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PAN NO : AABCN4805A
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Date: 12.02.2024

To,
BSE Limited
To,
The National Stock Exchange of India Limited

Phiroze Jeejeebhoy Towers, "Exchange Plaza", Bandra – Kurla Complex,

Dalal Street, Fort, Bandra (EAST), Mumbai – 400 051

Mumbai – 400 001. NSE SYMBOL: NETWEB

#### **SUBJECT: STRATEGY PRESENTATION**

Dear Sir/ Madam,

BSE Scrip Code: 543945

Please find enclosed herewith the updated Strategy Presentation.

Kindly take the same on record.

Thanking you,

For Netweb Technologies India Limited

Lohit Chhabra

Company Secretary & Compliance Officer

 $Website: \underline{www.netwebindia.com} \ E\text{-mail}: \underline{complianceofficer@netwebindia.com}$ 



# Netweb TECHNOLOGIES

**India's Leading High-end Computing Solutions (HCS) Provider** 



## February 2024

BSE: 543945

**NSE: NETWEB** 

Bloomberg: NETWEB:IN

## **Safe Harbour Statement**



This presentation may contain certain "forward-looking statements" within the meaning of applicable securities laws and regulations, which may include those describing the Company's strategies, strategic direction, objectives, future projects and/or prospects, estimates etc. Investors are cautioned that "forward looking statements" are based on certain assumptions of future events over which the Company exercises no control. Therefore, there can be no guarantee as to their accuracy and readers are advised not to place any undue reliance on these forward-looking statements. The Company undertakes no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise. These statements involve a number of risks, uncertainties and other factors that could cause actual results or positions to differ materially from those that may be projected or implied by these forward-looking statements. Such risks and uncertainties include, but are not limited to; growth, competition, acquisitions, domestic and international economic conditions affecting demand, supply and price conditions in the various business's verticals in the Company's portfolio, changes in Government regulations, laws, statutes, judicial pronouncement, tax regimes, and the ability to attract and retain high quality human resource.

## **Agenda**



- 1 About Netweb Technologies
- 2 Key Investment Highlights
- Growth Strategies
- 4 Annexures

## **About Netweb Technologies**



India's leading Indian origin, owned and controlled OEM in the space of High-end Computing Solutions (HCS)



- Offers a full stack of product and solution suite with comprehensive capabilities in designing, developing, implementing and integrating high performance computing solutions
- Collaborates with various technology partners such as Intel Americas, Inc, AMD,
   Samsung India Electronics Private Ltd, Nvidia & Seagate India Private Ltd
- Develops homegrown compute and storage technologies, deploys supercomputing infrastructure to meet the rising computational demands of businesses, academia, and research organizations
- Compliant with the "Make in India" policy of the Government of India
- One of the few OEMs in India eligible to participate in and seek incentives in terms of both the IT Hardware PLI and Telecom and Networking PLI schemes
- Established in 1999 with manufacturing facility located in Faridabad, Haryana and 17 offices located across India

#### **Business Tailwinds** ▶ ▶

'Make in India' Policy & 'PLI Scheme' of the GOI

Import Licensing on Servers, Laptop, & Tablets from Nov 2023 by DGFT\*

'Make AI in India & Make AI work for India' initiative of the GOI

Growing demand for cloud-based services and network switches

Upgrading network to 5G technology driving 5G ORAN

300+ Supercomputing systems installed

Accelerator / GPU

+ based Al systems & enterprise workstations

Supercomputers listed eleven times in the world's top 500

supercomputers

#### **9M FY24 Financial Metrics**



**Revenue from Operation: ₹4,582 Mn Customers**: Govt. (50.6%) vs Non-Govt. (49.4%)



Op EBITDA Margin: 13.6%



PAT Margin: 9.9%



ROCE1: 32.1%

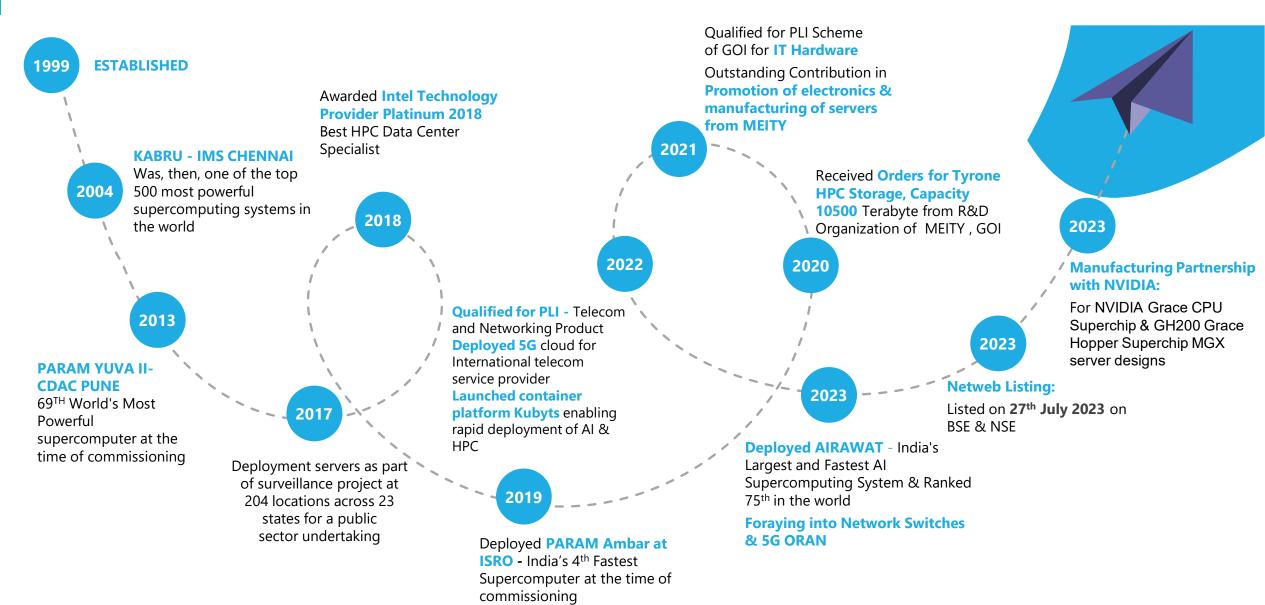


ROE<sup>2</sup>: 25.3%

Private cloud & HCI installations

## **Key Milestones**





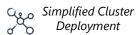
## **Snapshot of Our HCS Offerings (1/2)**



India's leading HCS provider with fully integrated design and manufacturing capabilities

#### (A) High performance computing (Supercomputing / HPC) systems

- Bespoke, and tailored with specialized hardware designs and architecture
- Cater to varied customer specifications





Management

#### (C) Al systems and enterprise workstations

 Address standalone parallel compute-intensive applications, machine learning, deep learning, and support CF-CAD-CMD Applications



