

Our Credentials

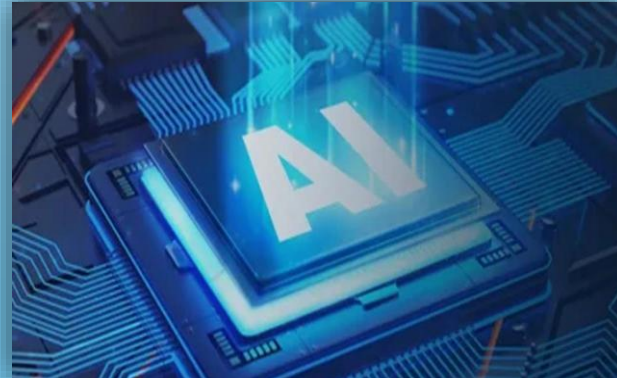
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AXISCADES

BSE : 532395 | NSE : AXISCADES



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Investment Rationale

Strategic Transformation and Experienced Management

A primary catalyst for our investment is Axiscades undergoing a fundamental strategic shift, moving from a traditional engineering services provider to a **product-driven, non-linear technology leader**. This transformation is spearheaded by a new and experienced management team.

Dr. Sampath Ravi Narayanan – Chairman (Non-Executive Director)

A pioneer in the Indian aerospace and defense industry, Dr. Ravi Narayanan returns to AXISCADES after previously serving as CEO and Chairman till 2014. With 40+ years of experience across the government, private sector, and OEMs, he has held leadership roles including Director at Airbus India.

Mr. Alfonso Martinez – CEO & MD

An aerodynamics engineer and ER&D entrepreneur, Alfonso founded and sold his company to Altran, where he later led the \$1B+ aerospace vertical. He held senior roles at Capgemini and was Group President at Quest Global before joining AXISCADES. He brings over two decades of global leadership in engineering services.

Mr. KP Mohana Krishnan – Dy. CEO & President – Aerospace

An AXISCADES veteran and former Senior GM at Mahindra Aerospace, KP brings deep business development and aerospace domain expertise. He has played a pivotal role in building strategic aerospace relationships and driving core growth initiatives.

Mr. D. Muralikrishnan – Chief Operating Officer (COO)

A former AXISCADES leader who built the Caterpillar account from scratch and set up facilities in Chennai and Hyderabad. Murali currently oversees large P&L operations (> \$200M) and brings strong execution and delivery capabilities back to AXISCADES.

Mr. Sharadhi Chandra Babu – President – Defence

With AXISCADES since 2008, Sharadhi has led major defence programs including the Airbus fuselage deal and Mirage upgrades. A former Indian Air Force professional and hands-on engineer, he spearheads the company's direct-to-defence and OEM-focused programs.

Mr. Anurag Sharma – President – ESAI & CEO – Add Solution GmbH

An M.Tech from IIT Roorkee, Anurag is a veteran of AXISCADES and formerly led the Digitalization business at Siemens. He now heads the Electronics, Semiconductor, and AI (ESAI) vertical as well as its German subsidiary, Add Solution GmbH.

Mr. Ravikumar Joghee – Chief Strategy & Marketing Officer

A long-time AXISCADES leader, Ravi has led multiple strategic and marketing initiatives during his previous stints. He now plays a key role in shaping the company's go-to-market strategy and growth roadmap.

For more details about the management you can read Management background, Integrity and competence section of the report.

High-Cost Debt Reduction and Improved Financial Health

Raised money through QIP and paid off high cost debt, which led to significant margin improvements quickly.

Strong Capex Plans for Future Growth

To support its long-term vision, AXISCADES is making strategic investments in infrastructure through the development of the Devanahalli Atmanirbhar Complex (DAC) on a 20-acre campus in Bangalore.

Phase 1 (FY25 completion) focuses on Radar and Electronic Warfare systems—covering development, manufacturing and testing. Estimated cost: ₹250 Cr; ₹120 Cr (Phase 1A) to be internally funded.

Phase 2 will expand into a Missile Atmanirbhar Cluster (MAC) and MRO for missile systems, supported by a new facility in Hyderabad.

Phase 3 targets full-fledged MRO and supply chain infrastructure for aerospace and defence clients, to be constructed over the next 3 years.

Funding will be structured through Axis Aerospace Infra Pvt Ltd (AAIPL), with management favoring strategic partnerships over equity dilution. Non-core businesses may be divested to fund later phases.

Powerful Industry Tailwinds

A strong government push for self-reliance under the 'Aatmanirbhar Bharat' scheme is boosting domestic manufacturing and reducing import dependency. This focus, coupled with a significant rise in defence exports, is creating robust growth and investment opportunities across the sectors.

Strong Promoter Background

The company is backed by a strong and well-regarded promoter group, Jupiter Capital Private Limited, founded by Mr. Rajeev Chandrasekhar. The promoter's extensive experience in public service and deep understanding of India's technology and defense policy landscape provides Axiscades with a unique strategic advantage in navigating the sector and aligning with national priorities like 'Atmanirbhar Bharat'. Furthermore, the backing from a private equity firm instills a strong culture of financial discipline and brings seasoned strategic oversight to the board of directors.

Attractive Valuation at a Transition Point

While current valuation multiples may appear high, they must be viewed in the context of the company's strategic pivot. Axiscades is moving away from a linear, services-based ER&D growth model towards a more scalable, high-margin model driven by Intellectual Property (IP), products, and solutions, particularly in the defense and aerospace sectors.

This transformation warrants a valuation comparison not with traditional IT services companies, but with IP-led defense and aerospace players. These companies typically command premium valuations due to their strong order books, higher entry barriers, and non-linear growth potential.

Company	Market Cap (₹ Cr)	P/E Ratio	EV/EBITDA	ROCE (%)	Sales Growth (3Y)
Axiscades Tech.	6,107	78.5	38.4	14%	19%
Data Patterns	16,695	75.3	51.6	22%	32%
Astra Microwave	10,085	65.7	35.2	19%	12%
Apollo Micro Sys.	5,813	102	45.7	15%	32%
Paras Defence	6,901	112	64.8	15%	26%

Industry Overview - ER&D

The **Engineering Research & Development (ER&D)** services industry plays a critical role in **innovation, technological advancement, and product efficiency** across sectors like **automotive, aerospace & defense, semiconductors, IT, and biotech**. It includes services like **product design, software development, testing, and validation**—helping businesses speed up time-to-market and improve global competitiveness.

• **Emerging trends** like **AI, digital engineering, and sustainability** are shaping the future of this industry.

• ER&D services are **non-manufacturing**, focused on stages like **design, development, testing, and rollout** rather than mass production.

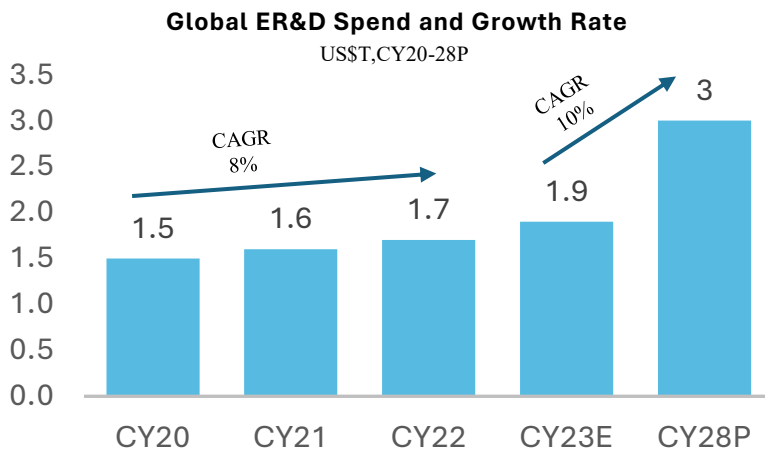
• The sector is divided into:

- **Product Engineering Services** – focus on full product development lifecycle
- **Process Engineering Services** – focus on plant/facility design, industrial engineering, and automation

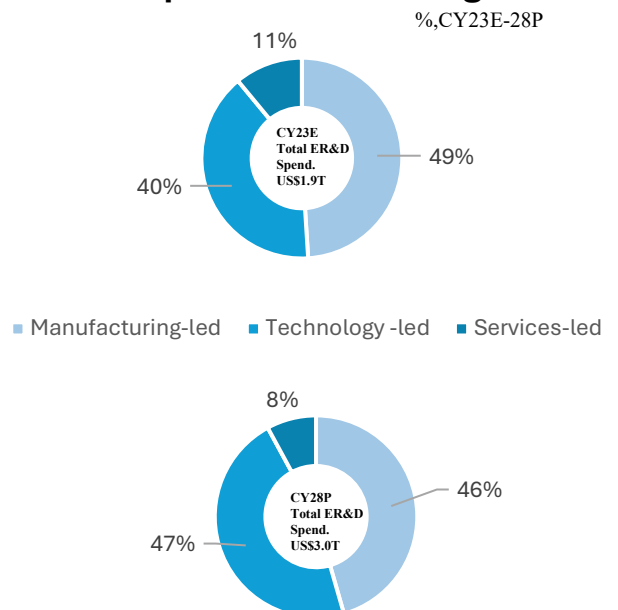
Market Growth

• ER&D spending grew from **\$1.5T in 2020 to \$1.7T in 2022** (CAGR of 8%)

• It is projected to reach **\$3T by 2028** (CAGR of 10% from 2023 onwards)



ER&D Spend Across Categories



In CY23, the global ER&D expenditure is primarily driven by three key industry categories:

1. Manufacturing-led Category (49% of total ER&D spend):

1. **Automotive** holds the highest share within this category and is expected to grow at a 9% CAGR from CY23 to CY28, contributing 46% to the overall ER&D expenditure. Key areas of ER&D focus in the automotive sector include electrification, connected vehicles, and software development. ER&D spending on automobiles is expected to reach approximately **US\$ 500B by 2030**, with government incentives supporting further growth.

2. Technology-led Category (40% of total ER&D spend):

1. The software sector is the largest contributor within this category, driven by enterprise demands for complex software changes on a large scale in shorter durations. Additionally, the **semiconductor** sector is experiencing increased demand, particularly from automotive, telecommunications, and technology sectors. Innovations in **System-on-Chip (SoC)** technology are a key focus.

3. Services-led Category (11% of total ER&D spend):

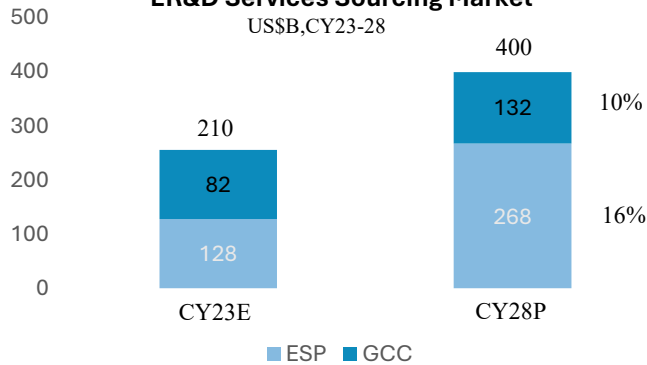
1. This vertical includes sectors like **BFSI**, healthcare, and media & entertainment, but it represents a smaller portion of the overall ER&D budget compared to manufacturing and technology sectors.

Overall, the **technology-led** vertical is expected to grow at a **14% CAGR** from CY23 to CY28, reaching approximately **47%** of total global ER&D spend by 2028.

Industry Pipeline

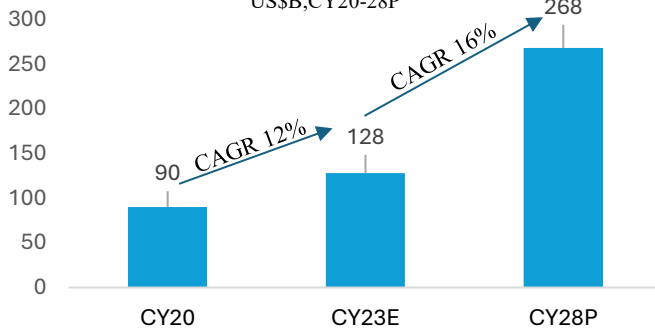
ER&D Services Sourcing Market

US\$B, CY23-28



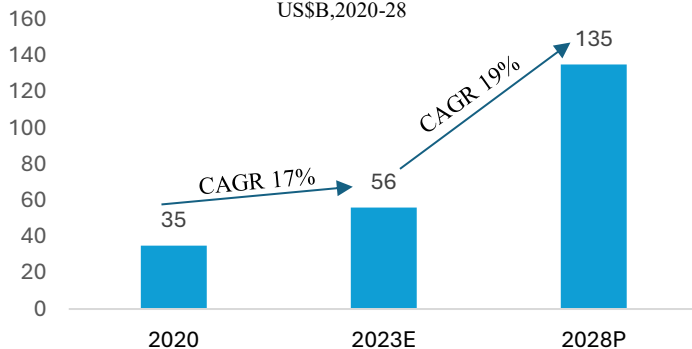
ER&D Spend Addressed by ESPs

US\$B, CY20-28P



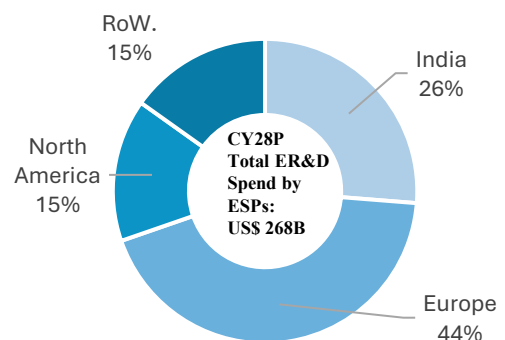
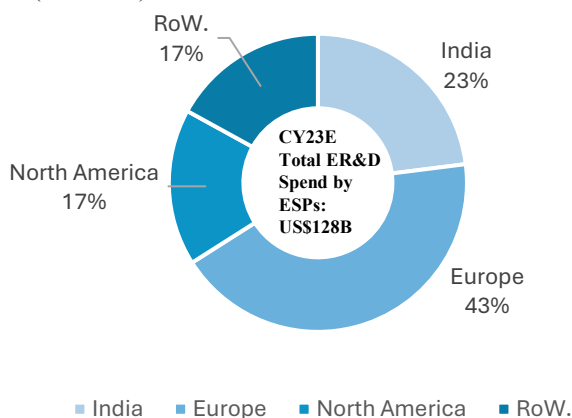
India ER&D Sourcing

US\$B, 2020-28



ER&D Spend through ESPs Across Geographies

(%CY23-28)



Step	Metric	Value (CY23)	Explanation
1	Global ER&D Spend	US\$ 1.9 Trillion	Total global spending on Engineering R&D – internal + outsourced
2	Global ER&D Sourcing Market	US\$ 210B	Only the outsourced part of global ER&D (GCCs + ESPs)
3	Third-party ESP Market (within sourcing)	US\$ 128B	Spend on independent Engineering Service Providers (like Axiscades) – this is Axiscades' TAM
4	Indian ESPs' Share of ESP Market	US\$ 56B (~44%)	Revenue earned by Indian-origin ESPs from the global third-party ER&D sourcing market

Company Overview

AXISCADES is a full-stack Engineering R&D (ER&D) company that enables end-to-end development of hardware and software systems, from concept design and testing to embedded software development and system integration. It operates across the entire product lifecycle, which includes:

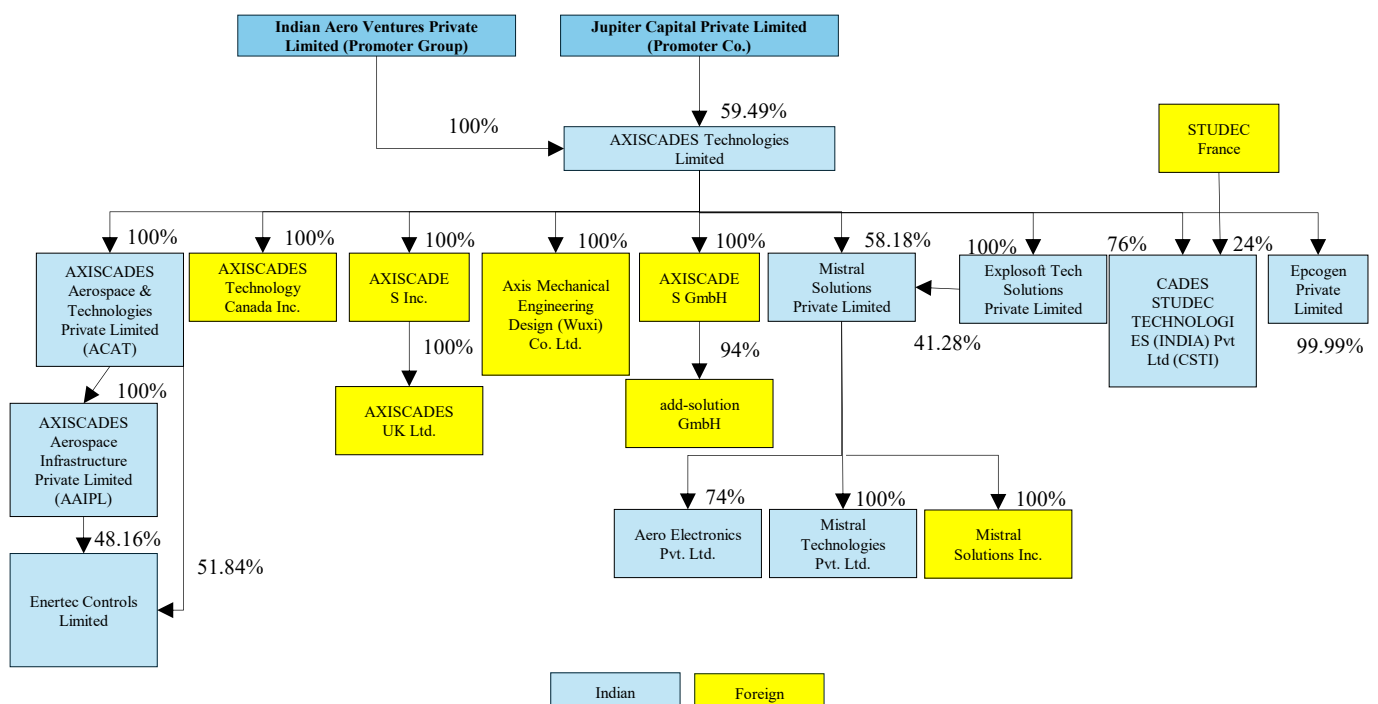
- Designing hardware systems using advanced CAD/CAE tools and simulation software
- Testing and validating designs virtually and physically
- Developing embedded software and control systems tailored to the hardware
- Sourcing raw materials and components through its vendor ecosystem
- Assembling and integrating systems in-house
- Final system testing and certification, ensuring mission-critical reliability

The company has a strong presence across diverse domains including:

- Core Domains – (Management is focusing for growth on these domains)
 1. Aerospace
 2. Defence
 3. Electronics, Semiconductors & AI (ESAI)
- Non Core Domains – (Management is focusing to reset and make these domain more profitable)
 4. Automotive
 5. Heavy Engineering
 6. Energy

With deep domain expertise, vertically integrated capabilities, and focus on high-reliability systems, AXISCADES is strategically positioned to support OEMs and Tier-1s in building the next generation of intelligent and sustainable engineering products.

