-Firing Ranges (Zen MCS)
- Zen Medium Machine Gun Simulator (Zen MMG Sim)
- Zen Multi-Functional Target System (Zen MFTS®)
- Zen Robotic Targets
- Zen Rotary Wing Simulator (Zen RWS)
- Zen ShootEdge®
- Zen Shoot House for Live and Simulated Indoor Tactical Training
- Zen Small Arms Training Simulator - Stand Alone (Zen SATS® SL)
- Zen Smart Target System (ZEN STS®) - LOMAH®
- Zen Tactical Engagement Simulator (Zen TacSim®)
- Zen TacSim® with Indoor Tracking System (ITS)
- Tank Simulators
 - Tank targets
 - T72 Crew Gunnery Simulator
 - T72 Tank Driving Simulator
 - T72 Tank Gunnery Simulator
 - T90 Crew Gunnery Simulator
 - T90 Tank Driving Simulator
 - T90 Tank Gunnery Simulator
- Zen Tank Zeroing System (Zen TZS)
- Zen UAV Mission Simulator (Zen UAV Sim)
- Zen War Gaming Solutions (Zen WGS)

Homeland security

- Zen 81mm Mortar Integrated Simulator (Zen 81mm MIS)
- Zen Advanced Weapons Simulator (Zen AWeSim®)
- Zen Air-to-Ground Firing Range Scoring System
- Zen Artillery Forward Observers Simulator (Zen ArtyFOS)
- Zen Automatic Grenade Launcher Simulator (Zen AGL Sim)
- Zen Carrier Mortar Tracked Simulator (Zen CMT Sim)
- Zen Combat Training Centre (Zen CTC)
- Zen Containerised Indoor Shooting Range (Zen CISR)
- Zen Containerised Tubular Shooting Range (Zen CTSR)
- Zen Driver Aptitude Testing System (ZEN DATS™)
- Zen Driving Training Simulator (ZEN DTS®)
- Zen Hand Grenade Simulator (ZEN HE36S®)
- Zen Master Control Station for Live-Firing Ranges (Zen MCS)
- Zen Medium Machine Gun Simulator (Zen MMG Sim)
- Zen Multi-Functional Target System (Zen MFTS®)
- Zen Robotic Targets
- Zen Rotary Wing Simulator (Zen RWS)
- Zen ShootEdge®
- Zen Shoot House for Live and Simulated Indoor Tactical Training
- Zen Small Arms Training Simulator - SL (Zen SATS® SL)
- Zen Smart Target System (ZEN STS®) - LOMAH®
- Zen Tactical Engagement Simulator (Zen TacSim®)
- Zen TacSim® with Indoor Tracking System (ITS)
- Zen UAV Mission Simulator (Zen UAV Sim)

Driving

- Zen Automated Driving Simulator (ZEN ADS™)
- Zen Driving Simulator (Zen DS)
- Zen Bus Driving Simulator (Zen BusSim)
- Zen Driver Aptitude Testing System (ZEN DATS™)
- Zen Driving Training Simulator (ZEN DTS®)
- Zen Tatra Driving Simulator (Zen TDS)

9. Awards / Recognition

- 'Best Indigenous Products' at the 10th International Security Safety & Fire Exhibition, 2005 India Trade Promotion Organization.
- 'Excellence in Product Innovation (Small Scale Industry)' award from FAPCCI (The Federation of Andhra Pradesh Chambers of Commerce and Industry) for the year 2005-06.
- The Company's in-house R & D unit is recognized by Department of Scientific and Industrial Research, Ministry of Science and Technology, Government of India.
- All India Manufacturers' Organization (Andhra Pradesh State Board) had selected Zen Technologies Limited, Hyderabad for Bharat Ratna Dr. M. Visvesvaraya Industrial Award for "Best Technology Effort" for the year 2009.
- Zen Technologies was awarded 1st prize in the category of "Most Innovative / Indigenous Product" for "Portable Simulators" during the IISE -2009.