Machine Learning



Deep Learning



**HCS Offerings** 





#### (E) Data Centre servers

- Designed to reduce the complexity of managing critical and heavy workloads
- Servers are advanced Al powered that allow intelligent and efficient data processing and storage



Low rack space consumption



High energy



Storage

Wide accelerator/

#### (B) Private cloud and hyperconverged infrastructure (HCI)

 Private cloud and HCI offers hyper-converged capabilities i.e., combining compute, storage, and network' to build:









#### (D) High performance storage (HPS/Enterprise Storage) solutions

Centralized repository for business-critical information that provides data sharing, data protection across multiple computer systems



Storage





#### Parallel File System Storage

#### (F) Software and services for HCS offerings

 Cloud Managed Services – These are the partial or complete management and control of a client's cloud platform, including migration, maintenance, and optimization

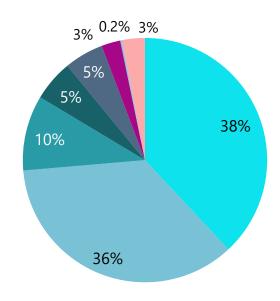


**5G** Services

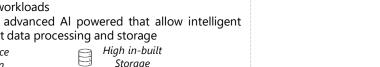


deep learning

### 9M FY24 - Revenue Breakdown by offerings^



- Supercomputing / HPC Systems
- Private cloud & HCI
- Al & Enterprise Workstations
- HPS solutions
- Data Centre Server
- Software & Service for HCS offerings
- Network Switches
- Spares & Others



ञ्राष्ट्र solutions

## **Snapshot of Our HCS Offerings (2/2)**

**High-End Computing Solutions (HCS) Offerings Suite** 





High Performance Computing (HPC) Systems



Private cloud and hyperconverged infrastructure (HCI)



Al systems and Enterprise workstations



High performance storage (HPS) solutions







Make your **HPC Clusters Reliable**, **Agile**, and **Responsive**.





Set up a **Private Cloud Quickly** and **Accelerate**your Cloud First **Strategy**.







Accelerate your Enterprise efficiency with **Tyrone Al System** & Enterprise workstation.

Unified Storage





Unified Block

Archival & Surveillance



Parallel file system
ParallelStor

Tyrone

Reimagine your **Data center strategies** for running modern workload.

# Netweb has designed, developed and deployed some of India's most powerful supercomputers



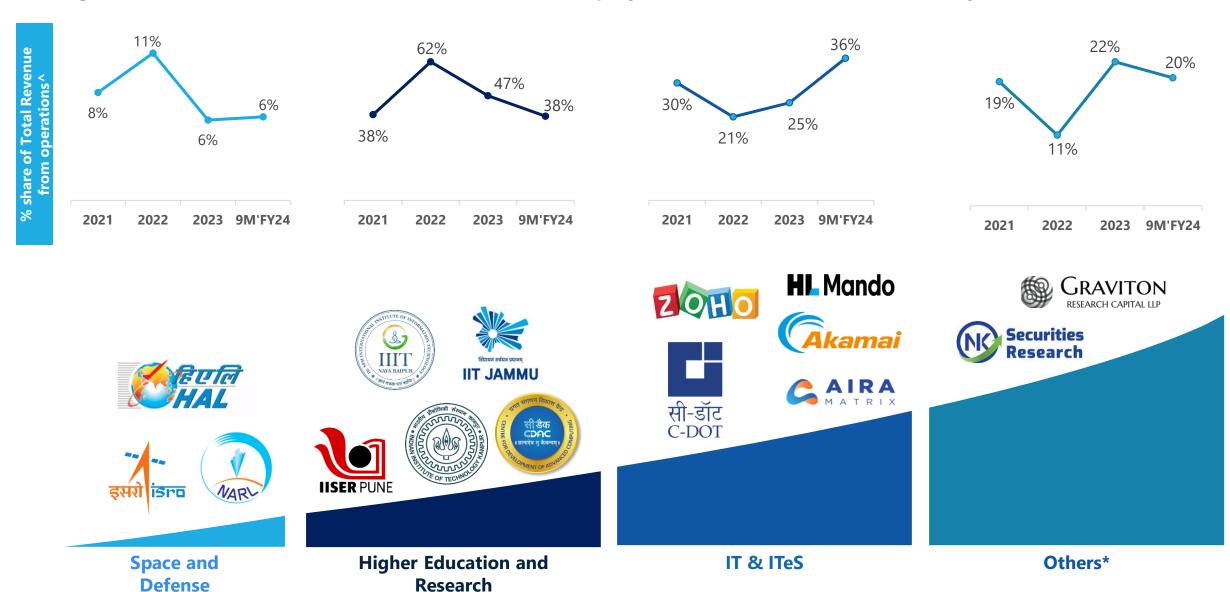
Supercomputer	Year of Deployment	User	Speed in teraflops (Rpeak)	Speed in teraflops (Rmax)	Particulars	
AIRAWAT	2023	Centre for Development of Advanced 13,169.86 Computing, India (CDAC)		8,500.00	India's largest and fastest AI supercomputing system. Ranked 75th in the world and has been included in the 61st edition of Top 500 Global Supercomputing List released in June 2023	
Agastya	2020	IIT Jammu	256.00	161.00	India's <b>27th</b> fastest supercomputer	
PARAM Ambar	2019	Indian Space Research Organisation (ISRO), Government of India	1,384.85	919.61	India's <b>4th</b> fastest supercomputer	
Hartree	2018	National Institute of Science Education and Research (NISER), Bhubaneshwar	51.90	38.87	India's <b>29th</b> fastest supercomputer	

Supercomputer	Year of Deployment	User	Speed in teraflops (Rpeak)	Speed in teraflops (Rmax)	Particulars	
Kalinga upgrade	alinga upgrade 2016 & 2020		249.37	161.42	India's <b>26th</b> fastest supercomputer	
Kohinoor 3	2016	TIFR-TCIS Hyderabad	70.85	43.59	India's <b>20th</b> fastest supercomputer	
PARAM YUVA-II	2013	Centre for Development of Advanced Computing, India (CDAC)	529.38	386.71	the <b>69th</b> most powerful supercomputer in the world	
Kabru	2004	The Institute of Mathematical Sciences, Chennai	1.38	1.00	Our first Supercomputing system, which was then one of the <b>top 500</b> most powerful supercomputing system in the world	

## **Netweb's Diversified Application Industry Base**

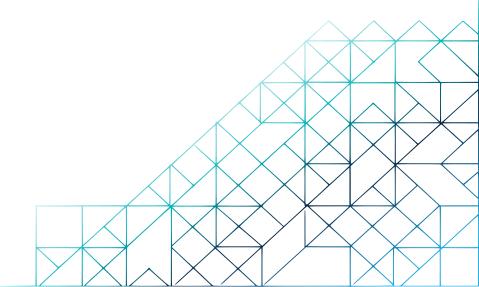


Catering to the end-to-end needs of customers that enable the company to attract new customers and diversify its customer base