Subsidiary/JV Structure



Revenue Analysis

Revenue Recognition Policy

The company recognizes revenue when control of goods or services transfers to the customer, at the expected consideration. For services, it primarily uses time-and-material where revenue is recognized as services are performed or percentage-of-completion for fixed-price contracts. For products, revenue is recognized upon transfer of control, or over time if specific conditions for continuous customer benefit are met

Revenue by Vertical

Revenue by Vertical	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR
Engineering Design Services Revenue	318	375	375	412	476	505	367	453	583	697	728	9%
Engineering Design Services as % of Total	100%	100%	77%	79%	78%	75%	70%	74%	71%	73%	71%	
Strategic Technology Solutions Revenue	0	0	111	107	131	168	157	157	238	258	303	13%
Strategic Technology Solutions as % of Total	0%	0%	23%	21%	22%	25%	30%	26%	29%	27%	29%	

The activities undertaken under Engineering Design services/Technology Services and Solutions is involved in providing Product Design, Engineering, research and development services.

Under the Strategic technology solutions segment, integration services are provided for defense & offsets business. It includes partnering with major original equipment manufacturers (OEM's) in the areas of strategic electronics, avionics, radar data processing and electronic warfare etc.

Strategic technology solutions generally have higher EBITDA margins (14 – 15%) compared to Engineering design services (10 – 11%) as it is more tilted towards Goods rather than Services and is hence non linear to employee costs.

Revenue by Goods and Services

Particulars	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	CAGR
Sale of services	318	375	401	444	463	514	361	466	569	687	8%
Services As a % of total	100%	100%	82%	86%	76%	76%	69%	76%	69%	72%	
Engineering Design services	318	375	376	412	452	464	351	414	500	628	
Strategic technology solutions	0	0	26	32	11	50	10	52	69	59	
Sale of goods	0	0	85	75	141	151	156	142	244	266	18%
Goods As a % of total	0%	0%	18%	14%	23%	22%	30%	23%	30%	28%	
Engineering Design services	0	0	0	0	23	33	24	37	75	67	
Strategic technology solutions	0	0	85	75	118	118	132	106	169	199	
Other operating revenue	NA						6	2	8	3	-23%
Export incentives							6	0	0	0	
Other operating income							0	2	8	3	

Sale of services to Sale of goods ratio is 70:30. Management is wanting to reverse this till FY30 and achieve non linear growth and expand EBITDA margins. This is also visible in the trend as Sale of goods is growing at a CAGR of 18% compared to 8% of Sale of services. This is also due to major tailwinds in the Indian defense industry as Defense vertical forms the major part of Strategic Tech solutions.

Revenue by Locations

Revenue by Locations	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR
APAC Revenue	64	53	140	90	136	114	111	148	230	296	381	20%
APAC as % of Total	20%	14%	29%	17%	22%	17%	21%	24%	28%	31%	37%	
CANADA Revenue	NA			29	35	40	36	38	41	38	41	5%
CANADA as % of Total				6%	6%	6%	7%	6%	5%	4%	4%	
EUROPE Revenue	127	191	205	222	209	276	175	196	279	363	371	11%
EUROPE as % of Total	40%	51%	42%	43%	34%	41%	33%	32%	34%	38%	36%	
USA Revenue	127	131	139	179	228	242	202	228	271	258	237	6%
USA as % of Total	40%	35%	29%	34%	38%	36%	39%	37%	33%	27%	23%	

AXISCADDES has demonstrably reduced its heavy dependence on foreign clients. By strategically acquiring companies like Mistral and leveraging India's "Make in India" defense initiatives, the company has successfully onboarded major Indian partners and diversified its revenue base, with APAC (driven by defense and strategic technology solutions) becoming a significant and growing contributor alongside Europe and the USA. This diversification is a key part of its broader strategy to achieve sustainable and profitable growth by focusing on high-margin core domains and product-led solutions

Revenue by Industry/Domains

Revenue by Industry	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR
AEROSPACE Revenue	156	191	188	177	191	209	118	156	230	287	322	8%
YoY Growth		23%	-2%	-6%	8%	9%	-43%	32%	47%	25%	12%	
AEROSPACE as % of Total	49%	51%	39%	34%	32%	31%	23%	26%	28%	30%	31%	
DEFENCE Revenue	NA		112	108	129	168	156	158	238	258	303	12%
YoY Growth				-4%	20%	30%	-7%	1%	51%	8%	17%	
DEFENCE as % of Total			23%	21%	21%	25%	30%	26%	29%	27%	29%	
Defence Production	NA							NA	38	112		
Others									200	146		
ESAI Revenue								96	131	124	125	9%
YoY Growth									37%	-6%	1%	
ESAI as % of Total								16%	16%	13%	12%	
Design								NA	56	58		
Production									72	67		
AUTOMOTIVE Revenue	35	29	22	18	21	20	15	21	33	105	90	10%
YoY Growth		-18%	-22%	-19%	14%	-2%	-25%	41%	54%	220%	-14%	
AUTOMOTIVE as % of Total	11%	8%	5%	4%	3%	3%	3%	4%	4%	11%	9%	
ENERGY Revenue	16	18	21	34	14	13	11	12	16	29	43	10%
YoY Growth		11%	21%	58%	-59%	-4%	-18%	11%	35%	74%	50%	
ENERGY as % of Total	5%	4.70%	4.40%	7%	2%	2%	2%	2%	2%	3%	4%	
HEG and ESAI Revenue	114	138	143	183	252	262	223	262	304	277	273	9%
HEG and ESAI as % of Total	36%	37%	29%	35%	42%	39%	43%	43%	43%	43%	43%	
HEAVY ENGINEERING Revenue	NA							167	173	153	148	-4%
HEAVY ENGINEERING as % of Total								27%	21%	16%	14%	

FY25 INR Cr			
Domain	Revenue	EBITDA	EBITDA %
Aerospace	322	68	21.1%
% of Total	31%	48%	
Defence	303	45	14.9%
% of Total	29%	32%	
ESAI	125	30	24.0%
% of Total	12%	21%	
Core Domains	750	143	19.1%
% of Total	73%	101%	
HE & Auto	238	-9	-3.8%
% of Total	23%	-6%	
Energy	43	8	18.6%
% of Total	4%	6%	
Non Core Domains	281	-1	-0.4%
% of Total	27%	-1%	
Total	1031	142	13.8%

Company's core domains – Aerospace, Defence and ESAI has grown at the rate of 8%, 12% and 9% respectively. New Management's focus in these sectors will make them grow even faster in the future as guided by the management. As you can see in the second chart Core domains contribute to 101% of the total EBITDA of the business, Hence any growth in these domains will boost Margins going ahead.

Major revenues are coming from Defence and Aerospace which is nearly 60% of the total revenues. In Defence we have Production and Prototype. Prototyping is negative or low EBITDA due to its high R&D costs but acts as an important pipeline to bag Production contracts from OEM's which is high EBITDA.

AXISCADES anticipates strong defense revenue growth in FY26 due to several key factors. Primarily, this growth is expected from the ramp-up of higher-margin production orders stemming from existing design wins and certified prototypes. These production orders provide a disproportionate benefit to EBITDA. The company is also significantly benefiting from the Indian government's "Make in India" initiative and the push for indigenous defense development, leveraging its position as an India Offset Partner for global players

Recent near-term partnerships supporting this ambition include:

MBDA: AXISCADES has confirmed intent to expand its cooperation with MBDA, a European leader in complex weapon systems. This includes new activities like built-to-spec and built-to-print assignments for Test Benches and Depot Level Maintenance of Missile Launchers, aligning with MBDA's long-term "Make in India" strategy. Both companies anticipate an increased volume of sourcing for these products and services

Indra: AXISCADES has signed an agreement with Indra, a global leader in defense, aerospace, and strategic systems, to collaborate on the production of solutions for aerospace and defense markets in India. This includes manufacturing Indra solutions like Distance Measuring Equipment (DME) and countermeasure systems. They are actively exploring joint product development for Indian and global markets and evaluating dedicated partnerships for DRDO, CABS, MRMR and MMA programs

Aldoria Forge: A strategic Memorandum of Understanding (MoU) has been signed with Aldoria, a European leader in Space Surveillance and Situational Awareness (SSA), to strengthen India's space capabilities. This collaboration involves evaluating opportunities for high-level data and system alignment to provide cutting-edge SSA solutions, sharing insights and technical know-how, and exploring the development of software and system integration concepts for orbital monitoring and collision avoidance. Discussions are ongoing with ISRO and ISTRAC

Revenue by Project type

Revenue by Project Type	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR
Fixed Price Revenue	89	135	175	266	312	370	283	330	509	640	711	23%
Fixed Price as % of Total	28%	36%	36%	51%	51%	55%	54%	54%	62%	67%	69%	
Time and Material Revenue	229	240	312	253	295	303	241	281	312	315	320	3%
Time and Material as % of Total	72%	64%	64%	49%	49%	45%	46%	46%	38%	33%	31%	

Fixed Price projects have a pre-defined scope and budget, where AXISCADES delivers agreed outcomes for a fixed fee, ideal for well-defined work with better margin control.

Time & Material (T&M) projects are billed based on hours or resources used. Better for flexible, evolving work like R&D or staff augmentation, though with less margin visibility.

Company mix has changed largely towards fixed price revenue over the years.

Revenue by Offshore onshore mix

Revenue Mix	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR
Offshore Revenue	140	173	214	243	346	417	358	433	624	716	794	19%
Offshore as % of Total	44%	46%	44%	47%	57%	62%	68%	71%	76%	75%	77%	
Onsite Revenue	178	203	273	276	262	256	166	177	197	239	237	3%
Onsite as % of Total	56%	54%	56%	53%	43%	38%	32%	29%	24%	25%	23%	

Offshore Revenue and Onsite Revenue are distinguished by the location where the services are delivered. Offshore Revenue refers to revenue generated from services delivered from India. Onsite Revenue refers to revenue generated from services delivered from locations outside India.

Offshore delivery, offers a cost-effective operational model due to a large talent pool and lower operational costs. This allows AXISCADES to enhance internal efficiencies and improve margins. The company consistently monitors and aims to improve productivity and employee utilization, and explore offshoring wherever possible, to manage costs

The data above demonstrates a strategic and successful shift towards a significantly higher proportion of offshore revenue over the years, reflecting the company's efforts to leverage cost efficiencies and drive profitability. However, the consistent presence of onsite revenue reflects the ongoing need for local market engagement and client proximity in their business model.

Revenue concentration amongst top customers

Revenue from contracts with customers	2021	2022	2023
Top Five	59%	57%	55%
Top Ten	77%	75%	75%

Company was heavily dependent on its top 5 and 10 customers till 2023 which can be seen as a Concentration risk as any disruption from any top client will lead to major revenue loss.

Commercial Aerospace Value Chain

Anatomy of the Aeronautical Supply Chain

The global commercial aerospace industry operates on a value chain of immense scale and complexity. It is an ecosystem built to produce one of the most sophisticated products in modern engineering: the commercial aircraft. This value chain is characterized by a distinct, hierarchical structure, intricate economic relationships, and a constant tension between technological innovation and immense cost pressures. Understanding this structure is fundamental to appreciating the roles of every participant, from global giants like Airbus to specialized component manufacturers.

Product Development Value Chain



The Multi-Tiered Structure

The aeronautical supply chain is best understood as a multi-tiered pyramid, with each level providing progressively more complex and integrated systems to the level above it. This structure organizes the interactions among thousands of companies that might contribute to a single aircraft, such as the Airbus A380, which sourced four million individual parts from 1,500 companies across 30 countries.

At the apex of this pyramid are the **Original Equipment Manufacturers (OEMs)**. These are the household names of aviation—primarily Airbus and Boeing—that dominate the global market for large commercial aircraft. OEMs are the final assemblers and integrators. They design the overall aircraft, manage the vast network of suppliers, perform the final assembly and testing, and handle the marketing, sales, and delivery to airline customers. Increasingly, their role is shifting from pure manufacturing to that of a system "architect-integrator," orchestrating a global production effort.

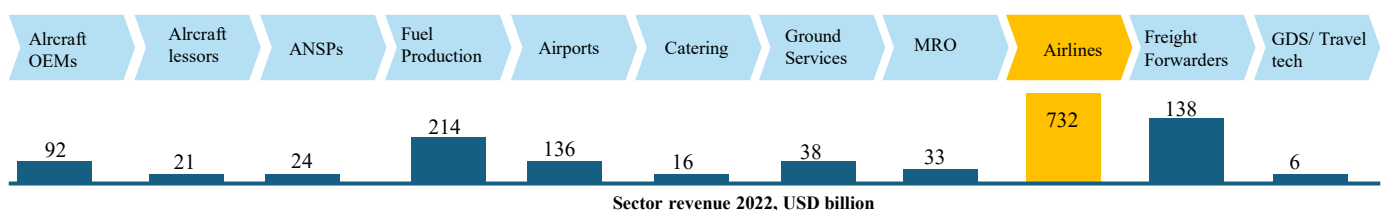
Directly beneath the OEMs are the **Tier 1 suppliers**. These are major corporations in their own right, responsible for designing and manufacturing large, critical systems and structures. They work in close collaboration with the OEMs, often sharing significant design and development responsibilities. Products provided by Tier 1 suppliers include highly complex systems such as jet engines (from companies like Rolls-Royce, General Electric, and Safran), landing gear, braking systems, flight decks (avionics), and complete cabin interiors. They are the linchpins of the supply chain, managing their own networks of suppliers to deliver fully integrated modules directly to the OEM's final assembly line.

Feeding into Tier 1 are the **Tier 2 suppliers**. These companies are typically smaller and more specialized, providing complex components and sub-assemblies. Their products form the building blocks of the larger systems manufactured by Tier 1 suppliers. Examples include airfoils and other aerostructures, transmissions, flight control components, and missile nose cones in the defence context. While they may be less technologically advanced than Tier 1 firms, their role is crucial in ensuring the smooth flow of production up the chain.

The foundation of the pyramid is comprised of **Tier 3 and Tier 4 suppliers**. Tier 3 suppliers manufacture smaller, more standardized parts like high-strength fasteners, hydraulic fittings, hoses, and tubing. They often produce these parts in high volumes for multiple customers across the industry. Finally, Tier 4 suppliers are at the very beginning of the chain, providing the basic raw materials—such as titanium, aluminum alloys, and advanced composites—that are the physical basis of the entire aircraft.

This entire network, from the mining of raw materials to the final aircraft rollout, is connected by a constant flow of logistics and transport workers moving materials, parts, and large modules by road, rail, sea, and air between facilities across the globe.

Aviation Value Chain revenue by Subsector, 2022, USD billion



Economic Dynamics and Value Creation

The commercial aerospace value chain is defined as a "producer-led" supply chain. This means that the OEMs at the top, Airbus and Boeing, wield disproportionate power over all other players. Their global duopoly in the large commercial aircraft market gives them immense leverage; suppliers, having few other customers of this scale, must adhere to the OEMs' stringent demands on cost, quality, and delivery schedules. This power allows OEMs to exert significant downward price pressure on their suppliers. For instance, in the aero-engine market, it is common for list prices to be discounted by as much as 70% to secure a deal with an airline, a pressure that is then passed down the supply chain.

However, this power at the top of the manufacturing pyramid does not translate into guaranteed profitability for the entire ecosystem. An analysis of the broader aviation value chain reveals a striking paradox. While the airline industry is the largest subsector by revenue (US 732 billion in 2022), it is historically the worst financial performer, generating a staggering economic loss of US 45.6 billion in that year. Airlines operate in a brutal environment characterized by high fixed costs, extreme sensitivity to economic shocks, intense fragmentation, and low barriers to entry, all of which erode profitability.

This dynamic creates a fundamental tension. The powerful OEMs are tasked with delivering incredibly expensive, long-lifecycle assets to an end-market that is structurally weak and struggles with profitability. This forces the OEMs to relentlessly pursue cost efficiencies and risk-sharing measures throughout their supply chain. The pressure they exert on their suppliers is a direct consequence of the pressure they face from their airline customers. Interestingly, the most consistently profitable segments of the aviation value chain are often the less visible ones. In 2022, aviation fuel producers and freight forwarders were the only subsectors to generate a positive economic benefit, estimated at US 7.4 billion and US 7 billion respectively. This illustrates that while OEMs control the manufacturing process, ultimate value capture is distributed unevenly, often favoring those who control critical inputs (like fuel) or specialized logistics services. The entire system is a delicate balance, with the architect-integrator OEMs constantly managing the opposing forces of a powerful supply base and a financially fragile customer base.

The Airbus Production Model — A Global Collaboration

Airbus stands as a testament to multinational industrial cooperation. Its production model is a masterclass in global supply chain management, built on a strategic decision to outsource a vast majority of the aircraft's components and systems. This approach allows Airbus to leverage specialized expertise from around the world, share the colossal financial risks of aircraft development, and focus on its core competencies of design, integration, and final assembly.

The "What to Make vs. What to Buy" Dilemma

The decision of what to manufacture in-house versus what to procure from external suppliers is a central strategic question for any OEM. Airbus has leaned heavily towards outsourcing, with approximately 80% of the value of its aircraft being sourced from an extended family of over 18,000 suppliers worldwide. In 2023 alone, this external sourcing amounted to a staggering €53 billion.

There are several compelling reasons for this strategy. The foremost is **cost efficiency**. Specialized suppliers can often achieve economies of scale and process efficiencies that a single OEM cannot replicate across thousands of different parts, leading to lower overall costs. A second critical driver is **risk sharing**. Developing a new aircraft or engine is a monumental undertaking, with development costs for a new engine program potentially reaching US\$500 million. By partnering with Tier 1 suppliers, OEMs like Airbus can share this financial burden. These partners often "buy in" to a program, co-investing in development in exchange for a share of the revenues over the life of the aircraft, a model known as a Risk and Revenue Sharing Partnership (RRSP). This spreads the risk and aligns the incentives of the OEM and its key suppliers.

Finally, outsourcing allows Airbus to **focus on its core business**: the complex task of overall aircraft design, systems integration, final assembly, and customer relations. By entrusting the manufacturing of major components to specialists, Airbus can concentrate its resources on the architectural challenges of making all the disparate systems work together seamlessly. This strategic choice has also been influenced by the success of outsourcing in the automotive industry, although the vastly different production scales—Airbus producing around 500 aircraft a year versus a carmaker producing that many vehicles in a single day—present unique challenges.

