Made in India, for India & the world

Post panel report
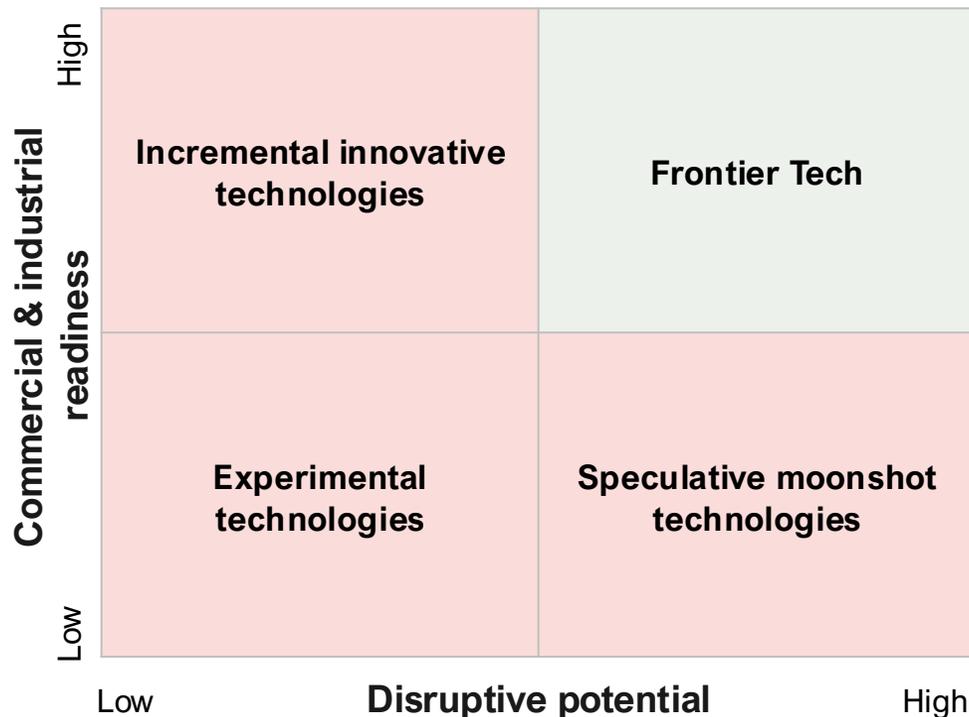
Frontier Tech: Next gen revolutionary tech, changes the way the world works

Frontier tech	=	Breakthrough technologies	+	IP moats	+	High disruptive potential	+	High commercial & industrial readiness

Frontier Tech has higher disruptive potential and is increasingly ready for commercial & industrial deployment

Examples of Frontier Tech

Incremental innovative technologies	Frontier Tech
Experimental technologies	Speculative moonshot technologies

Commercial & industrial readiness (High / Low)

Disruptive potential (Low → High)

Space tech	Next-gen energy	Cybersecurity	IoT & Electronics
Aerospace & Defense	Industrial automation	Data analytics & intelligence	Agri-tech

Four underlying drivers are enabling Frontier Tech to scale

1 Talent, IP & R&D Infrastructure expansion

300+
Specialized R&D labs fueling FT innovation

100+
FT startups incubated by IIT Madras during FY24-25

INR 6K Cr
Allotment under National Quantum Mission to nuture QT ecosystem

2 Market demand & enterprise pull

US$ 7.8B
AI spend by Indian enterprises

15-35%
OPEX reduction in manufacturing through Frontier Tech

US$ 1.3B
Raised by Indian FT startups in 2024, up 78% YoY

3 Government-led funding push

INR 76K Cr
SEMICON India Programme to boost chips & display mnfg.