<sup>\*</sup>Other enterprises includes BFSI, entertainment and media etc. ; ^Revenue from operations excludes Other operating revenue

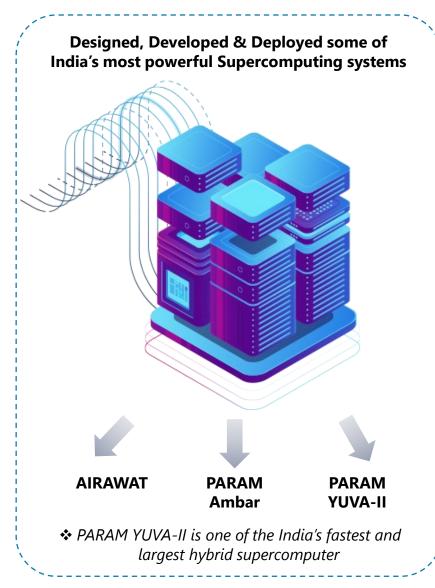
## **HCS Offerings Portfolio**



## **High Performance Computing (HPC)**

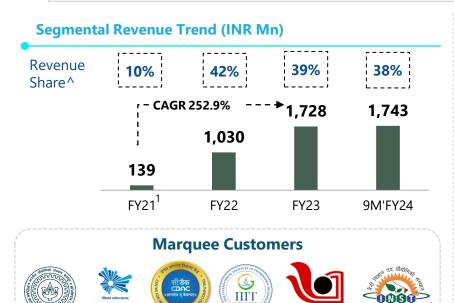
**Netweb**TECHNOLOGIES

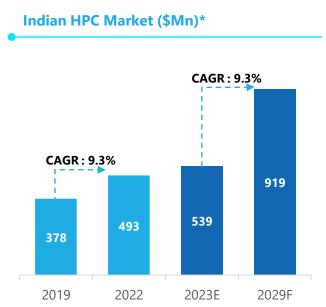
India's largest manufacturer of Supercomputing systems



## **HPC Systems Overview**

- In terms of the number of HPC installations, Netweb is one of the most significant OEMs in India amongst others\*
- Equipped with 'Tyrone' cluster management suite
- Deployed diverse Supercomputing systems ranging from 10 nodes to 400 nodes & scalable up to 1,000 nodes, to cater to different customers' requirements
- 300+ HPC Installations to various government institutions and private enterprises such as IITs, JNU, NMDC Data Centre, etc



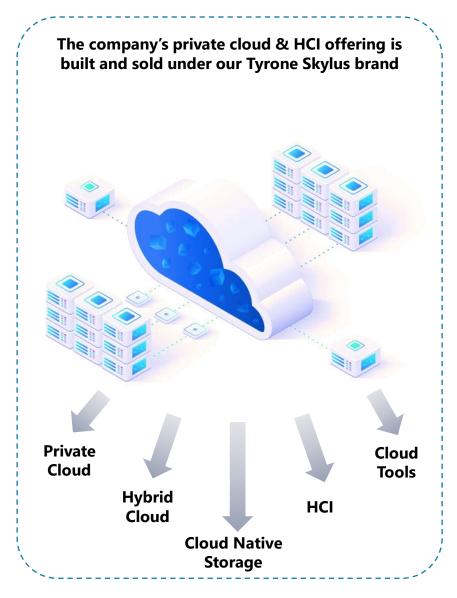


<sup>\*</sup>Source: F&S Report; Note: 1: FY21 was impacted due to COVID related disruptions; ^% share of revenue from operation excludes other operating revenue

## **Private Cloud and Hyperconverged Infrastructure (HCI)**

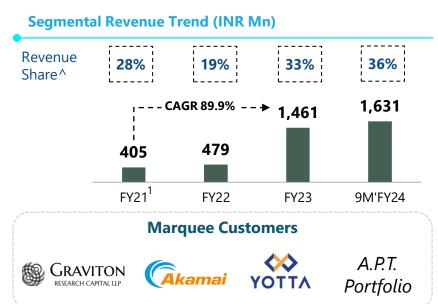


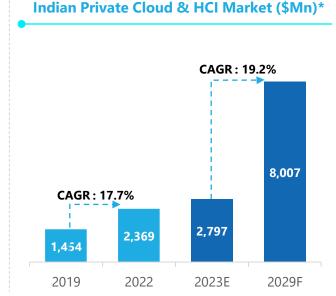
Offers hyper-converged capabilities i.e. combining compute, storage, and network



#### **Private Cloud & HCI Overview**

- Provide a bespoke hardware and curated software stack
- Tyrone Skylus has enabled the company to compete with foreign HCl OEMs, virtualization ISVs, private cloud platforms, and general computing rigs
- Installations of **50+ private cloud and HCI** to marquee customers such as Graviton, Akamai, A.P.T. Portfolio, and Yotta Data.

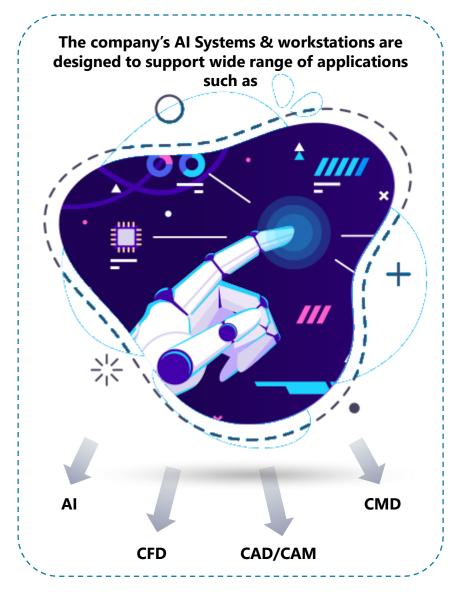




## Al Systems and Enterprise Workstations (Al & EW)

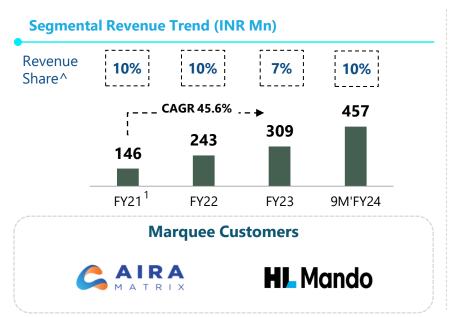


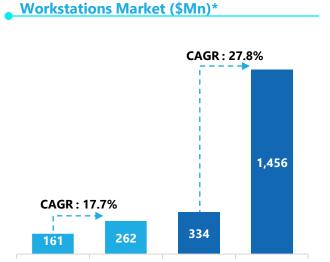
Address requirements of Supercomputing systems, machine learning and deep learning



## **Al Systems & Enterprise Workstations Overview**

- Equipped with proprietary containerised application solution (viz., Tyrone Kubyts)
- Designed and developed a wide range of **over 50 workstation models** to customers such as Airamatrix & HL Mando
- Undertaken installations of over 4,000 accelerator / GPU-based AI systems and enterprise
  workstations for marquee customers such as IIT Jammu, IIT Kanpur, IIIT Naya Raipur, JNU, HL
  Mando, Hemvati University, and Airamatrix.