The Double-Edged Sword of Outsourcing

While the benefits of outsourcing are clear, the industry's experience, particularly with the Boeing 787 and Airbus A380 programs, has revealed its significant risks. In an effort to push risk further down the supply chain, both OEMs outsourced not only manufacturing but also large portions of the design work and the management of lower-tier suppliers. This led to a critical loss of visibility and control.

The results were problematic. Suppliers sometimes lacked the technical capabilities they claimed, leading to "shadow engineering," where the OEM had to duplicate design efforts to fix problems. A famous issue for Airbus involved wiring harnesses for the A380 being manufactured inches too short because a supplier used an outdated version of the design software, rendering miles of wiring useless and causing severe production delays. Boeing faced even greater challenges with the 787, where as much as 70% of the work was outsourced, leading to major delays and forcing the company to buy out some of its suppliers to regain control.

These painful lessons have led to a strategic recalibration. OEMs now recognize that they cannot simply outsource a process without retaining the capability to manage it effectively. There is a renewed focus on enhancing supply chain visibility, collaborating more closely with suppliers from the earliest design phases, and in some cases, bringing critical work back in-house to ensure quality and control. The goal is to find a more sustainable balance between leveraging a global network of specialists and maintaining the necessary oversight to deliver a complex, reliable product on time.

The Aftermarket Ecosystem—Maintenance, Repair, and Overhaul (MRO)

The life of an aircraft does not end upon delivery to an airline; in many ways, it has just begun. The aftermarket—specifically the services for Maintenance, Repair, and Overhaul (MRO)—constitutes a vast, lucrative, and strategically critical segment of the aerospace value chain. An aircraft is a complex asset that operates for 25-30 years, requiring continuous maintenance to ensure its safety and airworthiness. This long lifecycle creates a recurring and growing revenue stream that is becoming a central battleground for industry players.

A Lucrative and Growing Market

The scale of the MRO market is immense. Airbus forecasts that the total industry spend on aftermarket services will reach US 3 trillion over the next 20 years, with the MRO portion alone accounting for a cumulative value of US 1.8 trillion by 2035. On an annual basis, the MRO market is projected to grow from US 53 billion to over US 132 billion, representing an average annual growth rate of 4.6%.

This growth is propelled by two primary drivers. First is the fundamental expansion of the global commercial aircraft fleet, which is expected to more than double by 2035. More aircraft in the skies naturally means more maintenance is required. Second, and more immediately, are delays in new aircraft deliveries caused by persistent supply chain challenges. When airlines cannot get new planes, they are forced to extend the operational life of their existing aircraft. This keeps older planes flying longer, which in turn increases the demand for heavy maintenance checks and component overhauls, boosting the MRO sector. The Asia-Pacific region is expected to be the largest single MRO market, reflecting the rapid growth of its airline fleets.

The OEM vs. Independent MRO Battleground

Historically, the MRO market was the domain of airlines' in-house engineering departments and a fragmented landscape of independent MRO providers. However, this is changing rapidly as OEMs aggressively push into the aftermarket. Recognizing the high margins and stable, recurring revenues of MRO services, airframe and engine manufacturers like Airbus are no longer content with just the one-time sale of an aircraft. They are actively seeking to capture a larger share of the total lifecycle value of their products.

OEMs are doing this by offering comprehensive, "turnkey" service packages. Airbus, through its "Services By Airbus" division, offers programs like Flight Hour Services (FHS), where airlines pay a fixed cost per flight hour in exchange for guaranteed component availability and maintenance. This transforms a variable and unpredictable maintenance cost into a fixed operational expense for the airline, an attractive proposition. These offerings cover everything from material services and component repair to engineering support and training.

This strategic push creates intense competition for independent MRO providers. These independents, such as companies like AerSale, compete by offering greater flexibility, customization, and a "one-stop-shop" approach that can service multiple aircraft types and provide integrated solutions like asset management and parts sales, which may extend beyond a single OEM's offerings. However, they face a formidable challenge from the OEMs, who possess an inherent and powerful advantage.

This advantage stems from the OEM's unparalleled product knowledge and, increasingly, their control over the aircraft's data. As aircraft become more technologically advanced, the ability to perform effective maintenance is intrinsically linked to having access to proprietary design data and real-time operational information. OEMs are leveraging this position to build a strategic moat around their aftermarket services. By designing "smarter hardware" with embedded sensors that report their own health status, and by creating proprietary data analytics platforms like Airbus's "Skywise," they are building a closed-loop ecosystem. This ecosystem allows them to offer highly sophisticated predictive maintenance services that independent providers may struggle to match. This control over data not only generates a high-margin, recurring revenue stream but also locks in airline customers over the entire multi-decade lifespan of the aircraft, making it increasingly difficult for third-party MROs to compete, especially on the newest generation of aircraft.

The Digital Revolution in MRO

The future of MRO is unequivocally digital. The industry is undergoing a fundamental transformation from a traditional, schedule-based maintenance philosophy (where parts are replaced after a fixed number of flight hours or cycles) to a proactive, condition-based approach driven by data and analytics.

This revolution is enabled by several key technologies:

- Smarter Hardware and Connectivity:** Modern aircraft are equipped with thousands of sensors that generate massive amounts of data. The challenge has been getting this data off the aircraft efficiently and reliably. Innovations in connectivity are solving this, moving away from manual data transfer (in some cases, still done with floppy disks) to automated, wireless systems that feed data into analytical models on the ground.

- Predictive Analytics and AI:** The true value is unlocked when this data is analyzed to predict failures before they happen. By applying AI and machine learning algorithms to vast datasets of in-flight performance, OEMs and MROs can identify subtle patterns that indicate an impending component failure. This allows maintenance to be scheduled proactively, turning an unscheduled, disruptive, and costly event into a planned, efficient repair during scheduled downtime.

- Digital Ecosystems:** Companies like Collins Aerospace are championing the creation of a "digital ecosystem" that connects the hardware, the data, and the customer support services into a seamless whole. Airbus's Skywise platform is a prime example, creating an open data platform where airlines can integrate their own operational data with Airbus's engineering expertise to gain insights that improve efficiency and reduce costs.

This digital shift is not just about improving efficiency; it is about fundamentally changing the value proposition of MRO. It moves the service from a necessary cost center focused on repairs to a value-added service focused on maximizing aircraft availability and operational reliability.

Defense Industry Overview

India's Defence Sector: Forging a New Trajectory of Self-Reliance and Technological Sovereignty

The Geopolitical Crucible & India's Renewed Defence Posture

The global defence and security landscape is undergoing a period of profound transformation, marked by escalating geopolitical tensions and a renewed emphasis on military modernization. A confluence of factors, including active conflicts in Europe and the Middle East and intensifying strategic competition in the Indo-Pacific, has catalyzed a worldwide expansion in defence spending, which reached a record USD 2.4 trillion in CY23. This global re-arming trend provides a powerful tailwind for the defence industry. Against this backdrop, India is executing a structural and strategic pivot, moving decisively away from its historical position as one of the world's largest arms importers to become a self-reliant defence manufacturing hub and a significant exporter.

This shift is a cornerstone of India's national security and economic strategy. According to the Stockholm International Peace Research Institute (SIPRI), India accounted for 8.3% of total global arms imports between 2020-2024, making it the world's second-largest importer. The government has articulated a clear vision to reverse this dependency, not merely as a matter of economic prudence but as a strategic imperative for technological sovereignty. While India's defence expenditure of USD 84 billion in 2023 ranks it as the fourth-largest military spender globally, this figure represents only about 2.4% of its GDP. This is a modest allocation compared to other major military powers, suggesting substantial headroom for sustained budgetary growth as the nation's economy expands.

The current policy direction represents a fundamental change in philosophy. Historically, India's defence procurement was often reactive and heavily reliant on foreign Original Equipment Manufacturers (OEMs). The contemporary approach is a long-term, structural commitment to building a robust domestic industrial ecosystem. This is evidenced by the government's establishment of ambitious, multi-year targets for production and exports, coupled with the systematic implementation of phased import bans through 'Positive Indigenisation Lists'. This long-term strategic vision provides unprecedented policy stability and visibility, creating a conducive environment for private enterprises like AXISCADES to make significant, long-term capital investments in facilities, R&D, and human capital, such as the development of its "Atmanirbhar Cluster" for aerospace and defence.

'Aatmanirbhar Bharat': The USD 130 Billion Catalyst for Indigenisation

The 'Aatmanirbhar Bharat' (Self-Reliant India) initiative, launched in May 2020, is the primary policy catalyst propelling the domestic defence industry forward. It aims to foster independence and self-sufficiency across all sectors, with a particular emphasis on enhancing national security by reducing reliance on imported defence equipment and technologies. This initiative has unlocked a significant and quantifiable market opportunity for domestic players.

This market expansion is underpinned by a forecasted 7-8% compound annual growth rate (CAGR) in India's defence capital outlay, which is the budget allocated for new equipment and modernization. To channel this spending towards domestic industry, the government has set formidable national goals: increasing indigenous defence production from INR 1.3 trillion in FY24 to **INR 3 trillion by FY29E**, and boosting defence exports from INR 211 billion in FY24 to **INR 500 billion by FY29E**.

Metric	FY24 Actual	FY29E Target	Implied CAGR
Defence Production (INR bn)	1,300	3,000	Approx. 18.2%
Defence Exports (INR bn)	211	500	Approx. 18.8%
Defense Capital Outlay (USD bn, annualized)	Approx. 21	Approx. 26	Approx. 7-8%

Defense Value Chain

The Indian Defence Value Chain: Navigating the Procurement Landscape

The Indian defence sector is undergoing a profound and historic transformation. Driven by the government's flagship 'Atmanirbhar Bharat' (Self-Reliant India) initiative, the industry is pivoting from its long-standing position as one of the world's largest importers of military hardware towards becoming a self-sufficient, indigenous manufacturing and export hub. This strategic shift is anchored by a comprehensive policy framework, most notably the Defence Acquisition Procedure (DAP) 2020, which has fundamentally reshaped the rules of engagement for both domestic and foreign companies.

The 'Atmanirbhar Bharat' Framework—Defence Acquisition Procedure (DAP) 2020

The Defence Acquisition Procedure (DAP) 2020 is the principal regulatory document governing all capital procurements for the Indian Armed Forces. It supersedes earlier versions and represents a potential catalyst for self-reliance in defence manufacturing, explicitly designed to promote domestic industry, encourage technology transfer, and reduce the nation's import dependency, which historically saw India sourcing as much as 70% of its defence requirements from abroad.

Policy Objective: From Importer to Indigenous Hub

The core objective of DAP 2020 is to create a vibrant and robust domestic defence industrial ecosystem. For decades, India's reliance on foreign suppliers was a strategic vulnerability, exposing it to supply chain disruptions and geopolitical pressures. The 'Atmanirbhar Bharat' campaign, for which DAP 2020 is a key enabler, aims to reverse this by fostering indigenous design, development, and manufacturing capabilities. The policy's success is already visible in the data: India's defence production reached a record ₹1.27 lakh crore in FY 2023-24, and defence exports have surged to an all-time high, demonstrating a significant shift towards self-reliance.

Procurement Categories Prioritizing Indian Industry

A central feature of DAP 2020 is its hierarchical categorization of procurement, which systematically prioritizes Indian vendors and indigenously developed products. This structure creates a clear pathway and incentive for domestic companies to enhance their capabilities. The key categories, in order of preference, are :

- Buy (Indian-IDDM):** This is the most preferred category. It is reserved for products that are **Indigenously Designed, Developed, and Manufactured** in India. To qualify, a product must have a minimum of 50% Indigenous Content (IC). This category is intended to spur genuine domestic innovation and R&D.
- Buy (Indian):** This category is for equipment sourced from an Indian vendor. If the design is also indigenous, the minimum IC requirement is 50%; otherwise, the IC must be at least 60%. This encourages Indian firms to either design their own products or to deeply localize the manufacturing of foreign-designed products.
- Buy and Make (Indian):** Under this category, an Indian vendor partners with a foreign OEM. The Indian firm procures an initial quantity of the equipment directly from the foreign partner and then manufactures the remainder in India, typically under a Transfer of Technology (ToT) agreement. The "Make" portion of the contract must have a minimum of 50% IC.
- Buy (Global - Manufacture in India):** This is a newer category designed to attract foreign investment. It allows a foreign OEM to be the main bidder, but with a crucial condition: they must commit to manufacturing a specified portion or the entire product in India through a subsidiary, achieving a minimum of 50% IC on the total contract value.
- Buy (Global):** This is the least preferred category, used only when the required equipment cannot be sourced through any of the above routes. It involves an outright purchase from a foreign vendor, but still often includes a 30% IC requirement.

The 'Make' and 'Innovation' Procedures

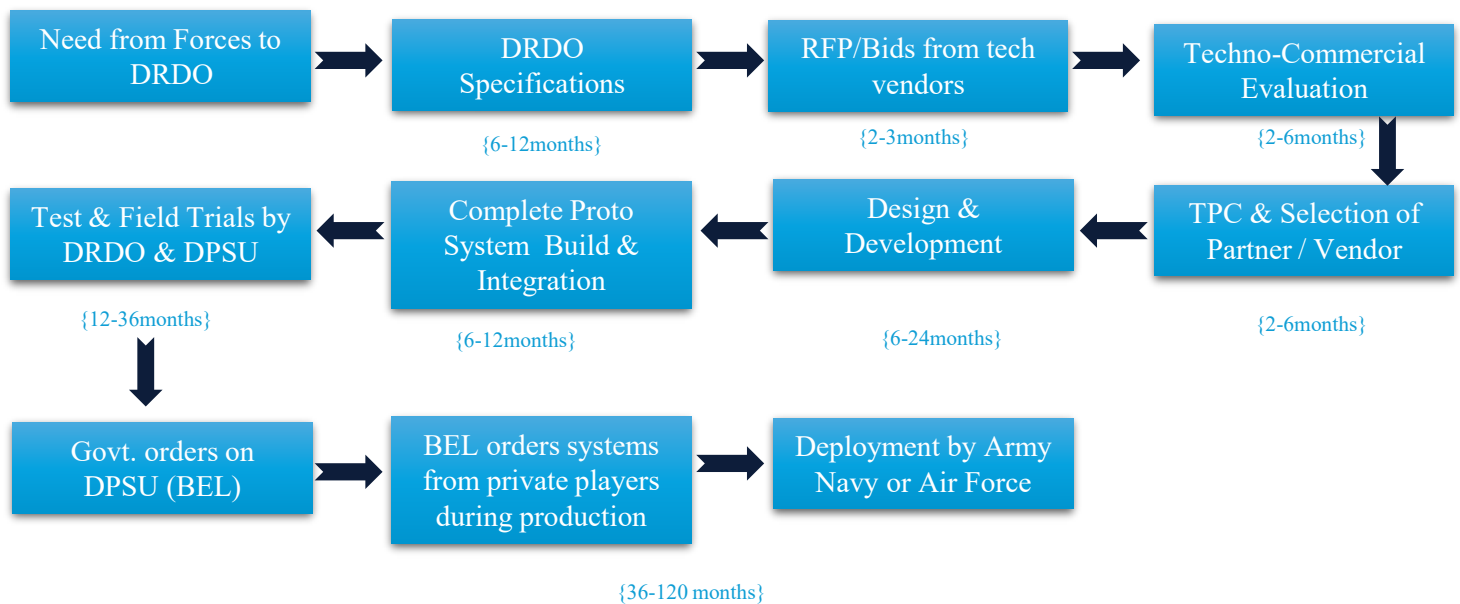
To build the technological foundation for these procurement categories, DAP 2020 includes specific procedures to catalyze indigenous research and development. The 'Make' categories are the cornerstone of this effort, designed to involve both public and private sector players in developing the next generation of defence hardware.

- Make-I (Government Funded):** This route is for the development of critical, high-technology systems that are strategically important but may be too capital-intensive or risky for the private sector to undertake alone. The government provides financial support of up to 70% of the prototype development cost, capped at ₹250 crore per development agency.
- Make-II (Industry Funded):** This category focuses on import substitution. It encourages Indian firms to use their own funds to develop prototypes of equipment or sub-systems that are currently imported. The key incentive for industry is an assurance from the Ministry of Defence (MoD) that if the developed product meets the military's requirements, a procurement contract will be awarded, de-risking the private investment.
- Innovations for Defence Excellence (iDEX):** Recognizing the role of agility and innovation, the iDEX scheme was launched to create an ecosystem to foster startups and MSMEs in the defence and aerospace sectors. It provides grants, incubation support, and mentorship to help smaller, innovative companies develop new technologies for the armed forces.

Offset Policy

For very large global procurements (typically those exceeding ₹2,000 crore or approximately US\$240 million), DAP includes an offset policy. This policy mandates that the winning foreign vendor must reinvest a certain percentage of the contract's value (usually 30% or more) back into India's aerospace and defence ecosystem. This can be done through various avenues, such as direct investment in Indian defence companies, purchasing goods or services from Indian suppliers, or transferring technology to an Indian partner. The policy is designed to leverage India's large procurement budget to build domestic capabilities. However, it is important to note that recent revisions have made offset clauses non-applicable in certain cases, such as inter-governmental agreements (IGAs) and single-vendor contracts, to streamline procurement.

Understanding a Defense Design Win



- Gestations of 4-7 years: DesignWin established after design, build, test, qualification, integration, acceptance and deployment
- Once design-Win is secured it cannot be replaced during the entire lifecycle of the program: typically, of 15-30 years
- Ensures significant visibility into future revenues
- Higher volumes and margins during production

The Structured Procurement Pathway

The lifecycle of a typical defence order follows a well-defined, sequential path, managed by the Ministry of Defence (MoD) and its various constituent bodies.

1.Acceptance of Necessity (AoN): This is the formal genesis of any procurement. The process begins when one of the armed forces (Army, Navy, or Air Force) identifies a need for new equipment. This requirement is then presented to the **Defence Acquisition Council (DAC)**, a high-level body chaired by the Defence Minister. If the DAC is convinced of the need, it grants an AoN, which is the official approval to initiate the procurement process. The AoN specifies the quantity, broad technical parameters, procurement category (e.g., Buy Indian-IDDM), and estimated cost.

2.Request for Information (RFI) / Request for Proposal (RFP): Following the AoN, the MoD typically issues an RFI to the broader industry to gauge the capabilities of potential vendors and refine the technical requirements. Based on the responses, a detailed RFP is prepared and issued. The RFP is a comprehensive legal and technical document that formally invites bids. It includes detailed qualitative requirements (technical specifications), evaluation criteria, delivery timelines, maintenance requirements, and commercial terms.