INR 10K Cr
Deeptech Fund of Funds in Union Budget 2025

INR 1,200 Cr+
Allocated across MeitY, DST, ISRO, DRDO

4 Sovereignty & national security imperatives

INR 1.64L Cr
Defense capital outlay (2025), highest ever for indigenization

75%
Of defense R&D procurement earmarked for domestic players

INR 750 Cr
ADITI fund to develop ~30 critical techs by 2026

NVIDIA, Qualcomm Ventures join India Deep Tech Alliance as coalition secures $850 million in fresh commitments

Pixxel raises $24M in additional funding, taking its total Series B raise to $60M

December 9, 2024

India leads electric 3-wheeler market globally

Deeptech to account for up to one-third of VC funding in India: Accel's Prashanth Prakash

ETtech • Last Updated: Nov 18, 2025, 08:53:43 PM IST

Chennai space startup Agnikul Cosmos successfully launches Agnibaan rocket with 3D-printed engine, ISRO hails 'milestone'

India's Deeptech Market to Hit $30 Bn by 2030 Amid Defence Push & Global Robotics Boom

QpiAI raises $32 million led by Avataar, NQM

Shilpa Phadnis / Updated: Jul 17, 2025, 11:28 IST

Karnataka government joins hands with VC firms to create Rs 1,000 crore Deep Tech, AI fund

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These drivers are catalyzing a vibrant ecosystem of Frontier Tech enterprises across sectors

Non-exhaustive

Spacetech

DHRUVA SPACE · XDLINX SPACE LABS · SKYROOT AEROSPACE · AGNIKUL · pixxel · ETHEREAL X · BELLATRIX AEROSPACE Propelling Dreams · GALAXEYE

Next-Gen energy

kazam · SODION ENERGY · yulu · emo · solar square · ATHER · ULTRAVIOLETTE · HUSK.

Cybersecurity & Quantum Computing

Q→NU · HIDDENLAYER · Myelin Foundry Everything AI, Anything Creative · QπAI · QUANFLUENCE · HORIZON3.ai · halcyon · cyera

IoT & Electronics solutions

brandworks TECHNOLOGIES PVT. LTD. · INDIGRID TECHNOLOGY · REDINENT · MINDRA · Winjit · FACLON LABS · DATOMS

Aerospace & Defense

THE ePLANE CO. · MARUT DRONES · TECHEAGLE · AEROARC · BIG BANG BOOM SOLUTIONS · NewSpace RESEARCH & TECHNOLOGIES · SKYE AIR Elevating Delivery

Industrial automation

Ati · HABER · INFINITE UPTIME Production Outcomes. Delivered. · SYSTEMANTICS sensible robotics · accio robotics · E42 AI@WORK · DETECT TECHNOLOGIES · UPTIMEAI Scale Operational Excellence

Data analytics & intelligence

SATSURE · Akridata · DIGANTARA · JIDOKA TECHNOLOGIES · PIERSIGHT · Ripik.AI · Assert AI · DEEPMATRIX · aereo