- Zen Technologies Limited had been awarded 'Certificate of Excellence' by Inc. India in 2010.
- Zen won the Best Innovative Product award at IISE 2014.
- Zen Technologies Ltd was adjudged as one of the top 25 Innovative Companies of the country by CII at the Innovation and Entrepreneurship Summit 2015.

The global defence sector in numbers

#1

US military ranking, globally



#4

Indian military ranking, globally

\$610^{bn}

US military spending, 2017



\$14^{bn}

Global military simulation and virtual training market value, 2017



\$20^{bn}

Global military simulation and virtual training market value, 2027 (e)

\$2107

Saudi Arabia's per-capita military expenditure, ranked 1st globally



\$24^{bn}

Global economic impact of terrorism, 2006



\$84^{bn}

Global economic impact of terrorism, 2016

2749

Global terrorism-related incidents, 2006



Milestones

1993

Zen Technologies was incorporated

1996

First sale of Zen SATS Simulator recorded

1998

Zen's R&D efforts were recognised by the Indian Government

2002

Launched the Advanced Weapons Simulator (AweSim)

2011

Launched the tank simulator

2012

Launched the UAV simulator

2013

Launched the IWTS, ACTS, TZS, MMG & AGL simulators

2015

Launched the flagship Zen Combat Training Centre Zen was listed on the National Stock Exchange of India Limited (NSE)

EXPANDING

\$63.9^{bn}

Indian military spending, 2017

\$1.4^{tn}

Global military spending, 2007



\$1.7^{tn}

Global military spending, 2017

\$1981

Israel's per-capita military expenditure, ranked 2nd globally



\$1879

US per-capita military expenditure, ranked 3rd globally



\$1873

Oman's per-capita military expenditure, ranked 4th globally

13,488

Global terrorism-related incidents, 2016

9,362

Fatalities from terrorism, 2006



34,676

Fatalities from terrorism, 2016

(e)- estimated

2004

Zen was listed on the Bombay Stock Exchange

2006

Launched the BMP driving and integrated missile simulator

2008

Launched live simulation

2009

Zen commissioned the Maheshwaram unit

H O R I Z O N S

2016

Launched the Containerised Tubular Shooting Range

2017

Won the largest export order (Rs. 64 cr)

2018

Commissioned new Technology Center in Kondapur, Hyderabad

25 years of Zen Technologies



Ashok Atluri, *Chairman and Managing Director*

Overview

India's Defence sector is passing through an inflection point that will favourably transform the prospects of those placed competitively to capitalise on this opportunity.

This is a seminal point for some good reasons: India is the largest importer of defence equipment in the world and any shift towards domestic weapon sourcing represents a sizable opportunity. India also finds itself in the middle of one of the most geo-politically unstable regions in the world, marked by hostile neighbours around and pockets of insurgency within.

With unpredictable threats like #CAATSA from USA hanging like Damocles' sword over India's defence procurement, there is a premium on the need for India to indigenise. We believe that these realities will lead to increased defence spending, strengthening prospects for the country's defence sector.

The decision of the Indian government in accelerating private sector participation in defence R&D and manufacturing, coupled with substantial sectoral investments, represent decisive first steps for the country's Defence sector. Even though orders from the Indian Government could continue to be lumpy, a decisive journey has indeed begun. Going ahead, the volume of Defence procurement from the private sector is likely to grow substantially, spread across a wider products range and centred around a deeper

The principal message that I wish to communicate is that Zen Technologies is attractively placed to capitalise on the sectoral watershed.



technology intensity. The stress on a growing proportion of indigenous content in systems/sub-systems being procured is heartening news for research-driven players like Zen who have focused on patient investments and allocation of a significant share of their revenues in the development of indigenous technologies.

The principal message that I wish to communicate is that Zen Technologies is attractively placed to capitalise on the sectoral watershed.

Positioning

Over the years, Zen selected to specialize in the security training solutions niche that is core to the security preparedness of any country – few meters wide but a miles-deep positioning, which is in contrast to the inch-deep and mile-wide strategy of other Defence players. In line with the Zen philosophy of less is more, the Company will continue to focus on training solutions unless a significant diversification opportunity presents itself. Following the application of AI techniques, including Adaptive Learning technologies in training solutions, we believe we are attractively placed to reinforce our sectoral leadership across the foreseeable future.