3.Vendor Evaluation (The Three Gates): This is the most critical and intensive phase of the process. Interested vendors submit their bids, which are usually divided into separate technical and commercial proposals. These bids are then subjected to a multi-stage evaluation.

•**Technical Evaluation:** A committee of technical experts scrutinizes the technical bids to ensure that the proposed equipment meets every single specification laid out in the RFP. Only bidders who are fully compliant are allowed to proceed to the next stage.

•**Field Trials:** The equipment from the technically qualified vendors is then subjected to extensive field trials in actual operational environments. These trials are conducted by the armed forces to validate the equipment's performance, durability, and suitability for Indian conditions.

•**Commercial Evaluation:** After the trial reports are finalized, the commercial bids of only those vendors who successfully cleared the technical and trial stages are opened. The contract is typically awarded to the bidder who is compliant with all requirements and has quoted the lowest price, known as the L1 bidder.

4.Contract Negotiation and Award: The selected L1 vendor then enters into final contract negotiations with the MoD to finalize all terms and conditions. Once an agreement is reached, the contract is signed, and the project moves into the execution and delivery phase.

The Shift to Competitive Tendering

A monumental reform in this landscape is the government's recent and decisive shift away from awarding contracts on a nomination basis, particularly to state-owned Defence Public Sector Undertakings (DPSUs). Historically, many large and strategic projects were reserved for DPSUs. The new policy mandates that all major projects, from shipbuilding to the development of next-generation fighter aircraft like the Advanced Medium Combat Aircraft (AMCA), will be awarded through a competitive tendering process. This move is aimed at ensuring "genuine price discovery" and creating a level playing field, allowing private sector companies to compete directly with DPSUs for high-value contracts. This is arguably one of the most significant changes to open up the market for private players.

Emergency Procurement Powers

Recognizing that the standard procurement process is too slow for urgent operational needs, the government has instituted provisions for emergency procurement. During times of conflict or heightened border tensions, the armed forces are granted special financial powers to fast-track the purchase of critical equipment. This mechanism bypasses many of the standard procedural stages and allows for the procurement of necessary items, such as drones, missiles, and ammunition, within a compressed timeline of just 3 to 6 months, ensuring rapid enhancement of combat readiness.

The deliberate architecture of DAP 2020, combined with the structural reform of mandating competitive bids, has created a unique and protected ecosystem for capable Indian companies. The prioritization of domestic firms with high indigenous content effectively creates a non-tariff barrier for many foreign competitors, reserving a significant portion of the defence budget for local industry. Simultaneously, by ending the nomination-based system for DPSUs, the government has unlocked a vast addressable market for the private sector. This is not merely a procurement policy; it is a comprehensive industrial strategy. The tangible outcome of this strategy is a multi-decade, policy-supported growth runway for the Indian defence industry. This high degree of policy certainty and market visibility provides a powerful de-risking factor for companies and investors willing to make long-term capital commitments to building defence capabilities in India, a fact underscored by the nation's soaring defence exports.

Axiscades Value Chain

Supply Side

Demand Side

Category	Details
Human Capital	Core: Aerospace, Defence, and Digital Engineers
Software Tools	CAD, PLM, FEA tools – CATIA, Siemens NX, SolidWorks, ANSYS, etc.
Certifications & Compliance	AS9100D, ISO 9001, ISO 27001 (critical for Aerospace & Defense)
Vendors & Subcontractors	Outsourced tasks: testing, special simulations, third-party fabrication
Prototyping Materials	Metals, composites, electronic components for defence prototypes
Infra, Test Units, Manufacturing facilities	Investment in infrastructure to develop prototypes and generate product revenues
Partnerships	OEMs like Airbus, HAL, BEL, and Offset agreements

Stage	Description	Examples / Details
1. Demand Drivers (Macro)	Broad trends creating demand for ER&D services	- EV adoption, ADAS - Aerospace backlog - Defence indigenization (Atmanirbhar Bharat) - Digital transformation in manufacturing - Semiconductor push
2. Customers (OEMs & Tier-1s)	Key clients that outsource engineering & digital services	- Aerospace: Airbus, Boeing - Automotive: UK OEM, Tier-1s - Defence: MoD, global primes - Industrial: Earthmoving OEMs
3. Demand Needs / Projects	The type of problems or work outsourced to AXISCADES	- Product design, prototyping - Embedded systems & software testing - Wiring harness, - System Integrations etc.
4. Services by AXISCADES	Core offerings to meet the demand	- Mechanical + digital engineering - Embedded systems (ADAS, infotainment) - Defence systems integration - AI/ML, automation - Testing, validation
5. Delivery Infrastructure	How services are delivered	- 17 Global delivery centres - 3,000+ engineers - Onshore + offshore hybrid model
6. Value Addition & Outcomes	Why clients choose AXISCADES	- Faster time-to-market - Cost-efficiency - Access to specialized domain knowledge - Compliance with global standards (esp. aerospace, defence)

Human Capital

Employee Metrics	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR
Total Headcount	1486	1603	1761	2,111	2147	2,139	1,886	2,300	2,685	3,131	2,891	9%
Revenue Per Employee (Rs. Crs)	0.21	0.23	0.28	0.25	0.28	0.31	0.28	0.27	0.31	0.31	0.36	4%
Cost Per Employee (Rs. Crs)	0.14	0.14	0.14	0.13	0.16	0.17	0.14	0.14	0.13	0.16	0.18	2%
Core	NA									1,664	1639	
Non Core										1,220	999	
Support										247	253	
Attrition Rate (%)	NA								20%	16%	19%	

High Attrition rates can lead to higher hiring and training costs. So it is important to retain good talent and keep the attrition low.

Ability to manage their employee benefit expenses is heavily impacted by our onshore and offshore resource mix.

AXISCADES is leveraging automation to scale operations without proportional increases in headcount, enhancing scalability and profit margins—especially in fixed-price contracts. The digital team plays a key role in driving efficiency, profitability, and future-readiness.

They are also moving towards Tier2 cities to lower the cost of employees.

Employee metrics will improve going ahead as business switches from Linear Employee led growth to Non-Linear, Products and solution led growth.

Infrastructure Investment & Capex Plans

To support its long-term vision, AXISCADES is making strategic investments in infrastructure through the development of the Devanahalli Atmanirbhar Complex (DAC) on a 20-acre campus in Bangalore.

Phase 1 (FY25 completion) focuses on Radar and Electronic Warfare systems—covering development, manufacturing and testing. Estimated cost: ₹250 Cr; ₹120 Cr (Phase 1A) to be internally funded.

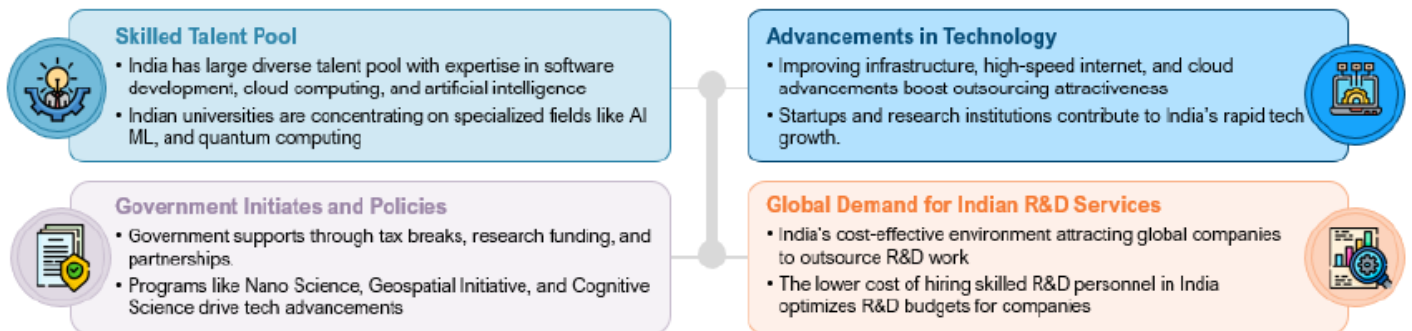
Phase 2 will expand into a Missile Atmanirbhar Cluster (MAC) and MRO for missile systems, supported by a new facility in Hyderabad.

Phase 3 targets full-fledged MRO and supply chain infrastructure for aerospace and defence clients, to be constructed over the next 3 years.

Funding will be structured through Axis Aerospace Infra Pvt Ltd (AAIPL), with management favoring strategic partnerships over equity dilution. Non-core businesses may be divested to fund later phases.

Industry Growth Drivers

Key Growth Drivers of Indian ER&D Spending



Supportive Policies and Regulations for ER&D Outsourced Market in India



Company Growth Drivers

1. Strategic Acquisitions

AXISCADDES has accelerated growth through targeted acquisitions that enhance its technological depth and geographic reach. The acquisition of **Mistral Solutions** brought in capabilities in high-margin segments like defence electronics, embedded systems, and aerospace product design. Mistral also enabled Axiscades to participate in India's growing defence production ecosystem. Similarly, the acquisition of **add Solution GmbH** in Germany provided access to the European automotive embedded systems market, especially in e-mobility and ADAS engineering.

2. Adding New Logos / Clients

Axiscades is actively expanding its client base across all core verticals. Over the last few years, it has added several new global logos. These new clients represent long-term revenue potential and often enter through pilot projects that gradually scale to larger, multi-year engineering contracts. This diversification reduces the company's dependency on a few major accounts and improves revenue visibility across geographies.

3. Increased Orders from Existing Clients

The company continues to deepen relationships with its key clients like **Airbus and Texas Instruments**, who have been increasing the scope and value of their engagements. These clients are expanding into new geographies, increasing offshore workload, and entrusting Axiscades with more complex, higher-value engineering tasks.

4. Focus on High-Realization, Specialized Offerings

A key strategic shift for Axiscades has been its focus on **high-realization, high-margin services**. The company is prioritizing embedded systems, IP-led product engineering, and custom electronics design over generic engineering services.

5. Ramping up order book backlog: A growing backlog indicates that the company is securing more orders than it can currently fulfill, which is a strong signal of demand for its products/services. It reflects future revenue and can drive growth as the company works to fulfill these orders. It also demonstrates that the company has a sustainable sales pipeline, which can attract investors and build market confidence.

Return Matrix

Gross Profit Margin

Particulars	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR	Median
Revenue from contracts with customers	318	375	487	519	608	673	524	610	822	955	1,031	12%	
YoY Growth		18%	30%	7%	17%	11%	-22%	17%	35%	16%	8%		16%
COGS	-	-	67	55	95	103	98	117	179	185	213	16%	
YoY Growth				-18%	72%	9%	-4%	18%	54%	4%	15%		12%
As a % of Revenue			14%	11%	16%	15%	19%	19%	22%	19%	21%		19%
Cost of raw material and components consumed	-	-	67	55	95	103	98	117	144	163	188		
Purchase of traded goods	-	-	-	-	-	-	-	-	34	23	17		
Decrease in inventories of finished goods, work-in-progress and traded goods	-	-	-	-	-	-	-	-	1	0	8		
Gross Profit	318	375	420	464	513	570	425	494	642	770	817	10%	
Gross Profit Margins	100%	100%	86%	89%	84%	85%	81%	81%	78%	81%	79%		84%

Revenue –

Trend – Revenue is growing at a CAGR of 13% due to all the growth drivers.

Fluctuations –

FY17 - The primary reason for the high revenue growth in FY17 is explicitly stated as being "mainly attributable to the acquisition" of ACATL. The consolidated financial statements for FY17 include the financials of ACATL, which became a 100% subsidiary.

FY18 - Revenue growth slowed in 2018 primarily due to organic slowdown which was influenced by flat or declining performance in the Aerospace and Automotive verticals and a high base following the significant ACATL acquisition in FY17.

FY19 - The full integration of Mistral Solutions, coupled with sustained growth in Engineering Services and successful new customer additions, propelled AXISCADES' revenue recovery in FY2019, overcoming segment-specific challenges.

FY20 - Revenue growth slowed in FY20 primarily due to the initial impact of the COVID-19 pandemic, specifically lockdowns in March 2020 that affected revenue from Mistral Solutions Private Limited and led to a decline in the Asia Pacific region

FY21 - The significant revenue degrowth in FY21 was overwhelmingly due to the widespread impact of the COVID-19 pandemic, leading to a contraction in the Aerospace vertical and softness in demand across Heavy Engineering and Strategic Technology Solutions segments due to lockdowns

FY22 - Revenue growth recovered in FY22 with a 17.6% year-on-year increase due to a strong rebound in key verticals like Aerospace (32.6% YoY) and Heavy Engineering (28.2% YoY), driven by improved business from existing clients, new customer acquisitions, and a growing order book

FY23 - The sharp YoY rise in revenue in FY23 (33.7% in INR terms) was a result of broad-based growth across all verticals, particularly strong performance in Aerospace (44.3% YoY), Products and Solutions (Defense) business (51.3% YoY), and remarkable growth in Automotive (65.2% YoY) and Energy (51.1% YoY) segments

FY24 – Revenue growth slowed to 17% in FY24 due to global macroeconomic volatility and declines in Heavy Engineering and Product Engineering Services (including semiconductors due to customer overstocking), despite strong performance in Aerospace, Automotive, and Energy segments

Cost Of Goods Sold –

Trend – COGS is growing at a CAGR of 16% faster than Revenue due to strategic shift of business from Services to Products and solutions. It will continue to rise until the management will reach desired levels of Products and Services mix and will settle after that.

Fluctuations –

FY17 – The "Cost of Materials Consumed" line item appeared in AXISCADES' P&L from FY17 due to the acquisition and consolidation of AXISCADES Aerospace & Technologies Private Limited (ACATL). This acquisition introduced a significant product-oriented business (Strategic Technology Solutions, including "Sale of goods") with inherent and substantial material costs, requiring a distinct reporting category for transparent financial presentation

FY18 – COGS as a % of revenue came down to 11% from 14% in FY17. This was mainly because Sale of services a % of total rose from 82% to 86% against Sale of goods which fell from 18% to 14% in FY18.

FY19 - The substantial rise in COGS as a % of revenue in FY19 was a direct consequence of the company's strategic acquisition of Mistral Solutions and the resultant shift towards a higher proportion of product sales within its revenue mix, which carry inherently higher material costs compared to its traditional service offerings.

FY21 - COGS as a percentage of revenue rose sharply in FY21 to 19.04% because of a significant 22% year-on-year decline in total revenue majorly from the services revenue whereas goods revenue didn't degrow. This led to rise in share of revenue from goods from 22% to 30% in FY20 hence increasing COGS as % of Revenue.

Operating Profit Margin

Particulars	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR	Median
Employee benefits expense	201	228	251	284	350	361	267	312	361	500	516	10%	
YoY Growth		13%	10%	13%	23%	3%	-26%	17%	16%	39%	3%		13%
As a % of Revenue	63%	61%	52%	55%	58%	54%	51%	51%	44%	52%	50%		52%
Other expenses	75	94	90	108	151	117	95	111	136	136	158	8%	
YoY Growth		26%	-4%	20%	39%	-22%	-19%	17%	23%	0%	16%		17%
As a % of Revenue	23%	25%	19%	21%	25%	17%	18%	18%	17%	14%	15%		18%
Project consultancy charges	-	-	40	55	-	-	-	-	-	-	-		
As a % of Revenue	0%	0%	8%	11%	0%	0%	0%	0%	0%	0%	0%		
EBITDA	42	53	39	18	12	92	64	71	146	133	142	13%	
EBITDA Margins	13%	14%	8%	3%	2%	14%	12%	12%	18%	14%	14%		13%
Depreciation and amortisation expense	9	10	12	19	20	33	26	25	27	34	40	16%	
As a % of Revenue	3%	3%	3%	4%	3%	5%	5%	4%	3%	4%	4%		
EBIT	32	43	27	-1	-8	59	38	46	119	99	103	12%	
EBIT Margins	10%	12%	5%	0%	-1%	9%	7%	7%	14%	10%	10%		9%

Employee benefit expense –

Trend – Employee benefit expense is growing at a CAGR of 11% almost linear to 13% CAGR of revenue. This is because AxisCADES is still largely a Services business. As and when product revenue starts going up, EBE will tend to go down as a % of revenue. It has been in a range of 50-55%.

Fluctuations –

FY15 and FY16 - Employee Benefits Expenses were high (over 60% of revenue) in FY15 and FY16 because AXISCADDES was predominantly an Engineering Design Services company, a human capital-intensive business, and was actively investing in workforce expansion and senior hiring for future growth.

FY17 - The percentage dipped to 52% in FY17 due to the acquisition and consolidation of ACATL, which introduced product sales ("Sale of goods") and a new, substantial "Cost of Materials Consumed", thereby spreading the overall cost structure over a larger and more diversified revenue base

FY 19 - The rise in FY19 was driven by the full-year consolidation of Mistral Solutions, leading to increased absolute employee costs, compounded by and operational inefficiencies that impacted overall profitability

FY20 - The percentage settled down in FY20 due to strong overall revenue growth (10.7%) and the company's emphasis on cost optimization and efficiencies, helping to absorb the absolute increase in employee costs

FY23 - Employee benefits expenses fell to 44.36% of revenue in FY23, primarily due to record 33.7% consolidated revenue growth and a more favorable revenue mix from the acquisition of Mistral Solutions, which included product sales with proportionally lower employee costs. Management also emphasized efforts to "break the linearity between revenue growth and head count" by focusing on automation and digitization to enhance productivity.

FY24 - The percentage normalized to 52.52% in FY24 as absolute employee costs increased significantly by 39%. This rise was due to new acquisitions like add solutions and Epcogen, an approximate addition of 500 billable resources, and strategic investments in a non-billable digital team and senior leadership.

Other Expenses –

Trend – The slower 7.9% CAGR of 'Other Expenses' compared to Revenue's 12.8% CAGR demonstrates operating leverage. This is primarily due to the reclassification of lease expenses (rent) under Ind AS 116 from FY20 onwards, and operational efficiencies such as insourcing project consultancy and a favorable revenue mix including product sales from acquisitions like Mistral

Fluctuations –

FY15 and FY16 - FY15 and FY16's high 'Other Expenses' as a percentage of revenue were primarily due to increased operational costs like infrastructure usage and travel, coupled with a near-doubling of "Project consultancy charges" (an investment for new growth areas) which were then classified under 'Other Expenses'

FY17 - The sharp fall in this percentage in FY17 stemmed mainly from the reclassification of "Project-related expenses" as a distinct line item on the P&L statement, combined with significant revenue growth (28.8%), partly from the ACATL acquisition.

FY18 and FY19 - It then increased in FY18 and FY19 primarily due to substantial provisions for doubtful debts and advances (including one-time provisions for US customers), rising foreign currency losses, new provision for inventories and Sub contracting charges getting reported from FY19.