2023E

2029F

**Indian AI Systems & Enterprise** 

2022

2019

<sup>\*</sup>Source: F&S Report; Note: 1: FY21 was impacted due to COVID related disruptions; ^% share of revenue from operation excludes other operating revenue

## **High Performance Storage (HPS/Enterprise Storage) Solutions**



HPS Solutions provide high throughput and high IOPs# storage for enterprise computation users

The company's hardware, software have been developed in-house and are compliant with the 'Make in India' policy\*.

Its HPS Solutions comprise:



Unified storage solution (Tyrone Verta)



Parallel file system storage (Tyrone ParallelStor)



Cloud native storage (Tyrone Collectivo)

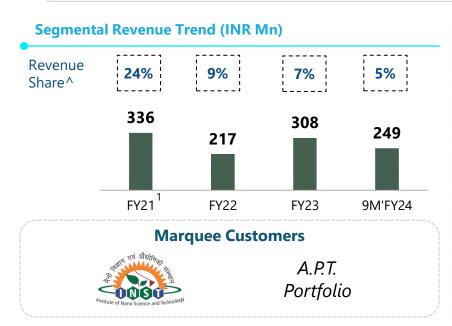


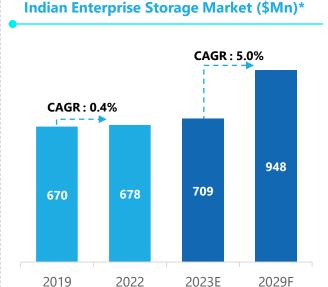
Surveillance and object storage

(Tyrone Collectivo with Fluid Input Output)

#### **HPS Solutions Overview**

- Capable of being integrated into private & public cloud environments
- Salient features of HPS solutions are no single point of failure, scalable upto Exabytes, and built-in high availability
- Facilitate 10 mn IOPs\* & 100 GBps (scalable upto 450GBps) throughput & designs that can be extended up to 1,000 petabytes
- Provide HPS solutions to marquee Customers including Graviton, A.P.T. Portfolio, and INST.





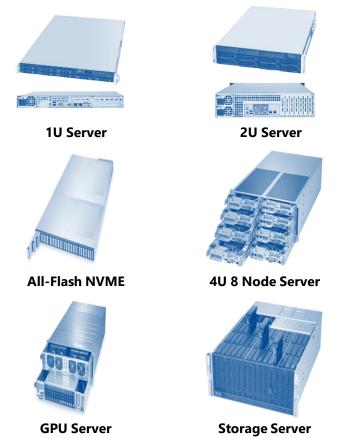
<sup>\*</sup>Source: F&S Report; Note: 1:FY21 was impacted due to COVID related disruptions; #Input/output operations per second; ^% share of revenue from operation excludes other operating revenue

## **Data Centre Server**



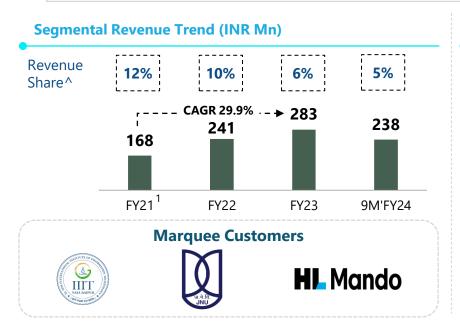
Designing and Manufacturing servers to cater to disparate customer needs from entry-level servers to high-end 'mission-critical' servers

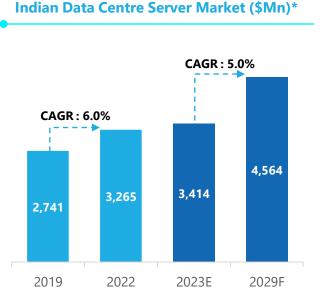
The company's current server models are typically designed and built with the dual processor configuration that enables multiple operations simultaneously, leading to low latency & better physical space utilization.



#### **Data Centre Server Overview**

- Designed and built over 200 dual-processor server models under the brand 'Tyrone Camarero"
- Improving and customizing offerings to address specific requirements such as Low Rack Space Consumption, High in-built storage capability (up to 1petabyte (10<sup>15</sup>)), High Energy Efficiency etc.
- Design and manufacture servers in compliance with the 'Make in India' policy
- Provide data center servers to marquee Customers including JNU, HL Mando, etc.

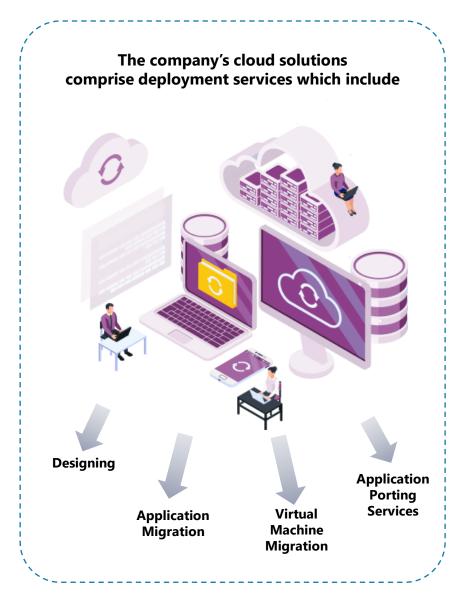




## **Software & Service for HCS**

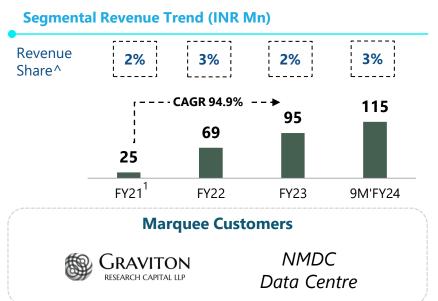
**Netweb**TECHNOLOGIES

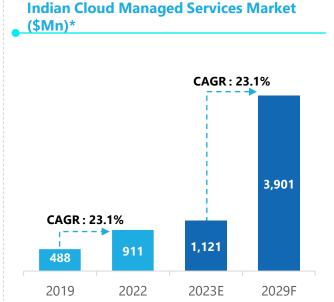
Providing private cloud software stack – Both on-premises and off-premises



#### **Software & Service for HCS Overview**

- **Private cloud software stack** to handle **complex workloads** (including 5G enterprise cloud, 5G edge compute, private 5G, and enterprise IT)
- Provide 'Big Data' centric solutions that are designed to cater to data-intensive distributed applications under a single umbrella
- 'Big Data' centric solutions use Tyrone Camarero dense systems, Tyrone Cluster Management
   Suite, and Tyrone Collectivo range of specialized storage systems
- Provide software and services for HCS to marquee Customers including NMDC Data Centre and Graviton.