Agri Tech

General Aeronautics · Plantix · NIQO ROBOTICS · Simply fresh PREMIUM PRODUCE · INTELLO LABS · fyllo · Fasal · KRISHITANTRA Harvesting Happiness
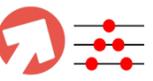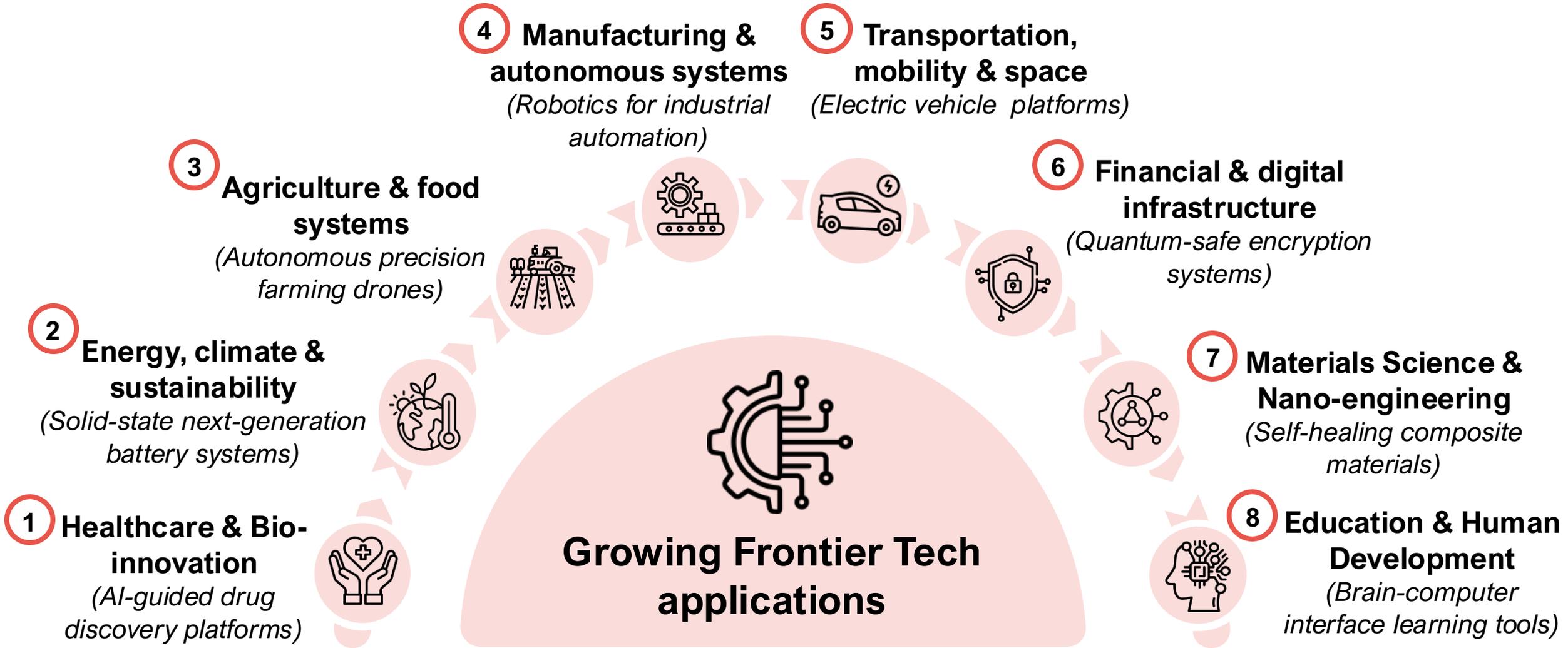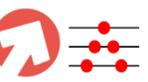
Note(s): IoT-Internet of Things
Source(s): Industry reports, Nasscom, STPI, Praxis analysis

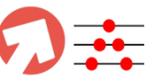# Together, these developments are unlocking high-value Frontier Tech applications