FY20 - The sharp fall in 'Other Expenses' as a percentage of revenue in FY20 was largely due to the reclassification of lease expenses out of this category (due to Ind AS 116 adoption), along with a decrease in provisions for doubtful debts and reduced project consultancy charges. It then remained stable from FY21-FY23, as revenue fluctuations (e.g., COVID-19 impact in FY21) and ongoing cost management balanced increases in other general expenses.

FY24 - The sharp fall in the percentage again in FY24 was primarily attributed to significant revenue growth (17%) which outpaced the relatively stable absolute 'Other Expenses', indicating improved operational efficiency and the impact of digitalization initiatives.

Depreciation and Amortization -

Trend – Depreciation as a % of revenue has stayed in the range of 3-5%. This may change going ahead depending on the CAPEX plans and the method of depreciating it and the asset turnover that CAPEX brings.

Net Profit Margin

Particulars	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR	Median
Finance costs	2	2	13	14	24	28	23	16	36	56	32	30%	
As a % of Revenue	1%	0%	3%	3%	4%	4%	4%	3%	4%	6%	3%		3%
Other income	2	4	15	15	9	8	14	9	6	10	21	29%	
As a % of Revenue	1%	1%	3%	3%	1%	1%	3%	1%	1%	1%	2%		1%
EBT before Associate	32	45	28	0	-22	38	30	39	89	53	91		
Share in loss of an associate, net of tax	-	-	-	-	-1	0	0	-0	-0	-0	-0		
Exceptional items	3	1	1	-3	15	-	-41	-2	-68	-	-4		
EBT	29	45	29	-3	-8	38	-10	37	21	53	87	12%	
EBT Margins	9%	12%	6%	-1%	-1%	6%	-2%	6%	3%	6%	8%		6%
Income Tax Expense	9	16	14	5	-1	8	11	14	26	20	12	3%	
As a % of Revenue	3%	4%	3%	1%	0%	1%	2%	2%	3%	2%	1%		
Effective Tax rate	31%	35%	50%	-181%	9%	21%	-104%	38%	123%	37%	14%		31%
PAT	19	29	15	-8	-8	30	-21	23	-5	33	75	14%	
PAT Margins	6%	8%	3%	-2%	-1%	5%	-4%	4%	-1%	3%	7%		3%

Finance Costs -

Trend – Finance Cost as a % of revenue has stayed in the range of 3-5%. It got to 6% in the recent years because of the high cost debt that the company took for the complete Mistral Acquisition which has again gone down in FY25 after paying the debt back from the proceeds of QIP.

Other Income -

Trend – Have stayed constant as a % of revenue over the years.

Exceptional Items -

FY21 – The company incurred exceptional losses in FY21 (₹4,079.80 lakhs) due to goodwill impairment largely caused by the COVID-19 pandemic's impact on the Aerospace sector

FY23 - In FY23, another significant exceptional charge of ₹6,803.74 lakhs arose from a one-time arbitration award related to the Mistral acquisition. Both were deemed non-recurring events and not indicative of persistent operational issues or "red flags" for the company's ongoing health

Effective Tax Rate –

The effective tax rate for AXISCADES shows significant annual fluctuations, primarily due to the company shifting between pre-tax profit and loss positions. These swings are often amplified by large, one-time exceptional items, such as the goodwill impairment related to COVID-19 in FY21 or the arbitration award for the Mistral acquisition in FY23. While noticeable, these fluctuations are generally explainable by distinct, non-recurring financial events or shifts in profitability, and therefore, are not considered persistent "red flags" for the company's ongoing operational health.

Tax will be 25% going forward as company has exercised the option of availing lower tax rate under section 115BAA of Income tax act.

Asset Turnover

Particulars	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Median
Revenue from contracts with customers	318	375	487	519	608	673	524	610	822	955	1,031	
YoY Growth		18%	30%	7%	17%	11%	-22%	17%	35%	16%	8%	
Total Assets	188	545	459	758	771	859	742	794	904	1139	1127	
YoY growth		190%	-16%	65%	2%	11%	-14%	7%	14%	26%	-1%	
Fixed Assets	49	159	165	344	340	262	192	198	197	261	268	
YoY growth		225%	4%	108%	-1%	-23%	-27%	3%	-1%	33%	2%	
Total Asset turnover	1.7	0.7	1.1	0.7	0.8	0.8	0.7	0.8	0.9	0.8	0.9	0.8
Fixed Asset turnover	6.5	2.4	2.9	1.5	1.8	2.6	2.7	3.1	4.2	3.7	3.8	2.9

Asset Turnover –

Asset turnover fell whenever there was a significant acquisition like in FY16 of AXISCADES Aerospace and Technologies Private Limited (ACATPL) and Mistral in FY18.

The business wasn't fixed asset driven earlier but going forward as the Products and solutions revenue increase as per management guidance there will be a need of Fixed assets like PPE for manufacturing/assembling products for clients which might bring down turnovers in the start, but will get back to normalized levels as and when capacity utilization ramps up.

Leverage

Particulars	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Median
Total Assets	188	545	459	758	771	859	742	794	904	1139	1127	
Debt	26	74	81	138	152	172	104	72	346	319	258	
Equity	125	291	304	295	289	320	304	337	344	592	656	
Debt/Equity	0.2	0.3	0.3	0.5	0.5	0.5	0.3	0.2	1.0	0.5	0.4	0.4
Leverage (Total assets/Equity)	1.5	1.9	1.5	2.6	2.7	2.7	2.4	2.4	2.6	1.9	1.7	2.4

Leverage -

The acquisition of Mistral Solutions Private Limited (MSPL) starting in FY18 . The initial financing of this acquisition predominantly through significant "Purchase Consideration Payable", which functioned as a large financial liability (deferred debt) and inflated the asset base from FY18 through FY22

The subsequent conversion of this large deferred purchase consideration into substantial direct borrowings (e.g., debentures) in FY23, which caused a sharp, multi-fold increase in the company's direct debt and consequently its leverage ratios in that year. This made the debt levels explicitly and significantly high in FY23.

ROE

Particulars	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Median
Profit after tax	19	29	15	-8	-8	30	-21	23	-5	33	75	
Revenue from operations	318	375	487	519	608	673	524	610	822	955	1,031	
Total Assets	188	545	459	758	771	859	742	794	904	1139	1127	
Equity	125	291	304	295	289	320	304	337	344	592	656	
Leverage	1.5	1.9	1.5	2.6	2.7	2.7	2.4	2.4	2.6	1.9	1.7	
Total Assets turnover	1.7	0.7	1.1	0.7	0.8	0.8	0.7	0.8	0.9	0.8	0.9	
PAT Margins	6%	8%	3%	-2%	-1%	5%	-4%	4%	-1%	3%	7%	3%
PAT Margins excluding JV/Associate and EI	7%	8%	3%	-1%	-4%	4%	4%	4%	8%	3%	8%	4%
ROE	15%	10%	5%	-3%	-3%	9%	-7%	7%	-1%	6%	11%	6%
ROE excluding JV/Associate and EI	18%	10%	5%	-2%	-7%	9%	6%	7%	18%	6%	12%	7%
ROE (Leverage Constant)	15%	8%	5%	-2%	-1%	5%	-4%	4%	-1%	4%	10%	4%
ROE (Asset Turnover Constant)	15%	24%	8%	-7%	-6%	20%	-17%	15%	-3%	11%	21%	11%
ROE (PAT Margins Constant)	15%	8%	10%	11%	13%	13%	11%	11%	15%	10%	10%	11%

ROE

ROE = Net profit margin x Asset Turnover x Liability.

The most impactful drivers of AXISCADES' ROE in recent years have been the fluctuations in its PAT Margins, largely influenced by external economic factors (like COVID-19) and significant acquisition-related costs. Leverage has played a magnifying role, intensifying both positive and negative returns until FY24, when a strategic debt reduction initiative significantly lowered the high cost debt and increased PAT margins.

ROIC

Particulars	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
EBIT	32	43	27	-1	-8	59	38	46	119	99	103
NOPAT (EBIT-Cash tax)	27	31	3	-10	-20	44	39	33	106	78	78
NOPAT Growth		15%	-89%	-380%	106%	-317%	-11%	-16%	227%	-27%	1%
NOPAT Margin	8%	8%	1%	-2%	-3%	6%	7%	5%	13%	8%	8%
Fixed Assets	49	159	165	344	340	262	192	198	197	261	268
Working Capital	49	77	59	146	138	136	100	127	170	240	304
Invested Capital	98	235	224	490	477	398	292	326	366	501	572
YoY Growth		141%	-5%	119%	-3%	-17%	-27%	11%	13%	37%	14%
Invested Capital Turnover	3.25	1.60	2.17	1.06	1.27	1.69	1.79	1.87	2.24	1.91	1.80
ROIC	28%	13%	2%	-2%	-4%	11%	13%	10%	29%	16%	14%
ROIC Pre Tax	33%	18%	12%	0%	-2%	15%	13%	14%	32%	20%	18%

Re-Investment Rate

Particulars	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Median
Capex for the year	5	8	29	48	10	6	6	14	201	21	27	
Working capital changes	6	14	8	55	-10	23	-52	38	77	47	23	
CFO before WC	42	57	40	25	40	103	69	82	160	148	136	
Reinvestment rate = Capex + changes in WC/CFO	24%	39%	92%	405%	0%	28%	-67%	63%	173%	46%	37%	39%

ROIC and Re-Investment rate

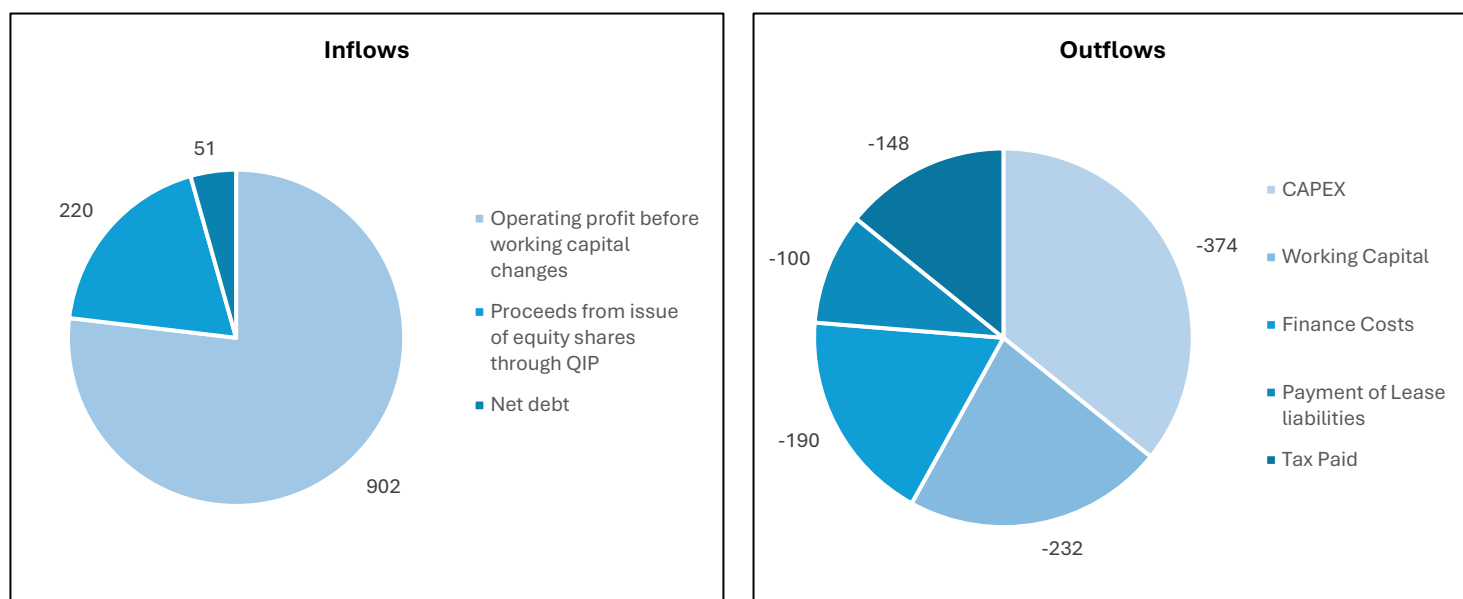
EBIT Growth comes from High ROIC and High Re-Investment rate. But it can be a double edged sword if ROIC is lower than Cost of Capital.

Sometimes Invested capital can also be debt funded which will bring additional EBIT growth if ROIC is high.

In summary, while the theoretical relationships hold true, the company's financial performance from FY2018 to FY2023 was frequently influenced by material one-time expenses, acquisition-related costs, and economic headwinds (like COVID-19). These factors significantly impacted EBIT and NOPAT, masking the direct correlation with reinvestment in several periods. The high cost debt substantial increase in FY2023 due to the Mistral acquisition debt, clearly demonstrates the dynamic role of debt in the company's capital structure and its profound impact on financial performance, including profitability metrics like PAT and ROE.

The high ROIC in 2023 (29%) despite a negative PAT reflects a strong underlying operating performance (high EBITDA margin) that was then significantly eroded by the "exceptional item" of high finance and acquisition-related costs.

Fund Flow



Majority of Inflows is coming from Operating profits before WC changes which is a good sign. 220 Crores have been raised through equity to service a high cost debt which was taken for the Mistral Acquisition. Majority of the inflows is used to fund CAPEX and Working capital requirements which can be seen as a good sign. Finance costs have also been a major part of outflows because for the high cost debt in the past which will come down in the subsequent years so more cash will be left for re-investment.

Table of Debt

Particulars	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Debt	26	74	81	138	152	172	104	72	346	319	258
Long Term Borrowings	1	29	27	73	49	39	21	0	171	106	109
Non-Current Lease Liabilities	0	0	0	0	0	17	21	11	22	64	50
Short Term Borrowings	25	45	54	65	83	83	52	48	143	133	80
Current Lease Liabilities	0	0	0	0	0	10	10	12	9	16	18
Current Portion of LTB	1	0	0	0	20	22	0	0	0	0	0
Finance Costs	2	2	13	14	24	28	23	16	36	56	32
Avg total cost of debt	9%	2%	16%	10%	16%	16%	22%	22%	10%	18%	13%
Interest Coverage Ratio	14	24	2	0	0	2	2	3	3	2	3
Debt as a % of Total Asset	14%	14%	18%	18%	20%	20%	14%	9%	38%	28%	23%
Debt/Equity	0.2	0.3	0.3	0.5	0.5	0.5	0.3	0.2	1.0	0.5	0.4

Debt has been majorly taken to fund WC requirements and Acquisitions. Debt/Equity has been stable over the years and shot up at FY23 because of the Mistral 100% takeover, For which company had to take high cost debt through NCD's and Promoter group to fund the immediate acquisition, which later got back to normalized levels in FY25 as Company serviced that debt raising a QIP and utilizing its proceeds.

Table of Equity

Particulars	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Equity share capital	14	19	19	19	19	19	19	19	19	21	21
Other equity	112	270	283	273	266	296	280	312	319	564	628
Securities premium	44	102	102	101	101	101	101	102	104	312	
Capital reserve	-	57	57	57	57	57	57	57	57	57	
Hedge reserve	-0	0	2	0	-1	-3	-1	0	0	0	
Foreign currency translation reserve	8	0	-2	-1	1	4	6	9	14	16	
Retained earnings	61	110	124	116	107	136	113	135	129	160	
General reserve	-	0	0	0	0	0	0	0	0	0	
Share based payment reserve	-	0	0	0	0	2	3	9	14	18	
Capital contribution reserve	-	0	0	1	1	1	1	1	1	1	
Other reserves	-	0	0	0	-1	-1	0	0	0	0	
Non-controlling interests	0	3	3	3	4	4	5	5	6	6	7
Total Equity	125	291	304	295	289	320	304	337	344	592	656
Minority Interest	2	0	0	0	0	0	0	0	0	0	0
History of Dilution, Bonus/Splits											
The company issued 7,229,112 equity shares as consideration for the merger of Cades Digitech Private Limited. Cades Digitech, an engineering services provider focused on Aerospace and other sectors, merged with Axis IT&T in 2015 to unify their brands (as AXISCADES) and create a holistic technology solutions offering for accelerated growth		AXISCADES Technologies Limited (ACETL) issued 10,569,937 new equity shares in 2017 to amalgamate India Aviation Training Institute Private Limited (IAT IPL). This strategic move was primarily to acquire IAT IPL's wholly-owned subsidiary, AXISCADES Aerospace & Technologies (ACATL), aiming to strengthen AXISCADES' position in the Aerospace, Defence, and Homeland Security sectors. The swap ratio for this issuance was 10 equity shares of ACETL (at ₹5 each) for every 45 equity shares held in IAT IPL (at ₹10 each)				A pivotal event was the Qualified Institutional Placement (QIP), where 3,323,262 equity shares were allotted, raising ₹219.99 crores primarily for debt reduction					

Acquisition Table

Date	Acquired	Company Info	Cash consideration	Contingent Consideration	Stake Acquired	Contingent stake
Jun-23	add solution GmbH	add solution GmbH is based in Wolfsburg, Germany. The company provides automotive design and development services such as wiring systems, testing, and automation for global automotive Original Equipment Manufacturers (OEMs)	46	5	94%	6%
Dec-23	Epcogen Private Limited	Engaged in the business of providing engineering design and solutions to the energy sector	26	7	100%	
FY23	Mistral	Semiconductors and Defence	300		100%	

Management Background, Competence and Integrity

Part 1: Executive Summary & Strategic Context: The 2025 Leadership Overhaul

1.1. Overview: A Deliberate Strategic Pivot

In a decisive and strategic pivot, AXISCADES Technologies has embarked on a fundamental transformation of its corporate identity and business model. The company has explicitly articulated its evolution from a traditional engineering services provider into an integrated, "Product-Driven, Non-Linear, Technology Company". This shift is not merely semantic; it represents a comprehensive realignment of its operational focus, market positioning, and value proposition. The new strategy is built upon three core pillars: Aerospace, Defence, and ESAI (Electronics, Semiconductors, and Artificial Intelligence). These domains are no longer viewed as separate service lines but as interconnected verticals where the company aims to deliver end-to-end solutions.

Central to this new vision is the ambition to become a "Chip-to-Product" provider, a capability inherited and now being scaled from its subsidiary, Mistral Solutions. This model signifies a significant move up the value chain, extending the company's offerings from conceptual design and engineering services to encompass the entire product lifecycle, including semiconductor design, system integration, manufacturing, and aftermarket support. This strategic reorientation is designed to capture higher-margin opportunities, create recurring revenue streams, and establish a more defensible competitive position in the global technology landscape.