<sup>\*</sup>Source: F&S Report; Note: 1:FY21 was impacted due to COVID related disruptions; ^% share of revenue from operation excludes other operating revenue

## **Competitor Landscape**



One of the few players in India who offers a full stack of product and solution suite with comprehensive capabilities in designing, developing, implementing, and integrating high end computing solutions

Products and Solutions	Netweb Technologies	IBM Lenovo	DELL	Hewlett Packard Enterprise	ATOS	NVIDIA	NetApp Hitachi Data Systems	Red Hat  Nutanix	Vmware  Suse	HCL Cognizant	Accenture Tech Mahindra
НРС		$\checkmark$	0	<b>√</b>	<b>1</b>	0	0	0	0	0	0
Data Centre Server		<b>√</b>	<b>√</b>	<b>1</b>	0	0	0	0	0	0	0
Enterprise Storage Systems		0	<b>1</b>	<b>√</b>	0	0	<b>√</b>	0	0	0	0
Private Cloud and HCI		0	0	0	0	0	0	<b>1</b>	<b>1</b>	0	0
Al Systems & Enterprise Workstation	<b>√</b>	0	0	0	0	<b>√</b>	0	0	0	0	0
Cloud Managed Services	<b>1</b>	0	0	0	0	0	0	0	0	<b>1</b>	<b>1</b>

Source: F&S Report

## **Agenda**



- 1 About Netweb Technologies
- 2 Key Investment Highlights
- 3 Growth Strategies
- 4 Annexures

## **Key Investment Highlights**

Netweb® TECHNOLOGIES

India's leading Indian origin owned and controlled OEM for HCS with integrated design and manufacturing capabilities

Long standing relationship with a marquee and diverse customer base

2

Operates in a rapidly evolving and technologically advanced industry with high entry barriers

Track record of financial performance and consistent growth

3

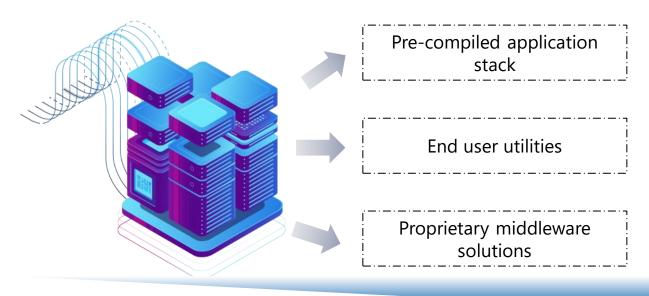
Significant product development and innovation through R&D



# 1. India's leading Indian origin owned and controlled OEM for HCS with integrated design and manufacturing capabilities (1/2)



Full stack of product and solution suite with comprehensive capabilities in designing, developing, implementing and integrating HPC solutions



**Deep Expertise in System Design & Architecture** 



Proprietary designs are cloud native



Proprietary designs are capable of catering to the evolving needs of Customers

Providing End-to-End Solutions with Fully Integrated Design & Manufacturing Capabilities, now compliant with Make in India policy



## Design

**Design proprietary** hardware, middleware stack and related software solutions



### Manufacture

**Manufacturing** facility capable of producing 200+ server models, 50+ workstation models & 15+ storage systems



## **Deployment**

**Deploy** supercomputing infrastructure to meet the rising computational demands of customers

# 1. India's leading Indian origin owned and controlled OEM for HCS with integrated design and manufacturing capabilities (2/2)



## End-to-End Designing & Production of Make-in-India Server



In-house Expert Design Team



Advance Technology Integration



Quality Control Measures



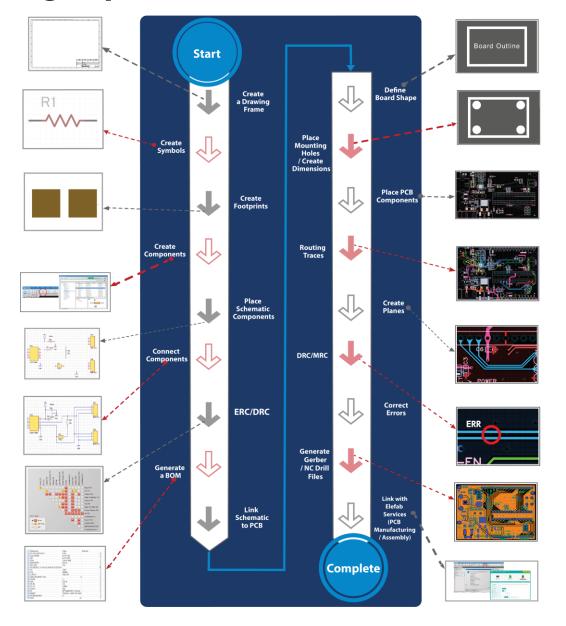
Very Low Failure Rate



Scalable Production Capacity



25 Years of Expertise in the Domain



## 2. Operates in a rapidly evolving and technologically advanced industry with high entry barriers



Experience of installing 300+ HPC systems, 50+ private cloud & HCl, 4000+ accelerator/GPU based AI systems & enterprise workstations

**Experience** gained in evolving projects

Setting up AI & deep learning labs at govt. institute, forensic workstation at GOI dept & Big Data computing lab at a govt. institute

Installations High-Performance Storage solution for a Fintech Company to deliver 450GBps throughput

Developing building and Supercomputing systems such as AIRAWAT. Agastya, PARAM Ambar, PARAM YUVA-II and Kabru

Our **Capabilities** 

#### Continuous R&D in



Manufacturing servers



Supercomputing systems



**Containerized Application** Solution

#### **Technical Skillset**



Kernel level



Hardware product



Fine-tuned PCB layouts



Mix workload capabilities





Dense architectures

Repository of HPC-AI codes

**Industry Entry Barriers** 



#### Rapidity of technological advancement necessitates:

- Hardware, Middleware & Application-level Innovation
- **Application Optimization**
- Track Record of Customer Service
- Fine tuning of Architectures