4 Manufacturing & autonomous systems
(Robotics for industrial automation)

5 Transportation, mobility & space
(Electric vehicle platforms)

3 Agriculture & food systems
(Autonomous precision farming drones)

6 Financial & digital infrastructure
(Quantum-safe encryption systems)

2 Energy, climate & sustainability
(Solid-state next-generation battery systems)

7 Materials Science & Nano-engineering
(Self-healing composite materials)

Growing Frontier Tech applications

1 Healthcare & Bio-innovation
(AI-guided drug discovery platforms)

8 Education & Human Development
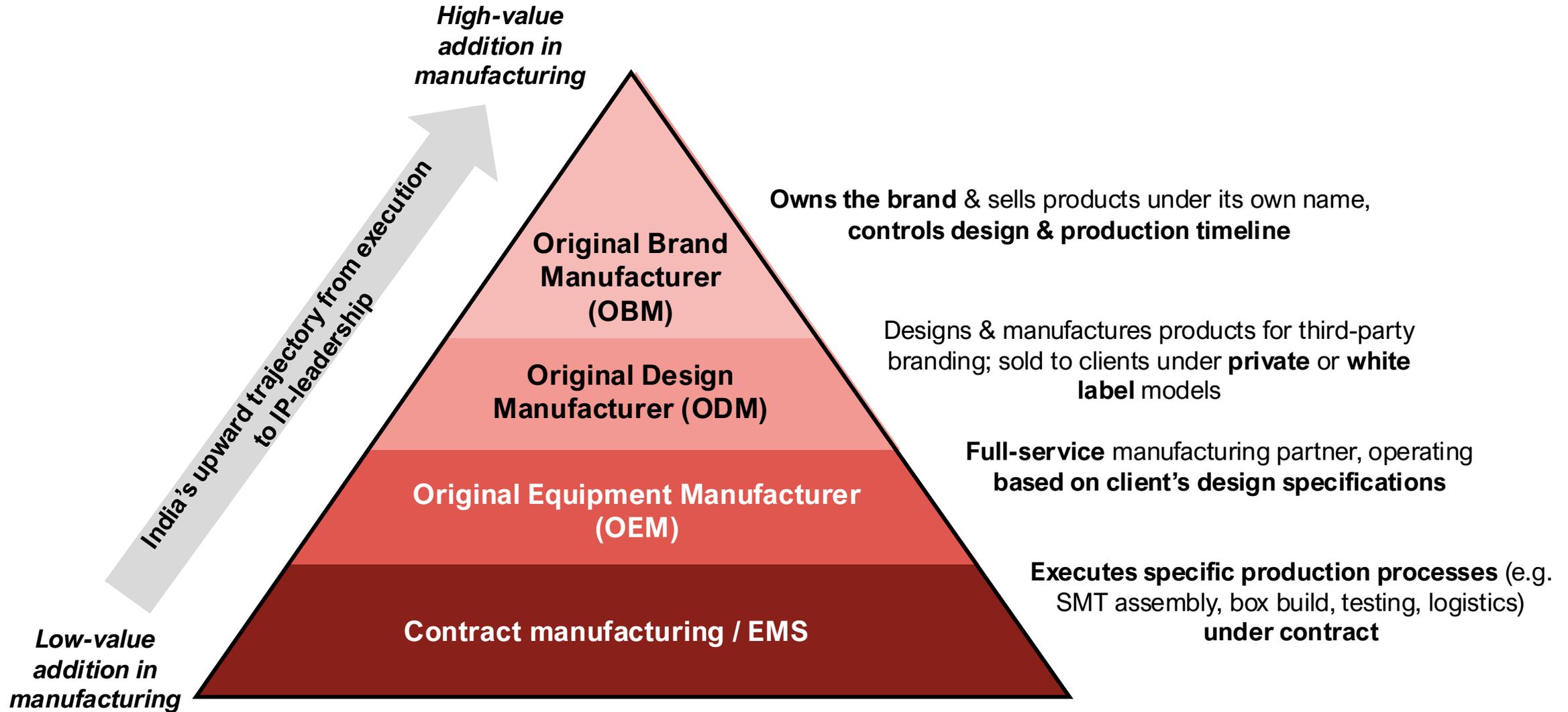*(Brain-computer interface learning tools)*

Key takeaways

1 **India's frontier-tech shift from execution to IP leadership**
- India is moving up the deep-tech pyramid, from large-scale manufacturing and supply-chain execution to design, core R&D and intellectual property ownership
- Sectors like quantum security, EV charging, defence tech and smart hardware illustrate India's transition from a services exporter to a global product and IP exporter

2 **Beyond software to complete tech solutions**
- India is evolving from a software powerhouse to a full-stack systems innovator, integrating hardware, firmware and cloud analytics
- Globally competitive solutions now span secure communication, EV charging and advanced surveillance systems

3 **EV and energy digitalization could be India's next UPI moment**
- Unified Energy Interface (UEI), built by the minds behind UPI, could enable energy-as-a-service platforms, digital grid balancing and innovative pricing & settlement models
- EV charging emerges as India's first large-scale digital energy asset, unlocking new monetization opportunities

4 **EV infrastructure is becoming "verticalized technology stack," not just chargers**
- Charging is no longer just hardware. It includes firmware architecture, payment integration, uptime analytics, grid optimisation and interoperability
- This creates long-term recurring revenue and increases IP ownership

5 **Selective indigenization is the smarter frontier-tech strategy**
- Localizing only critical, high-value, or supply-risk components, while sourcing commodity parts globally to optimize costs and scale
- This hybrid approach ensures resilience for core technology without inflating costs, securing competitiveness and supply-chain security

India's frontier-tech shift from execution to IP leadership

High-value addition in manufacturing

India's upward trajectory from execution to IP-leadership

Original Brand Manufacturer (OBM)