1.2. The Architecting of a New Leadership Cadre: A Coordinated Transformation

The strategic pivot was precipitated and is being driven by a comprehensive and rapid overhaul of the company's leadership, executed primarily in the first half of 2025. This was not a series of isolated personnel changes but a coordinated maneuver designed to install a management team with the precise skills and experience required to execute the new vision. The transformation began with the resignation of the former CEO and Managing Director, Arun Krishnamurthi, in early January 2025. This was immediately followed by a sequence of high-impact appointments that collectively reshaped the company's governance and operational command structure.

Key among these were the appointments of Alfonso Martinez, a seasoned global engineering services executive, as the new Group CEO and Managing Director, and the return of industry luminary Dr. Sampath Ravinarayanan to the role of Chairman. The architecture of the new team was further solidified with the creation of powerful new C-suite positions, including a Deputy CEO for Aerospace (KP Mohanakrishnan) and a Chief Operating Officer (D Murali Krishnan), both appointed in April 2025.

A deeper analysis of these appointments reveals a sophisticated "Phoenix Strategy." The company has deliberately brought back former leaders who were instrumental during previous periods of significant achievement. This includes Dr. Ravinarayanan, who spearheaded the company's landmark Airbus contract in his prior tenure, and Ravikumar Joghee, who previously managed key aerospace accounts. This is not a retreat to the past but a calculated move to re-inject the company's foundational aerospace and defence DNA, providing a bedrock of proven experience and industry credibility for its futuristic ambitions. By placing these respected veterans in key mentorship and strategic roles, AXISCADES signals to the market that its transformation is an evolution grounded in historical strength, not a speculative departure from its core competencies. This blend of legacy expertise and new, global leadership is intended to de-risk the ambitious pivot and ensure that the "chip-to-product" vision is built upon a solid foundation of engineering excellence.

Part II: Board of Directors - Governance and Strategic Oversight

2.1. Dr. Sampath Ravinarayanan, Chairman

Current Role & Mandate: Dr. Sampath Ravinarayanan was appointed Chairman of the Board on January 28, 2025, shortly after rejoining the board as a Non-Executive, Non-Independent Director on October 12, 2024. His role transcends that of a typical chairman; he is also designated as "Director and Chief Mentor", a title that underscores his mandate to provide hands-on strategic guidance and leverage his immense industry stature to steer the company's transformation. His return is the linchpin of the new leadership structure, intended to provide stability, vision, and unparalleled domain expertise. **Professional Experience & Career Trajectory:** Dr. Ravinarayanan is widely recognized as a "pioneer and leader" in the Indian aerospace and defence industry, with a distinguished career spanning over four decades. His professional journey is notable for its breadth and impact:

•**Foundational AXISCADES Tenure:** As CEO and Chairman of AXISCADES until 2014, he was the driving force behind two of the company's most significant achievements. He was instrumental in securing the landmark Airbus Fuselage Development Centre contract and oversaw its implementation for the first three years. Concurrently, he established Axis Aerospace and Technology as a key subsidiary. He also spearheaded the successful implementation of the Mirage2000 midlife extension project in a strategic partnership with Thales International and MBDA, France.

•**Entrepreneurial Vision:** His involvement in the private defence sector dates back to 1983, when he founded Microcon Instruments and Systems, one of the first private Indian companies to participate in national defence programs.

•**Unique 360° Sector Experience:** Dr. Ravinarayanan possesses a rare and comprehensive perspective on the A&D sector, having served across its entire spectrum. This includes experience with the Indian government as a Board Member for Indian Airlines Ltd. and Air India Ltd. for a two-year period starting in 1997; with a foreign Original Equipment Manufacturer (OEM) as a founding member of the Board of Airbus Engineering Pvt. Ltd.; and with the Indian private sector through his leadership at AXISCADES. This claim is explicitly corroborated by company regulatory filings.

•**Industry Leadership:** He served as the Chairman of the Federation of Indian Chambers of Commerce and Industry (FICCI)'s Task Force on Aerospace and Defence from 2008 to 2011, shaping policy and industry dialogue at a national level.

Educational Credentials: In recognition of his exemplary contributions to the Indian aerospace and defence industry, Dr. Ravinarayanan was conferred with an *honoris causa* Doctor of Philosophy (Ph.D.) degree by the National Institute of Technology (NIT), Kurukshetra, in 2020. This distinction is definitively verified by NIT Kurukshetra's own Senate meeting minutes from February 2020, which document the formal approval of the honorary degree conferment.

Dr. Ravinarayanan's return to the helm as Chairman and Chief Mentor is the most critical element lending credibility to the company's new strategy. He acts as an "anchor," grounding the firm's future-focused technological ambitions in a legacy of proven success and deep-rooted relationships. His established network within the Indian defence establishment (including the Ministry of Defence, HAL, ISRO, and DRDO) and with global OEMs like Airbus and Thales is an invaluable asset. His presence serves to mitigate the perceived risks of a major strategic pivot and the appointment of a new, non-Indian CEO, assuring stakeholders of continuity and elite domain expertise at the highest level of governance.

2.2. Key Independent & Non-Executive Directors

The board is further strengthened by a cadre of directors whose collective expertise mirrors the company's hybrid strategic objectives. The composition is not monolithic but is instead a carefully assembled group designed to provide robust oversight across technology, defence, and finance.

•**Lt Gen Codanda Poovaiah Cariappa (Retd), Independent Director:** With a "remarkable track record of nearly 40 years" in the Indian military, Lt Gen Cariappa brings direct, high-level insight into the defence sector—a core market for AXISCADES. His presence ensures that the company's defence strategy is informed by an authentic understanding of the end-user's operational needs and procurement priorities.

•**Mariam Mathew, Independent Director:** Mrs. Mathew contributes to the board's diversity of thought and strengthens its corporate governance framework. Her experience outside the core A&D and IT sectors provides an essential external perspective, crucial for balanced decision-making.

•**Tanmoy Chakrabarty, Independent Director:** Mr. Chakrabarty's "impressive career spanning 42 years," predominantly in the IT industry, is vital for guiding the company's digital transformation. His expertise directly supports the "non-linear, technology company" ambition, particularly in the software-led aspects of the ESAI strategy and the integration of AI and digital engineering across all verticals.

•**David Abikzir, Non-Executive Director:** Mr. Abikzir's background includes experience with a "\$6 Billion fund, CDC IXIS Private Equity". This brings a sharp, investor-focused financial acumen to the board. His expertise in private equity, M&A, and strategic capital allocation is highly relevant for a company in a transformative growth phase that may involve further acquisitions or strategic investments.

•**Venkatraman Venkitachalam, Non-Executive Director:** With over two decades of "holistic experience," Mr. Venkitachalam adds another layer of financial and strategic oversight to the board, contributing to its overall governance and financial stewardship.

The board's composition is a direct reflection of the company AXISCADES aims to become. It is a hybrid structure built to govern a hybrid enterprise. The board combines the deep, legacy domain knowledge of defence and aerospace (Gen. Cariappa, Dr. Ravinarayanan) with the forward-looking expertise in digital transformation and IT (Mr. Chakrabarty). This is overlaid with the rigorous financial and M&A discipline of the private equity world (Mr. Abikzir). This is not a board for a simple services firm; it is a governance body constructed to oversee a complex organization that is simultaneously a defence contractor, a technology platform developer, and a strategic acquirer, perfectly mirroring the company's ambition to merge hardware-centric engineering with software-driven, non-linear growth.

Part III: The Executive Management Team - Driving the Transformation

3.1. Alfonso Martinez, CEO and Managing Director

Current Role & Mandate: Appointed effective January 20, 2025, Mr. Alfonso Martinez is tasked with spearheading the company's global expansion and its transformation into a leader across Engineering Services, Defence, and Deep Tech sectors. His clear mandate is to drive "transformational growth and value creation across all dimensions" of the business, leveraging his extensive global experience to execute the new corporate strategy.

Professional Experience & Career Trajectory: Mr. Martinez's career of over 25 years is characterized by leadership in large-scale, global engineering and technology service organizations.

- Quest Global:** Immediately prior to joining AXISCADES, he served as President and Global Business Head for the Automotive and Rail verticals at Quest Global. This role demonstrates recent, high-level P&L responsibility and domain expertise in key mobility sectors that are also target markets for AXISCADES.

- Altran Group (now Capgemini):** His formative experience includes a 20-year tenure at Altran, where he held a succession of senior leadership positions. These included Group Senior Vice-President for the Aeronautics, Space, Defense, Naval, & Railways verticals, a role in which he oversaw a business unit with nearly \$1 billion in revenue and 12,700 personnel. He also served as CEO of Altran Middle East and Managing Director of Altran Spain, giving him broad international operational experience.

- Entrepreneurial Foundation:** Mr. Martinez began his career as an entrepreneur, co-founding M/s MEDIA Consultores in 1997. He grew this ER&D services venture to 200 engineers before its strategic acquisition by Altran in 2006. This foundational experience provides him with a deep understanding of building a business from the ground up.

Educational Credentials:

- He holds a Master's degree in Aeronautical Engineering from the Polytechnic University of Madrid (Universidad Politécnica de Madrid).

- He has completed an Advanced Management Program (AMP) at the prestigious IESE Business School, University of Navarra.

- The biography on the AXISCADES website states that he "served one year as an officer in the Engineers corp of the Spanish Air Force". This specific claim, while plausible given his aeronautical engineering background, is not corroborated by any of the other extensive media reports, press releases, or professional profiles available in the research materials. It therefore remains an unverified data point.

Mr. Martinez is the quintessential "transformation CEO." His professional profile aligns perfectly with AXISCADES's strategic ambitions. He has managed global P&Ls significantly larger than AXISCADES's current revenue, possesses deep domain experience in the company's target verticals (A&D, Automotive, Rail), and has a proven track record of driving growth and executing transformations within complex ER&D organizations. His appointment signals a clear shift towards a more aggressive, globally-oriented, and commercially-driven operational model. His blend of entrepreneurial agility and large-corporate process discipline makes him uniquely suited to lead a company that needs to innovate rapidly while delivering at enterprise scale.

3.2. KP Mohanakrishnan, Deputy CEO and President – Aerospace

Current Role & Mandate: Appointed on April 9, 2025, to the newly created and powerful role of Deputy CEO, Mr. Mohanakrishnan's mandate is to "sharpen our business & execution edge" in the global aerospace and defence ecosystem. He is tasked with helping the company evolve into a "top global aerospace player" by expanding its capabilities beyond engineering into service-based manufacturing, including Maintenance, Repair, and Overhaul (MRO).

Professional Experience & Career Trajectory : Mr. Mohanakrishnan brings over three decades of industry experience, with 25 years concentrated in the aerospace sector. His career includes senior leadership positions at two of India's most prominent private aerospace manufacturing firms:

Mahindra Aerostructures Pvt. Ltd. and Tata Advanced Materials Ltd.. His experience is defined by a proven ability to build strategic manufacturing relationships and forge long-term partnerships with international OEMs, Tier 1 suppliers, and crucial Indian defence and space agencies, including the Ministry of Defence (MoD), Hindustan Aeronautics Limited (HAL), the Indian Space Research Organisation (ISRO), and the Defence Research and Development Organisation (DRDO).

Educational Credentials: He holds a degree in Mechanical Engineering and a Master's in Business Administration (MBA).

The appointment of Mr. Mohanakrishnan is a direct and strategic move to bolster the "product" and manufacturing dimension of the company's aerospace and defence business. His background at Mahindra and Tata—both key players in India's private-sector A&D manufacturing ecosystem—is critically important. He brings the shop-floor credibility and extensive OEM relationship network necessary for AXISCADES to successfully transition from a pure-play engineering design house into a higher-value provider of manufactured goods and aftermarket services. The creation of the "Deputy CEO" title is a clear signal of his seniority and the immense strategic importance the company places on the aerospace vertical in its new growth plan.

3.3. Sharadhi Babu, President – Defence

Current Role & Mandate: As President – Defence, Mr. Sharadhi Babu is responsible for leading one of the company's core strategic verticals. His mandate covers the development and deployment of complex, integrated solutions for air, land, and sea platforms, all qualified to rigorous military (MIL) standards.

Professional Experience & Career Trajectory : Mr. Babu's profile is a unique blend of military experience, engineering expertise, and entrepreneurial drive.

•**Indian Air Force Service:** He served as an Aeronautical Engineering Officer in the Indian Air Force under a Short Service Commission. In this role, he was responsible for the technology and operations of complex radar, communication, and data handling systems. This military background provides an invaluable end-user perspective and deep credibility within the Indian defence ecosystem.

•**Long-standing Company History:** Mr. Babu has a deep-rooted history with AXISCADES and its predecessor companies. He served as the CEO of the erstwhile CADES entity immediately following its acquisition and was later appointed as the Acting CEO and Executive Director of the parent company for an interim period in 2019.

•**Entrepreneurial Experience:** He also co-founded the technology firm M/s Adamya Technocrats, where he served as Chief Operating Officer.

Sharadhi Babu represents the deep, embedded domain knowledge that is critical for success in the defence sector. His unique combination of direct military service, aeronautical engineering qualifications, and long-standing corporate leadership history makes him the ideal executive to lead the defence vertical. He intimately understands the customer (the armed forces), the technology, and the company's internal capabilities. His leadership ensures that as AXISCADES pushes into new technological frontiers like AI and autonomous systems, its defence offerings remain grounded, credible, and precisely aligned with the specific, mission-critical needs of its military clientele.

3.4. D Murali Krishnan, Chief Operating Officer & President – ESAI

Current Role & Mandate: Appointed Chief Operating Officer on April 9, 2025, Mr. D Murali Krishnan holds a uniquely strategic dual role, as he also continues to serve as the CEO of Mistral Solutions, a key AXISCADES subsidiary. His mandate as COO is to drive group-wide operational excellence, while his role as President – ESAI tasks him with leading the strategic expansion in AI-led engineering, semiconductor innovation, and global digital solutions.

Professional Experience & Career Trajectory : Mr. Krishnan is a veteran leader in the digital engineering space.

- Cyient Limited:** He previously led a \$200 million Digital Engineering business at Cyient, where he managed a global team of over 4,000 engineers. This role demonstrates his capability in scaling large, complex digital and product development operations.

- Pennar Industries:** He also served as the CEO of the Engineering Services division at Pennar Industries.

- Previous AXISCADES Tenure:** This appointment marks a return to the company for Mr. Krishnan, who held senior leadership positions during a prior seven-year tenure, giving him deep familiarity with the organization's culture and operations.

The appointment of the CEO of a key subsidiary (Mistral) to the position of Group COO is a powerful and unconventional strategic move. This structure is designed to solve the classic post-acquisition challenge of integration. Instead of allowing Mistral to operate in a silo, its leader is now responsible for the operational cadence of the *entire* group. This ensures that Mistral's highly valued "chip-to-product" methodology and deep-tech capabilities are not just available to the parent company, but are actively woven into its core operational fabric, processes, and culture. It is a deliberate and accelerated mechanism to force a DNA transfer from the acquired asset to the parent, hardwiring innovation from the subsidiary level into the group's central nervous system.

3.5. Shashidhar SK, Chief Financial Officer

Current Role & Mandate: Appointed Group CFO effective January 3, 2022, Mr. Shashidhar SK is responsible for the company's overall financial health, corporate governance, financial reporting, and strategic financial planning, which includes fundraising, treasury, and M&A activities.

Professional Experience & Career Trajectory : With close to three decades of experience in corporate finance, Mr. Shashidhar brings a wealth of strategic financial leadership to the team.

- StoveKraft Ltd:** He joined AXISCADES from his role as CFO of StoveKraft, where he was a pivotal figure in the company's financial turnaround and successfully orchestrated its Initial Public Offering (IPO) in February 2021.

- Global and Diverse Experience:** His career also includes serving as Vice President & Global CFO for WaterHealth Inc. and, notably, as CFO and Company Secretary for **Tata Advanced Materials Ltd.**. This prior role at a Tata group company suggests a pre-existing professional network with other key executives like KP Mohanakrishnan who also hail from the Tata ecosystem.

Educational Credentials: He holds multiple professional qualifications, including CGMA (Chartered Global Management Accountant), FCMA (Fellow of the Chartered Institute of Management Accountants), and FCS (Fellow of the Institute of Company Secretaries of India).

Mr. Shashidhar is a modern, strategic CFO whose profile is well-suited to a company undergoing ambitious growth. His recent and successful IPO experience at StoveKraft is a particularly valuable asset, demonstrating his ability to navigate complex capital market transactions and prepare an organization for the intense scrutiny of public markets. This is crucial for a company like AXISCADES, whose transformation may require significant future fundraising or strategic M&A activity. His background combines experience in manufacturing and global operations, aligning well with the company's operational footprint and strategic direction.

3.6. Ravikumar Joghee, Chief Strategy & Marketing Officer & President - USA

Current Role & Mandate: Appointed in May 2025, Mr. Ravikumar Joghee holds a critical dual role designed to bridge strategy and execution. As Chief Strategy & Marketing Officer, he is responsible for the group's overarching strategic initiatives and brand positioning. As President - USA, he holds direct P&L responsibility for the company's growth in the vital North American market. His mandate is to sharpen strategic priorities, elevate the AXISCADES brand, and aggressively scale operations in North America to capture multi-billion-dollar opportunities in advanced manufacturing.

Professional Experience & Career Trajectory : Mr. Joghee's career spans over 30 years across diverse sectors including aerospace and defence, mobility, BFSI, and IT.

- Previous AXISCADES Stint:** This appointment marks a return for Mr. Joghee, who served as a Vice President at the company in 2010. During that time, he led strategic programs for marquee aerospace clients such as Airbus and Bombardier and was instrumental in establishing multiple design centers. This is another clear example of the company's "boomerang" strategy of bringing back proven talent.

- Senior Leadership Experience:** He has held senior leadership roles at major global corporations including **Wipro** and **Sandvik**, as well as at Numentica Technologies, where he focused on brand transformation and digital innovation.

This dual-role appointment is a highly pragmatic and strategic decision. It ensures that the company's corporate strategy (CSO role) is not developed in isolation but is directly tied to P&L execution and growth in its most important international market (President - USA role). Mr. Joghee is positioned not as an ivory-tower strategist but as a leader tasked with both formulating the plan and delivering the results in a critical region. His return to the company leverages his institutional knowledge and his past successes with key global aerospace clients, providing him with immediate credibility and a running start.

3.7. Anurag Sharma, President – ESAI & CEO – add solution GmbH

Current Role & Mandate: While the corporate website lists Mr. Sharma as President – ESAI, his most recent announced role is CEO of add-solution GmbH, the company's Germany-based subsidiary, an appointment made in April 2025. His mandate is to drive growth in the technologically sophisticated European market, with a special focus on the aerospace, automotive, and industrial sectors. This involves leading the subsidiary's specializations in Electrical Distribution Systems (EDS) design and testing, as well as specialized drone development and thermal management offerings for the group in Europe.