#### Modification of designs and changes in implementation requires

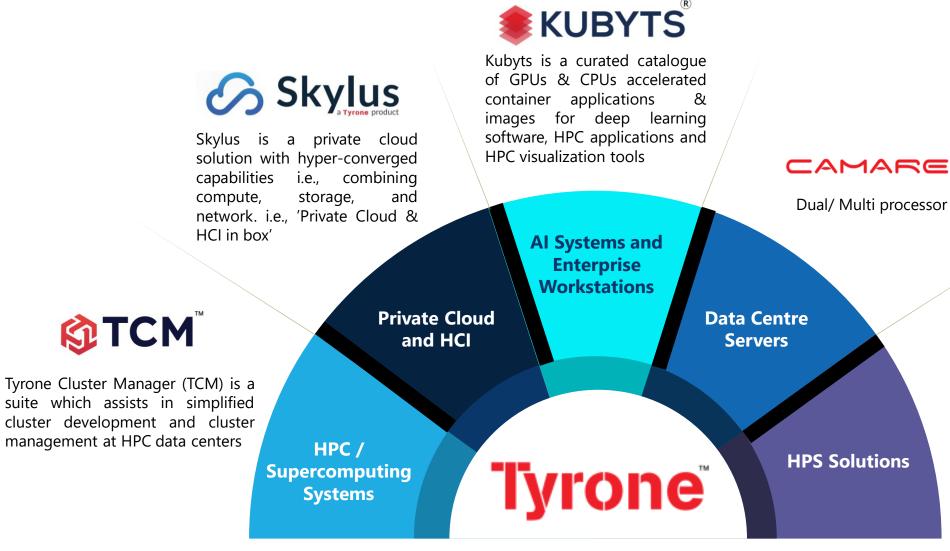
- Deep Expertise in system design & architecture
- Expertise in Hardware & middleware
- Exposure to large problem sets
- Technical skill set & expertise

## 3. Significant product development and innovation through R&D



Independently design and innovate products and solutions offerings and provide services tailored to specific customer requirements

The company's R&D Facilities has enabled it to increase its product lines across different HCS offerings



#### CAMARERO

Dual/ Multi processor server

## Para elStor

A range of storage system which provides highthroughput storage

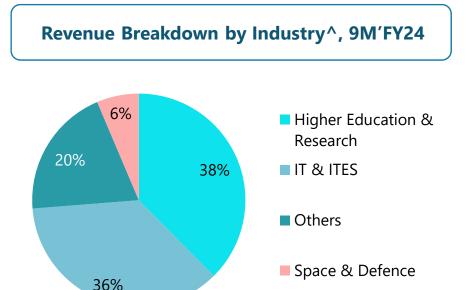
#### COLLECTIVO

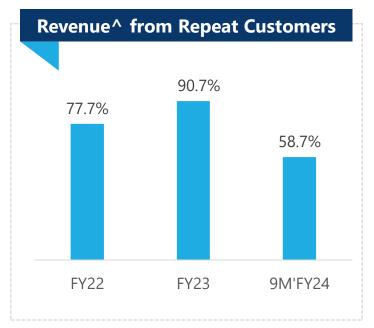
A parallel file system that assists in meeting archival and storage requirements

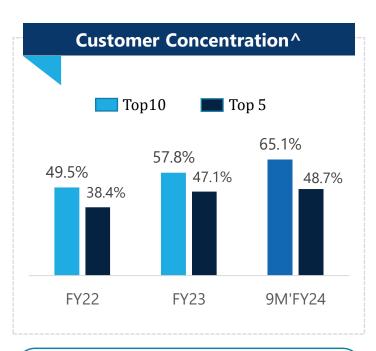
## Tvrone VERTA

of Unified Range Storage Solutions providing flexibility and high performance

## 4. Long standing relationship with a marquee and diverse customer base Netweb









256
Repeat Customers (9M'FY24)
associated for over 5.07 years using
Fiscal 2016 as the base

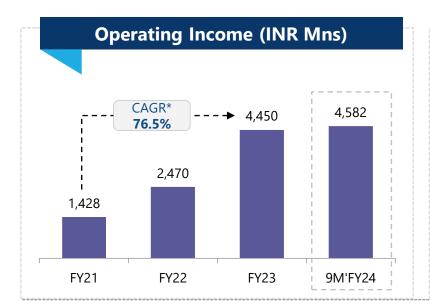
**3.36 years**Average top 10 customer age (9M'FY24) using Fiscal 2016 as base

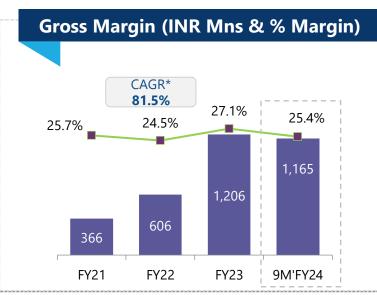
**10.67%**Customer Accretion CAGR\*

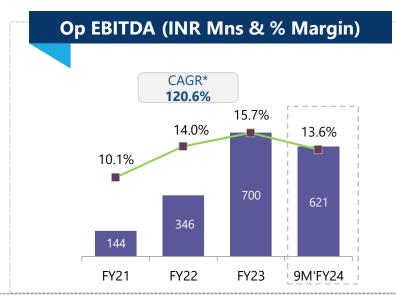
**124**New clients onboarded across diverse industries in the 9M'FY24

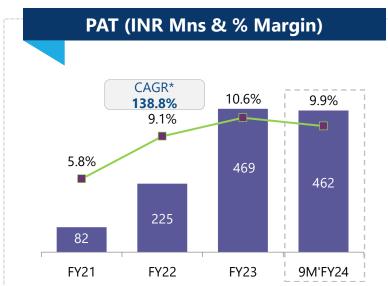
## 5. Track record of financial performance and consistent growth

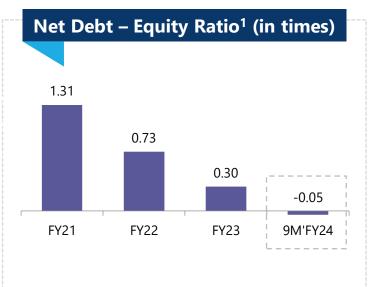


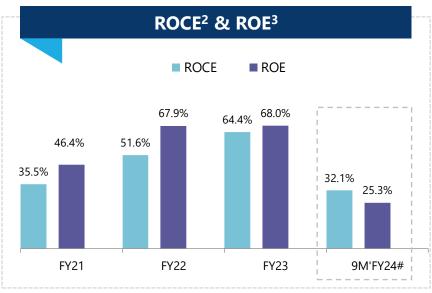












**Note:** <sup>1</sup>Net Debt divided by equity; <sup>2</sup>Earnings before interest and taxes expenses (EBIT) for the period/year divided by average capital employed <sup>3</sup>Profit for the period/year divided by average Equity; \*: CAGR for 2 year period FY21-Fy23; # Annualized

## 6. Experienced Board and Senior Management Team (1/2)



#### **Board of Directors**



Sanjay Lodha Chairman and Managing Director

- Founded Netweb Technologies in 1996 which was acquired by our Company in August 2016
- Been on Board of Advisors for Intel for the year 2020 and 2022
- BA (hons) in economics & PG diploma in business management



Mrutyunjay Mahapatra Independent Director

- Has served as Deputy MD at SBI & MD and CEO of Syndicate Bank
- 40+ years of experience in Banking and Finance Sector
- Holds Bachelors and Masters Degree in Physics



Navin Lodha Whole Time Director

- Leads West Zone of company's sales and Marketing Dept
- 15 + years of experience in sales and marketing
- Holds bachelors degree in commerce



Jasjeet Singh Bagla Independent Director

- Presently associated with IISER, Mohali
- 23+ years of experience in Research and Academia
- Holds Bachelors and Masters Degree in Science, PhD in Physics



Vivek Lodha Whole Time Director

- Leads East Zone of company's sales and Marketing Dept
- 15 + years of experience in sales and marketing
- Holds bachelors degree in commerce



Romi Jatta Independent Director.