Owns the brand & sells products under its own name, **controls design & production timeline**

Original Design Manufacturer (ODM)

Designs & manufactures products for third-party branding; sold to clients under **private** or **white label** models

Original Equipment Manufacturer (OEM)

Full-service manufacturing partner, operating **based on client's design specifications**

Contract manufacturing / EMS

Executes specific production processes (e.g. SMT assembly, box build, testing, logistics) **under contract**

Low-value addition in manufacturing

Beyond software to complete tech solutions

India has evolved from a software services provider to full-stack system innovator

(1995-2008)
Software outsourcing
IT services, application development, global delivery

(2006–2012)
Embedded & firmware capabilities
Telecom, automotive embedded software, firmware engineering

(2013–2016)
Digital + cloud adoption
Enterprise cloud, mobility, early IoT platforms

(2017–2020)
Hardware + IoT + local manufacturing
Electronics manufacturing, connected devices, gateways

(2020-present)
Full-stack systems innovator
Secure communication, EV charging, Advanced surveillance systems

Global full-stack system innovators compete across secure communication, EV charging, and advanced surveillance

Secure communication & cybersecurity

Q→NU Proactively Quantum™ · Infosys · HCLTech · KRAKEN SECURITY LTD. · wipro · SECLORE · F⚡RTINET · Quick Heal Security Simplified

EV charging, energy infra, & edge IoT

TATA POWER EZ CHARGE · ΔELTA · magenta · CHARGEZONE · exicom · charzer

Advanced surveillance, vision systems & edge AI

HIKVISION · AXIS COMMUNICATIONS · CP PLUS · qubo · dahua TECHNOLOGY · videonetics Look Deeper · vehant TECHNOLOGIES
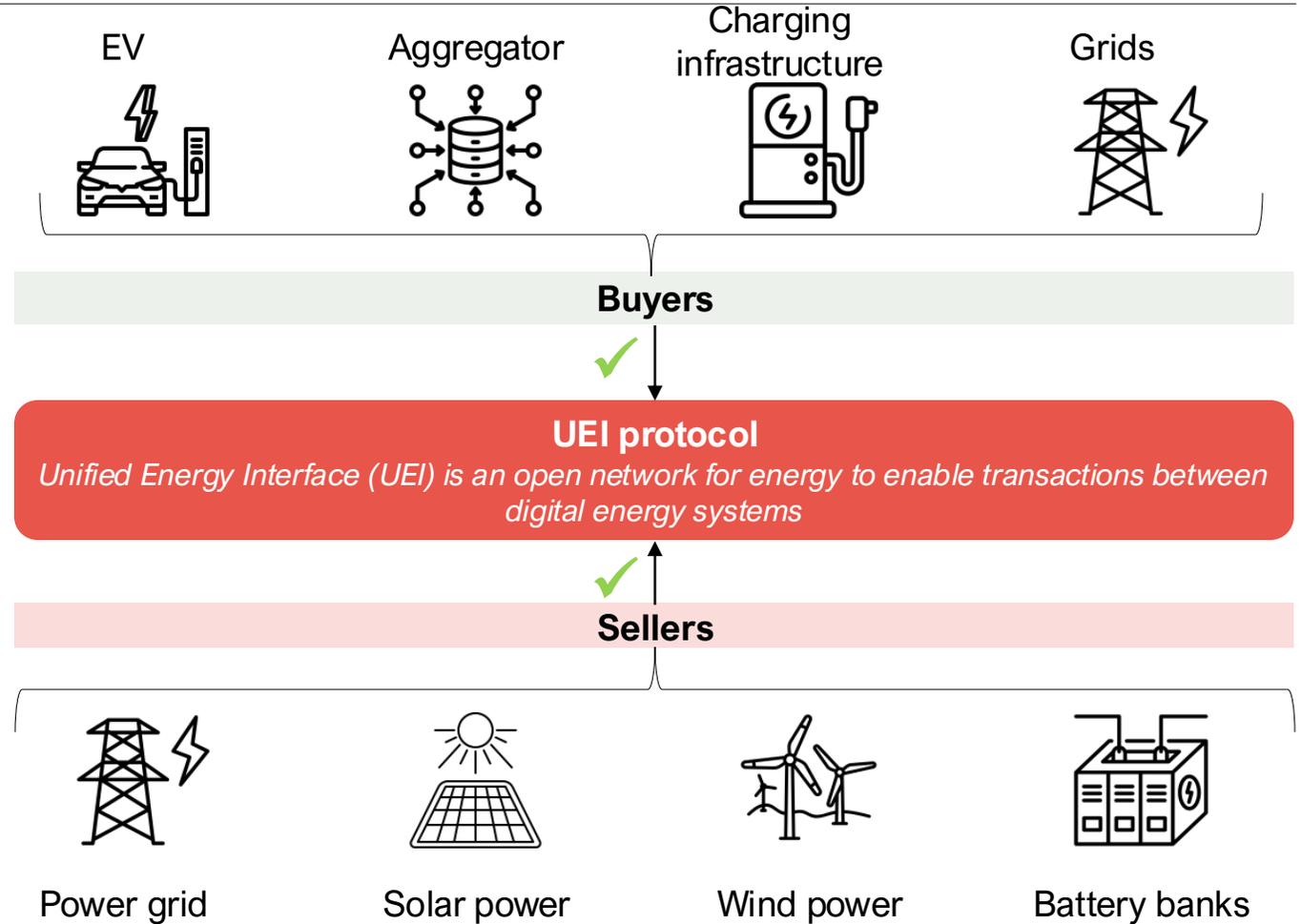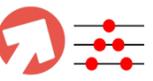
EV and energy digitalization could be India's next UPI moment