Professional Experience & Career Trajectory : Mr. Sharma has over 32 years of multifaceted experience in product development, P&L management, and the execution of large-scale engineering programs.

•**Blue-Chip Technology Background:** His extensive leadership journey includes roles at a roster of top-tier global technology and engineering firms, including **Siemens Technology**, **Segula Technologies** (where he served as Managing Director and established their India presence), **Altran India**, **Ansys India**, and **Altair Engineering**.

•**Defence and Industrial Roots:** He began his career with Larsen & Toubro (L&T), where he contributed to a prestigious national project for the Indian Defence establishment. He has also worked extensively on digital manufacturing and smart infrastructure projects in the Middle East.

Educational Credentials: He is an alumnus of the prestigious Indian Institute of Technology (IIT), Roorkee.

Mr. Sharma is a high-caliber executive strategically placed to spearhead growth in the demanding European market, particularly in Germany. His deep expertise in EDS and his extensive background with premier German and European technology firms like Siemens and Altran make him an ideal fit to deepen relationships with European OEMs as they shift towards software-defined vehicles and electrification. Appointing a leader of his stature to run a subsidiary is a strong signal of AXISCADES's commitment to empowering its acquired assets and driving decentralized, region-specific growth with top-tier talent.

4.3. Concluding Remarks: Outlook and Potential Challenges

For investors and strategic partners, Axiscades under this new leadership represents a compelling, albeit high-risk, high-potential-reward proposition. The quality and strategic fit of the management team are of the highest caliber and provide a strong foundation for success. However, the sheer scale of the ambition and the inherent difficulty of the business model transformation are significant hurdles. The investment thesis hinges on the belief that this specific team can execute an extraordinarily difficult plan. Close and continuous monitoring of the aforementioned KPIs is critical to assess the ongoing viability of the 'Power 930' journey.

Scuttlebut

We attended an investor meet organized by AXISCADES at the premises of its subsidiary, Mistral Solutions, in Bangalore. The event featured a comprehensive walkthrough of Mistral's capabilities, key product demonstrations, and a Q&A session with senior management. As photography was restricted due to the sensitive nature of the defence-grade products, our insights are based on first-hand interactions and discussions with the leadership team.

Key Business Highlights by Vertical given by Management

AXISCADES continues to strengthen its positioning in the Indian defence electronics landscape, with a robust presence in Radar and Electronic Warfare (EW) systems, contributing ~15% of current revenues through its Direction Finder product, where it is the market leader and sole supplier in India. In EW systems, the company has secured one confirmed unit for LCA Mk1A and 80 confirmed units for Su-30 aircraft, with a per-system value of ₹2 crore, implying ₹160 crore revenue visibility. The company is also involved in platform integration through onboard computers, Radar RPUs, and proprietary software (VxWorks). The IFF (Identification Friend or Foe) systems segment presents a large total addressable



market (TAM) of ₹4,000–₹5,000 crore, with broad demand across all combat platforms. Industry is starting production on the Virupaksha radar this year, with each unit estimated at ₹90 crore. Notably, the firm aims to avoid reliance on third-party facilities, signaling a vertical integration drive. The company has completed design work and is awaiting funding or orders for multiple strategic programs including AEW&C systems, radar and jamming systems, RWJ receivers (₹300 crore tender expected with 2 shortlisted players), and EW suites for LCA Mk2 and AMCA. Additionally, Thales is expected to place ₹10–12 crore worth of orders this year

In Missile and Strategic Systems, AXISCADES has active partnerships with MBDA across launcher maintenance, embedded software, and test benches (TTB). The firm is participating in the seeker opportunity for BrahMos, with an RFI received for seekers priced at ₹1 crore per unit, with a market potential of 100 units/year. The follow-on opportunity in the Kusha seeker program (₹5 crore/unit) is expected to align with the BrahMos outcome. Notably, AXISCADES is among the top 3 contenders for missile-related work in India. A government-backed indigenization push in ramjet engines, which are essential for high-speed missile propulsion, is a key near-term opportunity. As India plans to locally manufacture missiles like Meteor and MICA, the need for pyro licensing and indigenous IP is critical—areas where AXISCADES is preparing itself. MBDA's offset obligations (currently routed mostly through BDL) represent a ₹4,000 crore opportunity over time.

In MRO, MOD & PBL services, AXISCADES is actively working with top global OEMs including Airbus, General Dynamics, and Boeing. The Supply Chain, Engineering Services, and Aerospace Manufacturing division supports global clients such as Boeing, Airbus, GKN, Spirit AeroSystems, Airbus Helicopters, ThyssenKrupp Marine, Embraer, EDGE, IAI, Elbit, and Rafael.

The company's Unmanned Systems portfolio covers a wide spectrum: from counter-drone systems (manpack, man-portable, vehicle-mounted), radar, jammers, spoofers to more advanced assets like kamikaze drones and bomb-dropping UAVs—with competition from NewSpace, Adani, and BonV. AXISCADES is also evaluating opportunities in loitering munitions. In telemetry tech, players like Solas, Paras, Adani, and NewSpace lead the field, with AXISCADES also in contention.

In Land Systems, AXISCADES works on tank transporters, turret systems, and ATV components, while also developing C4I2 systems—integrated command and control suites for land-based platforms. Within Naval Systems, the company has delivered sonar technology and is working on Integrated Control Systems (ICS) for the SSK (5 units), P75 (6 units), and Scorpene (3 units via MDL) classes. A full-suite ICS is under development. The firm has also deployed Waterfly technology for naval applications.

In Munitions, AXISCADES is involved in the development of 7.62 mm ammunition and missile integration-level products. Finally, in ESAI and Emerging Tech, the company has secured a ₹120 crore annual order with Texas Instruments (TI) and Qualcomm, and is in advanced-stage discussions for PCIE Gen 5 Cards in partnership with Recogni. These high-performance compute cards (300 TOPS AI capability) are representing a \$1 billion global opportunity if it works.

Management Commentary & Strategic Direction

AXISCADDES has guided ₹511 crore in defence revenue by FY26, supported by a strong order pipeline and growing traction in strategic programmes. The company currently boasts ₹5,310 crore of confirmed order visibility over the next five years—₹2,790 crore in defence, ₹720 crore in ESAI (Embedded Systems and AI Integration), and ₹1,800 crore in aerospace.

Management highlighted a clear preference for emergency procurement, which enables faster conversion and reduced bureaucratic delays.

Capital deployment is being executed in phased strategic initiatives. AXISCADDES is making strategic investments in infrastructure through the development of the Devanahalli Atmanirbhar Complex (DAC) on a 20-acre campus in Bangalore.

Phase 1 (FY25 completion) focuses on Radar and Electronic Warfare systems—covering development, manufacturing and testing

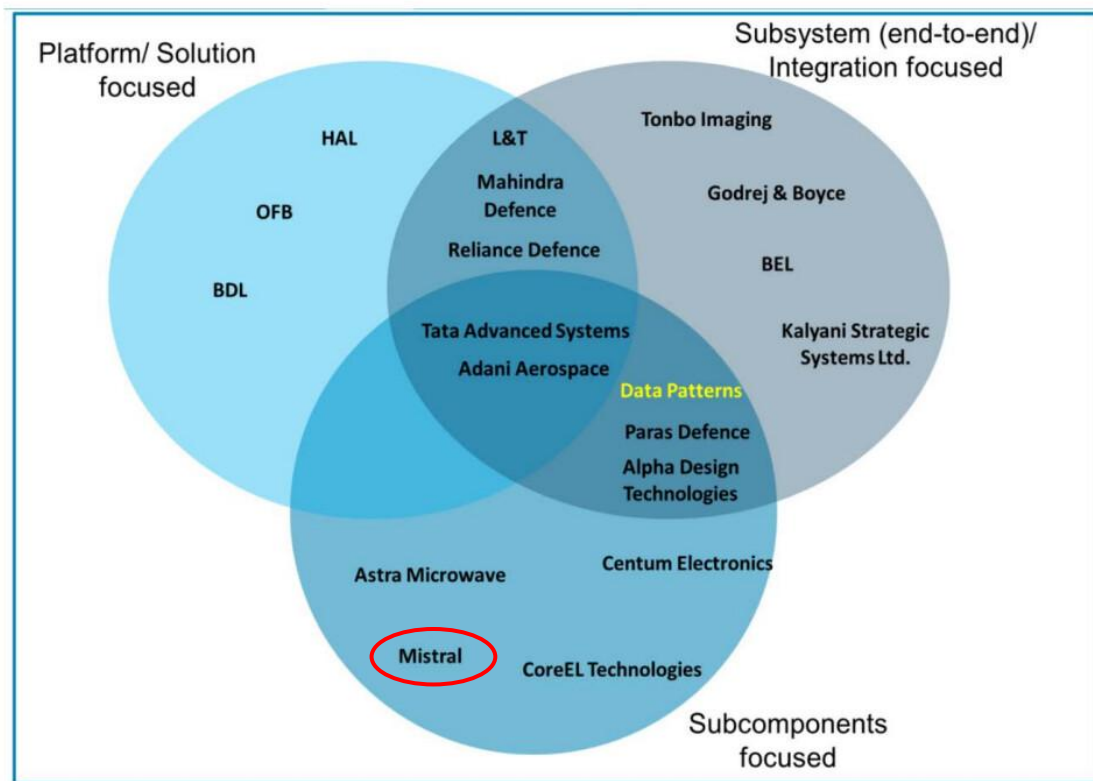
Estimated cost: ₹250 Cr; ₹120 Cr (Phase 1A) to be internally funded.

Phase 2 will expand into a Missile Atmanirbhar Cluster (MAC) and MRO for missile systems, supported by a new facility in Hyderabad.

Phase 3 targets full-fledged MRO and supply chain infrastructure for aerospace and defence clients, to be constructed over the next 3 years.

Funding will be structured through Axis Aerospace Infra Pvt Ltd (AAIPL), with management favoring strategic partnerships and divesting of non-core business over equity dilution.

Industry Mastersheet



The Peer Landscape: Benchmarks in Product-Led Defense Electronics

To understand Axiscades' journey and potential, it is essential to benchmark it against peers who have already established successful product-led business models in the Indian defence electronics sector. The following table provides a qualitative comparison, setting the stage for a detailed analysis of each company.

Table 1: Business Model & Value Chain Comparison

Feature	Axiscades Technologies	Data Patterns (India)	Astra Microwave Products	Apollo Micro Systems	Paras Defence & Space
Core Business Model	Transformer: Pivoting from engineering services to a product- & IP-led model in Defence, Aerospace & ESAI.	Vertically Integrated Innovator: End-to-end design, development, and manufacturing with a focus on proprietary products.	Niche Technology Specialist: Deep focus on the design and manufacture of high-frequency RF & Microwave sub-systems.	Aggressive Systems Integrator: Evolving from BTP/BTS services to a full-stack weapons systems integrator via capex and acquisitions.	Niche Technology Manufacturer: Specializing in high-precision optics, EMP solutions, and moving into integrated systems like anti-drone tech.
Key Products/Capabilities	Drones, Anti-Drone, EW, Avionics, Command & Control Systems, Embedded Solutions, Test Benches.	Radars, EW Suites, Avionics, Fire Control Systems, COTS Boards, Satellite Systems.	Transmit/Receive (T/R) Modules, GaN TRMs, Radar & EW sub-systems, Satellite components, MMICs.	Avionics, Underwater Mines, Aerial Rockets, Actuation Systems, EMS, PCB Assembly, Weapon Integration.	Space Optics, IR Lenses, Periscopes, EMP Racks, Flow-formed tubes, Anti-Drone Laser Systems.
Position in Value Chain	Evolving from Tier-2/3 to Tier-1/2: Moving from a service provider to a sub-system and system supplier.	Tier-1 / Tier-2: A strategic development and production partner for complete systems and critical sub-systems.	Tier-2 / Tier-3: A critical component and sub-system specialist supplying to system integrators and OEMs.	Evolving from Tier-2 to Tier-1: Aiming to become an OEM for complete weapon systems.	Tier-2 component specialist (optics, EMP) evolving into a Tier-1/2 systems provider in niche areas.
Key Customers	DRDO, Defence PSUs, MoD, Global OEMs (MBDA, Indra).	DRDO, HAL, BEL, BrahMos Aerospace, ISRO.	DRDO, ISRO, Defence PSUs, Global Defence Primes.	DRDO, ISRO, Indian Army/Navy, L&T, TATA, Adani.	DRDO, ISRO, Defence PSUs, Global Primes.

1.1. Data Patterns (India) Ltd.: The Benchmark for Vertical Integration

Data Patterns represents the gold standard for vertical integration in the Indian defence electronics space. Its business model is built on comprehensive, end-to-end capabilities, encompassing in-house design, development, manufacturing, and testing. A key element of its strategy is the transition from being primarily a development partner for the Defence Research and Development Organisation (DRDO) to leveraging that experience to build its own portfolio of proprietary products. This allows it to compete directly with foreign OEMs and capture a much larger share of the value.

The company's dominance in the value chain is evident from its participation in some of India's most prestigious and critical defence programs. It has served as a key Tier-1 or Tier-2 supplier, developing the advanced Fire Control System for the BrahMos missile program, cockpit displays and avionics for the LCA-Tejas fighter jet, and launch pad countdown systems for satellite launches. Its product portfolio is diverse, catering to all domains—space, air, land, and sea. As of the first quarter of FY26, the company's order book stood at approximately ₹860 crore, with management expressing optimism about an acceleration in order finalization.

1.2. Astra Microwave Products Ltd.: The High-Frequency Specialist

Astra Microwave has carved out a formidable position by specializing in the technologically complex and high-entry-barrier niche of Radio Frequency (RF) and microwave systems. Its business model is focused on the design, development, and manufacture of critical components, sub-systems, and systems that operate in this domain. This deep specialization provides the company with a significant technological moat that is difficult for competitors to replicate.

Positioned as a crucial Tier-2 and Tier-3 sub-system supplier, Astra Microwave provides the high-frequency "brains" for larger systems. Its products are integral to advanced radar systems (including Active Electronically Scanned Array - AESA radars), electronic warfare platforms, missile electronics, and satellite communications. Its key clients include DRDO, the Indian Space Research Organisation (ISRO), and major Defence Public Sector Undertakings (PSUs). The company is a key partner in strategic national programs such as the Akash surface-to-air missile system and the Netra airborne surveillance system. Astra Microwave boasts a very strong order book of ₹2,304 crore, which is 2.2 times its FY25 revenue, providing exceptional revenue visibility for the medium term.

1.3. Apollo Micro Systems Ltd.: The Aggressive Systems Integrator

Apollo Micro Systems is undergoing a rapid and aggressive evolution. The company started as a provider of build-to-specification (BTS) and build-to-print (BTP) services, essentially manufacturing electronic and electro-mechanical solutions based on client designs. However, its strategy has pivoted dramatically towards becoming a full-fledged weapons systems integrator. This transformation has been supercharged by its recent acquisition of IDL Explosives, a manufacturer of bulk explosives.

This acquisition is a game-changer for its position in the value chain. By integrating its own expertise in electronics, avionics, and platforms with IDL's capabilities in explosives, Apollo can now offer complete, end-to-end indigenous weapon systems. The company is moving beyond supplying components to designing and delivering fully integrated systems like underwater mines, aerial rockets, and anti-submarine warfare rockets. Its ambition is to become a Tier-1 Original Equipment Manufacturer (OEM). The company serves a wide array of clients, including DRDO, ISRO, the Indian Army and Navy, and large private sector defence players like L&T and TATA. Its order book stood at ₹615 crore as of March 2025, with an ambitious management guidance for this figure to triple within the year. This growth is further supported by recent wins, including a significant ₹113.81 crore export order for an advanced avionic system

1.4. Paras Defence and Space Technologies Ltd.: The Niche Technology Specialist

Paras Defence has cemented its position by focusing on Indigenously Designed, Developed, and Manufactured (IDDM) products in high-technology niches. Its business model is transitioning from being a component supplier to a provider of integrated systems, a strategy aimed at capturing higher value in the defence supply chain. A key strength and a significant competitive moat is its status as the sole Indian supplier of critical imaging components like large-size optics and diffractive gratings for space applications.

The company's product portfolio is diversified across four main verticals: Defence & Space Optics, Defence Electronics, Heavy Engineering, and EMP Solutions. It is a key supplier of infrared lenses, submarine periscopes, ruggedized electronics, and flow-formed tubes for missile motors. A major strategic thrust is its entry into the anti-drone market, underscored by a landmark ₹142.31 crore order from DRDO to develop a high-power mobile laser system. This, along with other significant orders like a ₹61.43 crore contract for periscope upgrades, has bolstered its order book to over ₹900 crore, providing strong revenue visibility

Section 2: Peer Financials

A deep dive into the financial statements of the four companies reveals a clear narrative that aligns perfectly with their respective business models and strategic priorities. The differences in profitability, efficiency, and returns are not random but are direct consequences of their strategic choices. The following comprehensive table provides a 5-year consolidated financial dashboard, which will serve as the basis for our analysis.

Table 2: 5-Year Consolidated Financial Dashboard (FY21-FY25, all figures in ₹ Crores unless specified)

Metric	Year	Axiscades Tech.	Data Patterns	Astra Microwave	Apollo Micro Sys.	Paras Defence
Sales	FY21	524	224	641	203	143
	FY22	610	311	750	243	183
	FY23	822	453	816	298	222
	FY24	955	520	909	372	254
	FY25	1,031	708	1,051	562	365
Sales Growth (%)	FY25	8.00%	36.20%	15.60%	51.10%	43.70%
EBITDA	FY21	65	92	77	39	44
	FY22	72	141	87	46	52
	FY23	146	172	145	64	58
	FY24	135	222	192	84	53
	FY25	142	275	269	129	97
EBITDA Margin (%)	FY25	13.80%	38.80%	25.60%	23.00%	26.60%
PAT	FY21	-21	56	29	10	16
	FY22	23	94	38	15	27
	FY23	-5	124	70	19	36
	FY24	33	182	121	32	30
	FY25	75	222	154	57	61
PAT Margin (%)	FY25	7.30%	31.40%	14.60%	10.10%	16.70%

Metric	Year	Axiscades Tech.	Data Patterns	Astra Microwave	Apollo Micro Sys.	Paras Defence
Debt	FY25	256	6	424	295	24
Equity	FY25	649	1,508	1,098	609	640
D/E Ratio	FY25	0.39	0.00	0.39	0.48	0.04
ROE (%)	FY25	12%	15%	14%	9%	10%
ROCE (%)	FY25	12%	22%	17%	13%	15%
Asset Turnover	FY25	0.91	0.39	0.57	0.43	0.57
Debtor Days	FY25	107	307	273	155	295
Inventory Days	FY25	104	421	389	552	323
Cash Conversion Cycle	FY25	111	617	614	452	501

2.1. Profitability & Margin Analysis (Revenue, OPM, NPM)

The divergence in profitability is the most telling financial story.