- Presently Group Chief Procurement Officer at Minda Corporation Ltd
- 20+ years of Experience
- Holds Bachelors degree in Electronics Engineering



Niraj Lodha Whole Time Director

- Leads South Zone of company's sales and Marketing Dept
- 15 + years of experience in sales and marketing
- Holds bachelors degree in commerce



Vikas Modi Independent Director

- Partner in Doogar and Associates, a CA firm Since 2006
- Holds a Bachelors Degree in commerce, CA with membership from ICAI

## 6. Experienced Board and Senior Management Team (2/2)



## Senior Management – led by people with significant experience in HCS Industry



## **Hemant Agarwal Chief Operating Officer**

- 20+ years of experience with the company
- Holds a bachelors' degree in commerce from the University of Calcutta



## **Other Key Management Personnel**

Prawal Jain
Chief Financial Officer and Chief Human Resource Officer

- 24+ years of experience in Accountancy and Finance
- Holds a bachelors degree in commerce and is a chartered accountant



Hirdey Vikram
Chief Sales and Marketing Officer

- 11+ years of Experience with the company
- Previously associated with HCL Infosystems Limited
- Holds a B.Tech (Information Technology)



**Lohit Chhabra** *Company Secretary and Compliance Officer* 

- 8+ years of experience in secretarial compliance
- Holds a Bachelors degree in commerce and also holds a certificate of membership from the Institute of Company Secretaries of India



Mukesh Golla Chief Research and Development Officer

- 19+ years of Experience with the company
- Holds a B.Tech (Computer Science and Engineering)

## **Agenda**



- 1 About Netweb Technologies
- 2 Key Investment Highlights
- 3 Growth Strategies
- 4 Annexures

## **Growth Drivers**



Opportunities to realize sustainable growth of the business



**Strong Topline Visibility** 

Pipeline<sup>#</sup> ₹ **32,322** Mn

L1<sup>#</sup> ₹ **3,024** Mn

Order Book ₹ **3,391** Mn



#### **Enhanced Capabilties**

To capitalize on emerging opportunities, will establish SMT line within 3-6 months

Partnership with **NVIDIA** as a select manufacturing OEM for **latest Gen Al systems** to unlock potential of Al and High-Performance computing

Plan to introduce **ARM** based servers, using **RISC** architecture, optimized for newer AI workloads such as LLM



#### **Expansion of Operations**

Increasing investments in **Generative AI** infra by Govt & Large enterprises to cater to demand for **LLM related solutions** 

Heavy adoption of Private
Cloud in the PSU Banks

Increasing demand for HPC in the Oil & Gas sector

Foray into Europe & Middle East – plan to setup service network in **4 countries** to start with



## **Expanding Product Portfolio**

Forayed into developing new product lines, viz., **Network Switches** and **5G ORAN** Appliances

**Introduced 5G cloud** on core and edge for telecom service providers





## **Thank You**



**Chief Financial Officer** 

Prawal Jain

Email: <a href="mailto:prawal.jain@netwebindia.com">prawal.jain@netwebindia.com</a>



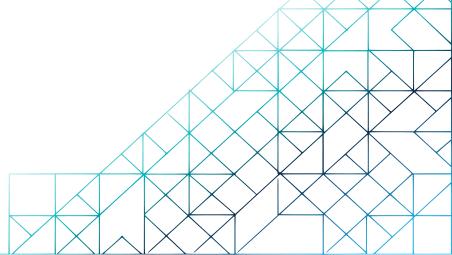
**Investor Relations Advisor** 

Sanjeev Sancheti

Email: <u>ir@uirtus.in</u>

Website: www.uirtus.in









## **Agenda**

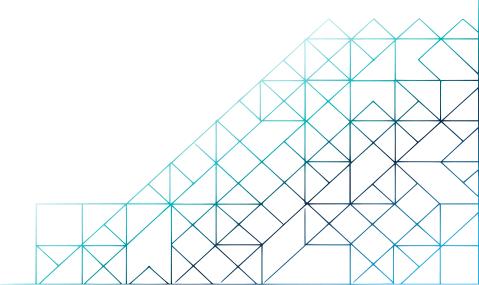


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## **Annexure - Key Industry Drivers**



## **Growth in the Indian IT Industry**



Upgrade to 5G, "Make in India" and PLI Schemes are some of the elements that will contribute to the expansion of Indian IT industry

#### **Indian IT Market**



India IT market by computation type is segmented into HPC Systems, Workstations, other devices infrastructure, software, IT business services, Emerging tech and telecom services

GOI is expected to make strategic technological investments in the below sectors which is expected to drive the India IT industry



Expected to grow with a CAGR of over 3% by FY 2027, as the GOI plans to invest \$ 102.49 Bn on oil and gas infrastructure; driven by the use of HPC solutions such as supercomputers and AI in the areas like Seismic Data Analysis



Expected to grow at ~8-10% till 2027; driven by the use of HPC solutions such as supercomputers and AI



Expected to grow at a CAGR of 27-30% till 2025; AI helps banks to process large volumes of data and predict the latest market trends, currencies, & stocks



Factors driving IT manufacturing in India



#### 'Make in India' Initiative

'Atmanirbhar Bharat Abhiyan' (Self-reliant India) – To **boost local manufacturing** of mobile phones and electronic components & to **make India a global manufacturing hub** 



## **Production Linked Incentive** scheme

Scheme of ₹ 121,950 Mn over 5 years¹ – Incentivise companies who will manufacture specified telecom and networking products – Enterprise Equipment such as Switch & Router



## Upgrading network to 5G technology

Indian telecoms are looking at **Open RAN as a potential way to reduce network-related expenses** and
customize. Open RAN reduces reliance
on existing providers



#### China + 1 Strategy

Tech companies are slowly **shifting production away from China** - In response to growing concerns about the geopolitical tensions & pandemic-induced supply chain disruptions in the last few years