Closed platform centric e-marketplace
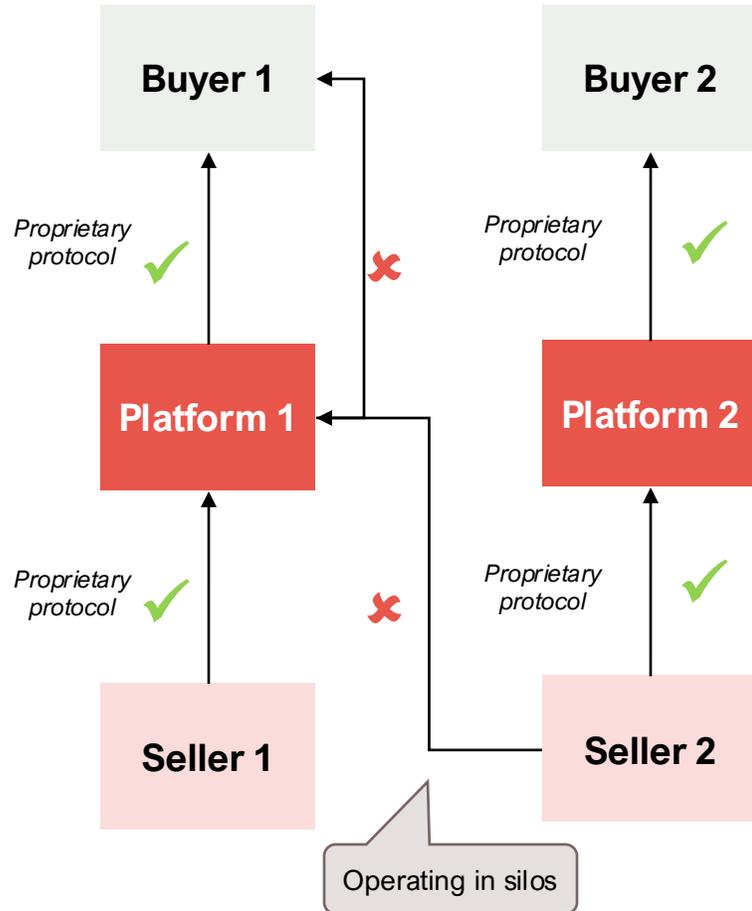
India is moving from closed platforms to large-scale EV and energy digital ecosystems by adopting UEI that is like UPI for energy systems