- **Data Patterns** stands out with consistently superior margins. Its EBITDA margin of 38.8% and PAT margin of 31.4% in FY25 are industry-leading. This is a direct result of its business model: deep vertical integration, a high degree of IP ownership in its products, and its strategic role in high-value national programs give it immense pricing power and control over the cost structure.
- **Astra Microwave** exhibits healthy and improving margins, with an EBITDA margin of 25.6% and a PAT margin of 14.6%. Its focus on a high-tech niche commands strong pricing, but its position as a sub-system supplier means it has less vertical integration than Data Patterns, resulting in comparatively lower, yet still robust, margins.
- **Apollo Micro Systems** shows a strong operating margin (EBITDA margin of 23.0%), but this does not translate into a proportional net profit margin (PAT margin of 10.1%). The reason for this gap is clear from its balance sheet and P&L: high interest expenses and depreciation charges stemming from its aggressive, debt-fueled capital expenditure and acquisition-led strategy are compressing its bottom line.
- **Axiscades** has the weakest margin profile, with an EBITDA margin of 13.8% and a PAT margin of 7.3%. This is the financial manifestation of its strategic transition. The numbers are weighed down by the structurally lower margins of its legacy services business, coupled with ongoing investments and acquisition-related costs for its pivot. The entire investment thesis for Axiscades hinges on its ability to elevate these margins toward the levels of its peers as the product business gains scale.

2.2. Operational Efficiency (Asset Turnover & Working Capital)

Efficiency metrics reveal the operational realities of each business model.

- **Asset Turnover** measures how effectively a company uses its assets to generate revenue. As expected, Axiscades has the highest asset turnover (0.91), a remnant of its asset-light services history. The peers, with their heavy investments in R&D labs, manufacturing plants, and testing facilities, naturally have lower asset turnover ratios. A key indicator of Axiscades' transformation will be a gradual decline in this ratio as it builds out its own manufacturing and product-related asset base.
- **Working Capital Cycle** is where the contrast is most stark.
 - **Data Patterns** has an exceptionally long cash conversion cycle (CCC) of 617 days, driven by very high debtor days (307) and inventory days (421). This is not a sign of inefficiency but a characteristic feature of its business. Its work involves long-gestation, R&D-intensive projects for government clients, where development cycles are long and payment terms are stretched. This extended working capital cycle is the trade-off for its high-margin, strategic contracts.
 - **Astra Microwave** and **Apollo Micro Systems** also have long working capital cycles, though shorter than Data Patterns. Their business mix includes more series production and sub-system supply, which can have slightly faster turnover than pure, ground-up R&D projects. Apollo's extremely high inventory days (612) reflect its ramp-up for large production orders.
 - **Axiscades** has the leanest CCC at 111 days, again a legacy of its IT services background with more regular billing cycles. As its defense product business, with its milestone-based payments and long project timelines, becomes a larger part of the mix, this CCC is expected to lengthen—a counter-intuitive but necessary indicator of its successful pivot.

2.3. Capital Structure & Leverage (D/E Ratio)

The companies' approaches to funding their growth are markedly different.

- **Data Patterns** is virtually debt-free, with a D/E ratio of 0.0. Its growth has been funded primarily through strong internal cash generation from its high-margin operations and equity capital.
- **Astra Microwave** also historically maintained very low debt. The recent increase in its D/E ratio to 0.39 reflects funding for working capital to execute its large order book.
- **Apollo Micro Systems** has a higher D/E ratio of 0.48 and a significant promoter pledge of 46%. This reflects its conscious strategy of using leverage to finance its aggressive capex and the acquisition of IDL Explosives.
- **Axiscades** maintains a moderate D/E ratio of 0.39. It is employing a balanced approach, using a mix of debt and equity (via a Qualified Institutional Placement) to fund its acquisitions and transformation, while also working to reduce legacy debt.

2.4. Shareholder Return Deep Dive (ROE & ROCE)

Return on Equity (ROE) and Return on Capital Employed (ROCE) are the ultimate arbiters of performance, synthesizing profitability, efficiency, and leverage.

- **Data Patterns** and **Astra Microwave** lead the pack with ROE and ROCE in the mid-to-high teens and even crossing 20%. A deconstruction of their returns shows that the primary driver is their superior profitability (high PAT margins). This high profitability more than compensates for their relatively lower asset turnover, resulting in excellent returns on capital.
- **Apollo Micro Systems** has a lower ROE of 10.2%. While it employs higher leverage, which can amplify ROE, this effect is muted by its lower PAT margin (due to high interest costs).
- **Axiscades** has the lowest ROE at 12.6%, an improvement but still lagging. The analysis is unequivocal: for Axiscades to bridge the gap in shareholder returns with its peers, the most critical lever it must pull is profitability. Improving its PAT margin by successfully shifting its business mix towards high-margin products is the clearest and most impactful path to enhancing its ROE and ROCE.

Risk Table

Key Risks	Risk Description	Mitigation Strategy	Probability	Impact
Technology changes	Rapid industry changes, disruptive technologies, and evolving customer needs may cause a mismatch between customer requirements and AXISCADES' offerings, potentially leading to performance shortfalls.	AXISCADES mitigates this risk through dedicated client relationship teams to better understand client needs, a strong focus on innovation and solution development, ongoing market research to track emerging trends and technologies, and strategic partnerships, internal R&D, and skill development to stay ahead of technological changes and strengthen its value proposition.	High	High
Cyber security risk	Cybersecurity threats could result in cyberattacks, leading to data loss and reputational damage.	AXISCADES enforces a comprehensive IT Security Management framework, conducts regular security audits and reviews, and promotes cybersecurity awareness among employees to mitigate cyber risks.	High	High
Human resource risk	Increase in attrition rate.	Employee engagement, health & wellbeing, and motivation.	Medium	High
Dependent Industry/ Company disruption	Disruptions in key client industries (such as defence, aerospace, automotive, or energy) due to economic, technological, or regulatory changes can reduce demand for AXISCADES' services, impacting revenue and requiring rapid adaptation.	AXISCADES mitigates this risk by diversifying its client base, investing in upskilling and adaptable solutions, monitoring industry trends, and maintaining strong client partnerships to stay aligned with evolving needs.	Medium	High
Compliance risk	Changes in laws, regulations, policies, and government actions—especially those related to environmental matters, employee welfare, safety, and emissions—could periodically impact the company's operations.	The company ensures compliance with all relevant laws and regulations through a statutory compliance mechanism, certified by functional heads. This process is audited periodically by internal and secretarial auditors, and yearly health checks are conducted on key compliance areas to maintain a robust compliance framework.	High	High

Forensic Checkpoints

Particulars	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Cash Conversion	0.9	0.8	0.8	-1.7	4.1	0.9	1.9	0.6	0.6	0.8	0.8
Cumulative Cash Conversion	NA					0.8	1.1	1.0	0.9	0.9	0.8
Debt /CFO	0.9	2.4	9.4	-3.6	4.1	2.7	0.9	2.3	4.9	4.0	2.9
Cash Tax/PBT	19%	27%	80%	-307%	-146%	40%	8%	35%	60%	41%	28%
Auditors	M/S Walker Chandio k & Co LLP	M/S Walker Chandio k & Co LLP	M/S Walker Chandio k & Co LLP	M/s S.R. Batliboi & Associates LLP	M/s S.R. Batliboi & Associates LLP	M/s S.R. Batliboi & Associates LLP	M/s S.R. Batliboi & Associates LLP	M/s S.R. Batliboi & Associates LLP	M/s S.R. Batliboi & Associates LLP	M/s S.R. Batliboi & Associates LLP	M/s S.R. Batliboi & Associates LLP
Payment to Auditors	0.3	0.5	0.5	0.9	0.9	0.9	0.9	0.8	1.1	1.6	NA
Audit Fees as a % revenue	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%	0.2%	0.1%	0.1%	0.2%	
CWIP/Fixed Assets	0.0%	2.1%	3.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%

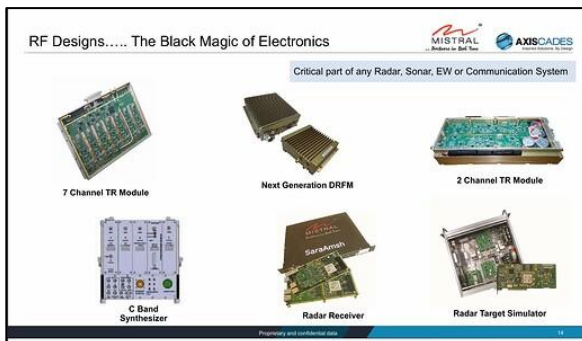
There's no major red flags in the forensic checklist. Auditor's are well known, Cash conversion is decent, Cash Tax/ PBT ratio is volatile because of DTA/DTL and exceptional losses.

Shareholding Structure

Category	Jun-23	Sep-23	Dec-23	Mar-24	Jun-24	Sep-24	Dec-24	Mar-25
Promoters	66.18%	65.74%	65.74%	60.30%	60.27%	59.86%	59.56%	59.49%
FII's	0.08%	0.08%	0.31%	0.38%	0.34%	0.40%	0.51%	0.69%
DII's	0.00%	0.00%	0.16%	8.56%	4.54%	4.08%	3.82%	2.03%
Public	33.73%	34.18%	33.79%	30.77%	34.83%	35.66%	36.10%	37.80%
No. of Shareholders	15,613	17,886	18,983	19,144	28,119	31,140	30,867	37,665

Promoters have decreased their stakes in the recent quarters which can be seen as a red flag. DII's shares have also fallen in the same period and No. of shareholders and Public shareholding is rising, which hints retailers getting in and smart money is moving out which is generally a red flag.

Defense Products -



Axiscades supply important sub-systems like the ones above. Few more sub-systems and their revenue potential are listed below –

Radar and Electronics –

Direction Finder - In defense, a Direction Finder (DF) is a system that locates the origin of enemy radio signals, providing vital intelligence for targeting and situational awareness. It operates as a critical subsystem of comprehensive Electronic Warfare (EW) suites integrated into aircraft, ships, and vehicles. Axiscades 15% of defense revenue comes from this. (as per the management)

An Electronic Warfare (EW) system is a military tool designed to control the electromagnetic spectrum for sensing, protecting, and communicating. It works to detect and disrupt enemy radar, radio, and other signals while ensuring friendly forces can use them freely

Electronic Warfare systems in LCA MK1A, SU30, Upcoming LCA MK2 upgrades and AMCA. This costs around 2CR per system to OEM's which gives us a revenue visibility of 80 Su30 upgrades and 83 Mk1A upgrades which comes down to 160 + 166 crs

LCA Tejas Mk1A:

A firm order for 83 Tejas Mk1A aircraft is in place. After the initial deliveries, the remaining aircraft are in the production pipeline. Crucially, a follow-on order for an additional 97 Mk1A jets is in the advanced stages of procurement, which will significantly increase the total number to be manufactured.

Sukhoi Su-30MKI

A comprehensive "Super-30" upgrade is in the works. Recent reports from June 2025 confirm that discussions with Russia are ongoing to modernize the fleet with advanced avionics, including a new Indian-developed mission computer and a new Active Electronically Scanned Array (AESA) radar. The program aims to keep the jet potent against modern adversaries. The entire fleet is slated for this upgrade in phases.

HAL Dhruv, LCH Prachand, Dornier 228, and Hawk AJT:

As a key technology partner to Hindustan Aeronautics Limited (HAL), the lead manufacturer for these aircraft, Axiscades might be involved in providing a range of engineering solutions and systems. Their contributions are likely in areas such as:

- **Advanced Electronics and Avionics:** Through strategic collaborations, like the one with European defence major Indra, Axiscades is involved in manufacturing critical systems such as antennas for Tactical Air Navigation (TACAN), Distance Measuring Equipment (DME), and sophisticated countermeasure systems to protect aircraft from missile threats. These are essential for the modernization and operational capability of these platforms.

•Engineering and Design Solutions: Axiscades provides crucial engineering and design services to the aerospace and defence sector, which supports the entire lifecycle of these aircraft programs, from development to production and maintenance.

Transport Aircraft - Airbus C-295MW:

•Ready/Delivered: As of late June 2025, 14 of the 16 fly-away aircraft from Spain have been delivered to the IAF. The remaining two are expected by August 2025.

•To be Made: A total of 56 aircraft are on order. The remaining 40 will be manufactured in India by Tata Advanced Systems Limited (TASL) in Vadodara. The first Indian-made C-295 is scheduled to roll out in September 2026, with all deliveries to be completed by August 2031.

Axiscades are partners for this programme according to the management but we don't know the exact transactions.

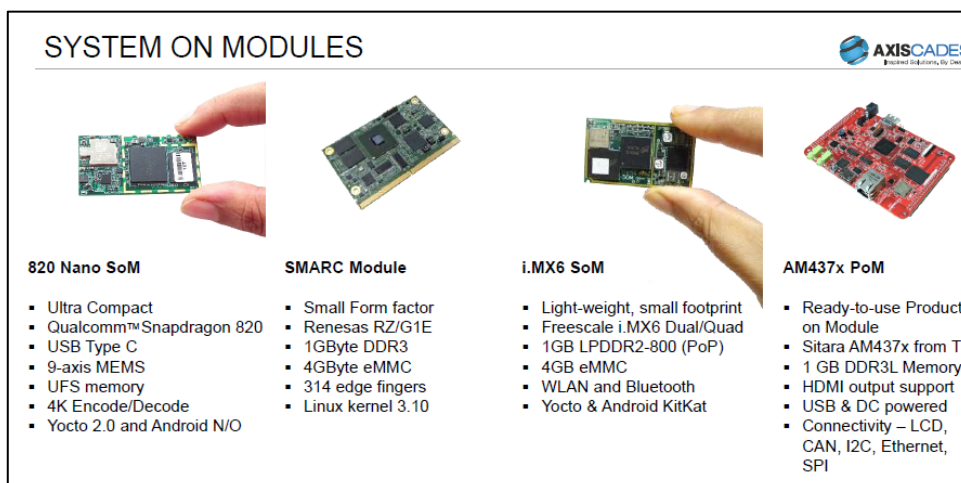
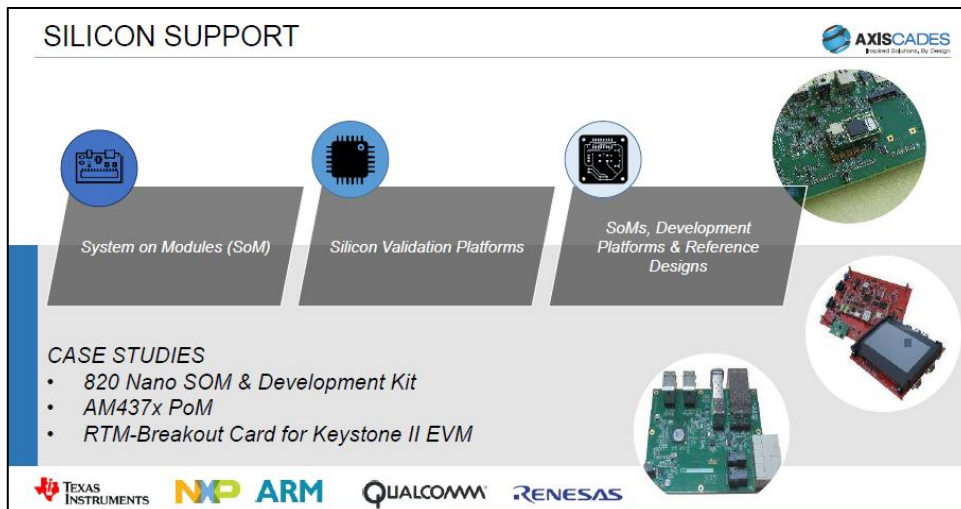
Missile and Strategic Systems –

AXISCADES has active partnerships with MBDA across launcher maintenance, embedded software, and test benches (TTB). The firm is participating in the seeker opportunity for BrahMos, with an RFI received for seekers priced at ₹1 crore per unit, with a market potential of 100 units/year. The follow-on opportunity in the Kusha seeker program (₹5 crore/unit) is expected to align with the BrahMos outcome.

Ramjet engines is to make missile faster. It is present in imported missiles but not in Indian made ones, so govt. wants to add this in Brahmos so this is also a big opportunity according to the management.

Notably, AXISCADES is among the top 3 contenders for missile-related work in India.

ESAI Products and work –



Electronics

In the electronics vertical, AXISCADES focuses on designing, developing, and integrating mission-critical electronic systems, primarily for the aerospace, defense, and industrial sectors.

Products:

- Single Board Computers (SBCs):** High-performance, rugged SBCs designed for computationally intensive applications in harsh environments.
- Rugged Computing Systems:** Custom-built, durable systems for tactical operations, including mission computers and rugged tablets.
- Data Acquisition and Control Units:** Systems designed to gather and process data from various sensors for applications like radar and sonar.
- Electronic Warfare Systems:** Components and subsystems for electronic countermeasures and intelligence gathering.
- Drones and Anti-Drone Systems:** A range of unmanned aerial vehicles (UAVs) for surveillance and logistics, as well as systems to detect and neutralize drone threats.
- System on Modules (SoMs):** Compact, integrated modules that serve as the building blocks for larger embedded systems.

What They Do:

- End-to-End Product Design:** They take a product from concept to a deployable system, including hardware design, software development, and system integration.
- Build-to-Specification and Build-to-Print:** They manufacture electronic systems based on customer specifications or existing designs.
- Turnkey Solutions:** They provide complete, ready-to-use electronic systems for specific applications.

Semiconductors

AXISCADES' semiconductor vertical focuses on providing services and solutions that enable the development and validation of complex chips and their integration into final products.

Products:

- Development and Evaluation Kits:** Kits that help developers build and test applications on specific semiconductor platforms. For example, the **DCP1000 Module** is a data capture and Hardware-In-Loop (HIL) playback module for Texas Instruments' mmWave radar sensors, based on a Lattice CertusPro-NX FPGA.
- Add-on Modules:** Modules that extend the functionality of standard evaluation boards, such as the RTM-Breakout Card for Texas Instruments' Keystone II EVMs.

What They Do:

- VLSI and FPGA Design:** They design and develop custom logic for FPGAs and ASICs, which are at the heart of many advanced electronic systems.
- Pre- and Post-Silicon Validation:** They provide services to test and validate the functionality and performance of chips before and after manufacturing.
- Reference Design Development:** They create pre-designed solutions that help semiconductor companies showcase the capabilities of their chips and accelerate their customers' product development.
- Strategic Alliances:** They partner with major semiconductor companies like Altera (now part of Intel) and Lattice Semiconductor to provide solutions based on their latest technologies.

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Website: <https://trinetraassetmanagers.com/>

Date: 07th July, 2025

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Thank You