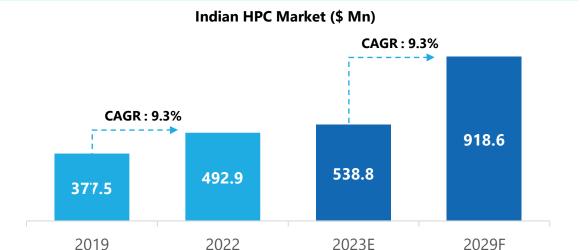
#### **Increasing adoption of AI**

Increasing usage of AI in various industries like telecommunication, BFSI, automobile, oil & gas result in the expansion of Indian IT industry

## **HPC and Private Cloud & HCI Market**



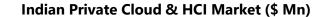
#### **High-Performance Computing Market (HPC)**

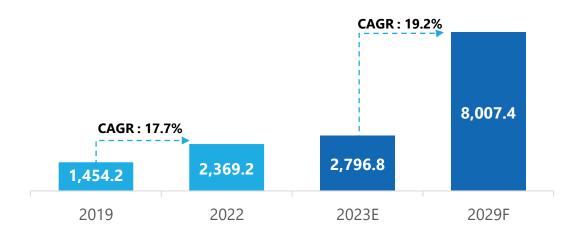


## **Methodology** Key Growth Drivers of HPC Market

- NSM was announced in 2015, to connect national academic and R&D institutions with a grid of more than 70 high-performance computing facilities.
- Only 16.67% of the total budget of ₹4,500 is utilized in 4.5 years for execution of NSM
- In Nov 2022, EU & India signed an "Intent of cooperation on High Performance computing and Quantum Technologies"
- Increasing cloud-based monitoring will drive adoption of HPC
- Increased usage of HPC products and services to drug discovery and healthcare; and Increasing investments in the Industrial Internet of Things (IIoT), artificial intelligence (AI), and engineering, which demand electronic design automation (EDA)

#### **Private Cloud and Hyperconverged Infrastructure (HCI) Market**





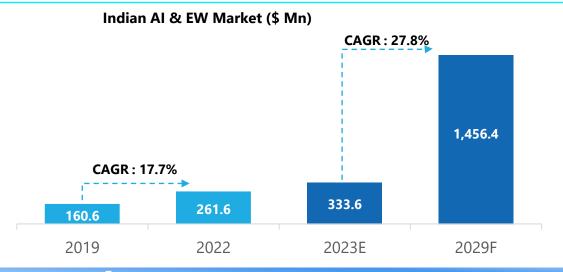
#### **Market** Key Growth Drivers of Private Cloud & HCI Market

- **Drop in usage of traditional data centre infrastructure**, from 41% to 18% in two years as cloud usage accelerates
- Private clouds offer the same control and security as traditional on-premises infrastructure and makes workload performance predictable
- Military expects small deployable communications systems that allows them to take their applications and data into the war field so that they can access them locally.
- HCI and private cloud will witness greater adoption in the India Telecom sector with increasing investment in 5G.
- Unified management, and Automation Unified management promises to reduce the number of tools needed to run IT infrastructure and cuts training requirements, makes HCl easier to scale

# Al Systems & Enterprise Workstations and Data Centre Server Market



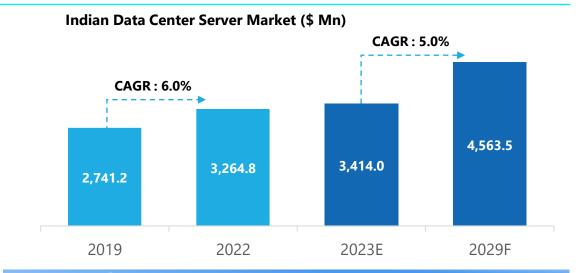
Al systems and Enterprise Workstations (Al & EW)



### Key Growth Drivers of AI & EW Market

- GOI in the budget for Fiscal 2024 has announced that "for realizing the vision of "Make AI in India and Make AI work for India", three centres of excellence for Artificial Intelligence will be set-up in top educational institutions
- Growing demand of GPUs in high-end gaming consoles & crypto currency mining market
- Increase in 3D animation, networking and graphics & digital content creation
- Aids in enhancing government payment schemes
- GPU is an integral part of the AI & EW in govt supercomputers
- BFSI industry generates a lot of data that needs to be processed and examined with the use of AI & EW.

#### **Data Centre Server**



## Key Growth Drivers of Data Center Server

- Indian Data Centers to **receive investments up to Rs.1.20 lakh crore**, according to an article from the Economic Times 2022 and a whitepaper from ICRA
- Push for data localization to ensure 75% of the data remains within the country
- **The Data Protection Bill**, may lead to a significant onshoring of Indian citizen's data from offshore data centers to Indian data centers.
- China plus one Strategy and Make in India Initiatives of GOI promoting growth

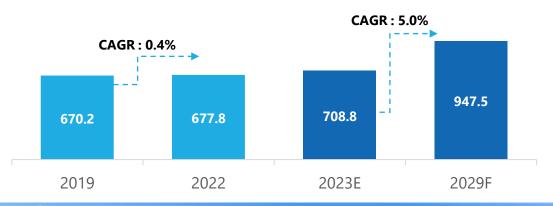
Source: F&S Report

## **Enterprise Storage and Cloud Managed Services Market**



#### **Enterprise Storage System**

#### **Indian Enterprise Storage Market (\$ Mn)**

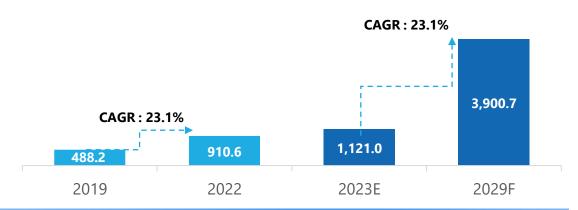


### **Key Growth Drivers of Enterprise Storage Systems Market**

- Rising number of colocation data centers & increasing unstructured data generated from mobile computing devices
- **Primary workloads for storage deployments in India** that drove the market growth included technology upgrades, ERP upgrades, surveillance, digital transformation & 5G rollouts
- Enterprise storage **has emerged as the most popular** and effective way to store digital data particularly for small and medium-sized businesses.
- The use of SSDs (Solid State Drives) over HDDs (Hard Disk Drives) has grown in popularity across industries due primarily to their superior performance, increased durability, and cost-effective power efficiency

#### **Cloud Managed Services**

#### **Indian Cloud Managed Services (CMS) Market (\$ Mn)**



### Key Growth Drivers of Cloud Managed Services Market

- Rising demand for cloud managed services for business continuity, increase in need for business agility and automation
- Faster and easier deployment of applications with pay-as-you-go model
- Increasing adoption of automated machine systems for e-prescriptions and telemedicine.
- Biotech & pharmaceutical companies are **adopting digital solutions** to optimize drug development process
- National Government Cloud programme known as "MeghRaj" was unveiled by the MeitY in 2020