The result of a proactive

research-led investment approach is that Zen is among a handful of global companies that can provide holistic full-fledged cutting-edge solutions, based on Adaptive Learning, to security forces of various governments the world over.

Governance

Zen recognises that it is engaged in a business where its principal customer is the government; it is in the critical business of combat readiness against internal and external threats that a country might face; the effectiveness of its solutions helps protect the lives of millions.

Over the years, Zen has strengthened its corresponding seriousness warranted by this sensitive sector. The Company's seriousness is principally reflected in its governance commitment. Over the years, the Company strengthened its governance through a long-term outlook, focus on processes and systems as the basis of its working, placing a premium on customer confidentiality, strengthening the technocrat-driven environment with an extensive investment in recruitment and research, investing in the quality-enhancing practices of its eco-system, strengthening its Board of Directors, protecting the integrity of its Balance

Sheet and communicating its story comprehensively to stakeholders. We believe that this governance foundation is a showcase of our commitment to manage our business in a responsible and sustainable manner.

Customer value

Zen provides outstanding customer value by bringing to the table distinctive capabilities.

These capabilities have been reinforced by its presence in a niche within India's Defence sector for 25 years. The Company's distinctive track record has been manifested in a robust eco-system of knowledge, relationships, products complement and competitiveness.

Zen addresses the vast opportunity in this niche through a technology-driven Combat Training Centre solution that can be customised around specific customer needs. Zen provides solutions around the real needs of its customers, making it a dependable ally in addressing security challenges they face. Zen provides a range of holistic solutions for a range of Defence customers – Indian armed forces, state police forces and paramilitary forces as well as their counterparts in other friendly countries.



8 bn

Estimated size of the global addressable market (US\$).





20

The number of countries that the Company is engaged in.

Zen has focused on emerging opportunities from the field of training solutions for a quarter of a century, marketing customised training solutions and carving out a larger share of the client's wallet. The result of our prompt service, sustained improvements in installed products and continuous support provided through the product lifecycle is that, customers prefer to engage with us at every stage of their investment cycle, which is an unusual feature in a security space generally marked by short-term engagements.

Global market

In the past couple of years, the push provided by the Indian government has transformed the opportunity landscape for Zen. The Company is actively engaged in about 20 countries, the result of a comprehensive and responsive transformation in our marketing, positioning and communication capabilities. The vast potential of this reality should reflect in Zen winning export contracts across the foreseeable future. We are optimistic that these wins will provide the Company with the critical mass to showcase its credentials as a dependable global supplier of technology-

driven simulation solutions.

During the year under review, we strengthened our global business by incorporating a wholly-owned subsidiary in US and appointed a new CEO to reach prospective customers across the US and its friendly countries. Going ahead, Zen India will focus on the growing opportunities arising out of India, the Middle East, CIS and Africa. Besides, the Company will address small countries where solutions like combat training centres were out of reach for long. This will be achieved by providing superior technologies at a price point acceptable to customers. We are also looking at attractive financing options, including EXIM Bank, where the customer needs it. The Company will ride the growing global credibility of Indian Defence vendors following active government encouragement, potentially transforming the face of the sector.

Indian market

The growth of the Defence sector in India represents a dynamic extension of the Indian government's commitment to take the Make in India manufacturing initiative ahead. The government introduced

significant modifications in its erstwhile procurement approach: it relaxed the need for a procurable product to have at least three vendors; it became increasingly accessible to companies that proposed innovative products unmapped by the government. The eco-system will develop enhanced confidence in the system to invest in new product development and productisation.

Research-driven

Zen has strengthened a business moat through proactive investments in proprietary research. Over the years, the Company has strengthened its brand around the delivery of comprehensive training solutions that address a deep-felt need of customers. The Company is a respected solutions integrator capturing value across the process chain. These simulation training products are technologically advanced and represent absolutely the latest in cutting-edge orientation. The Company provides a family of more than 40 products and has filed 93 patents till date, making it possible to address virtually the complete training needs of