Buyer 1   **Buyer 2**

Proprietary protocol ✓   ✗   *Proprietary protocol* ✓

Platform 1   **Platform 2**

Proprietary protocol ✓   ✗   *Proprietary protocol* ✓

Seller 1   **Seller 2**

Operating in silos

EV   Aggregator   Charging infrastructure   Grids

Buyers ✓

UEI protocol
Unified Energy Interface (UEI) is an open network for energy to enable transactions between digital energy systems

✓ **Sellers**

Power grid   Solar power   Wind power   Battery banks

Source(s): Beckn Protocol, Yo Charge, Niti Aayog, Praxis analysis
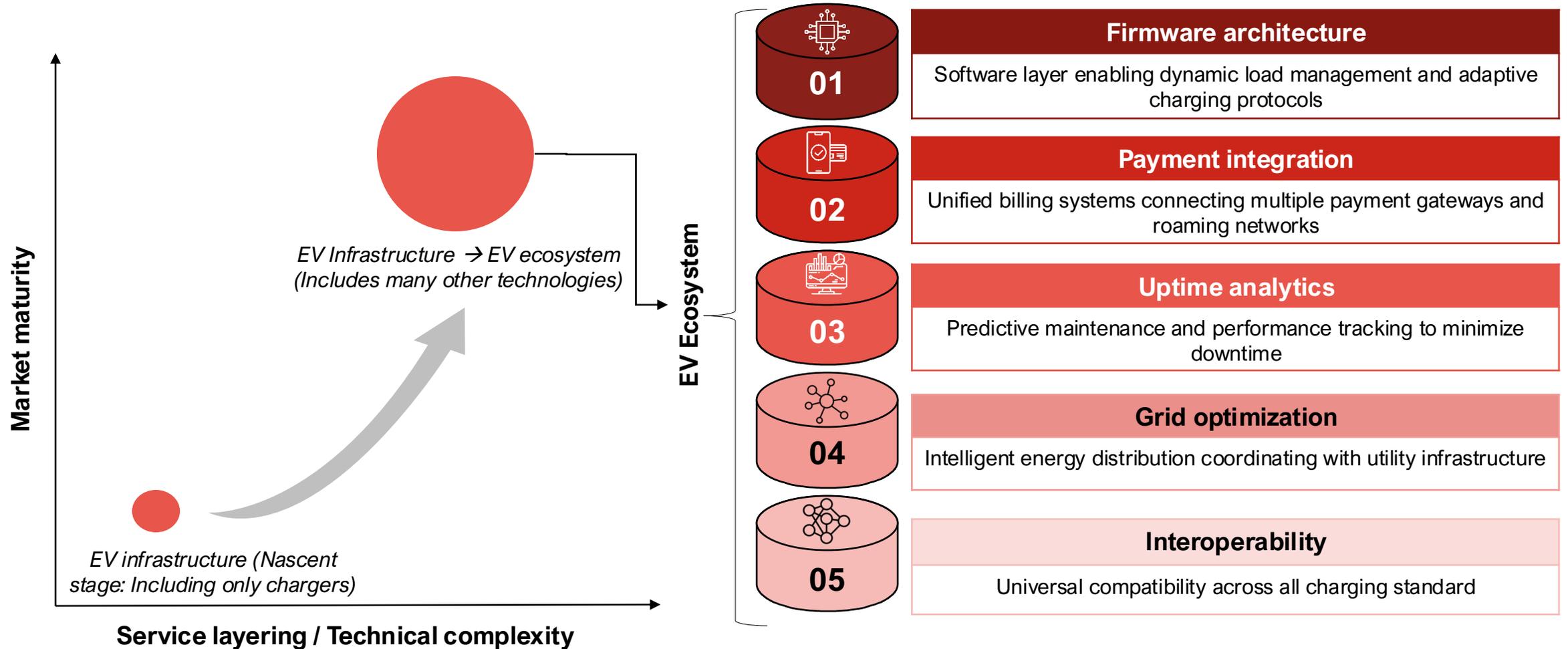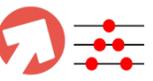
© Praxis Global Alliance | 9

EV infrastructure is becoming "verticalized technology stack," not just chargers

(4)

India is moving beyond EV infrastructure to a full EV ecosystem powered by multiple technologies

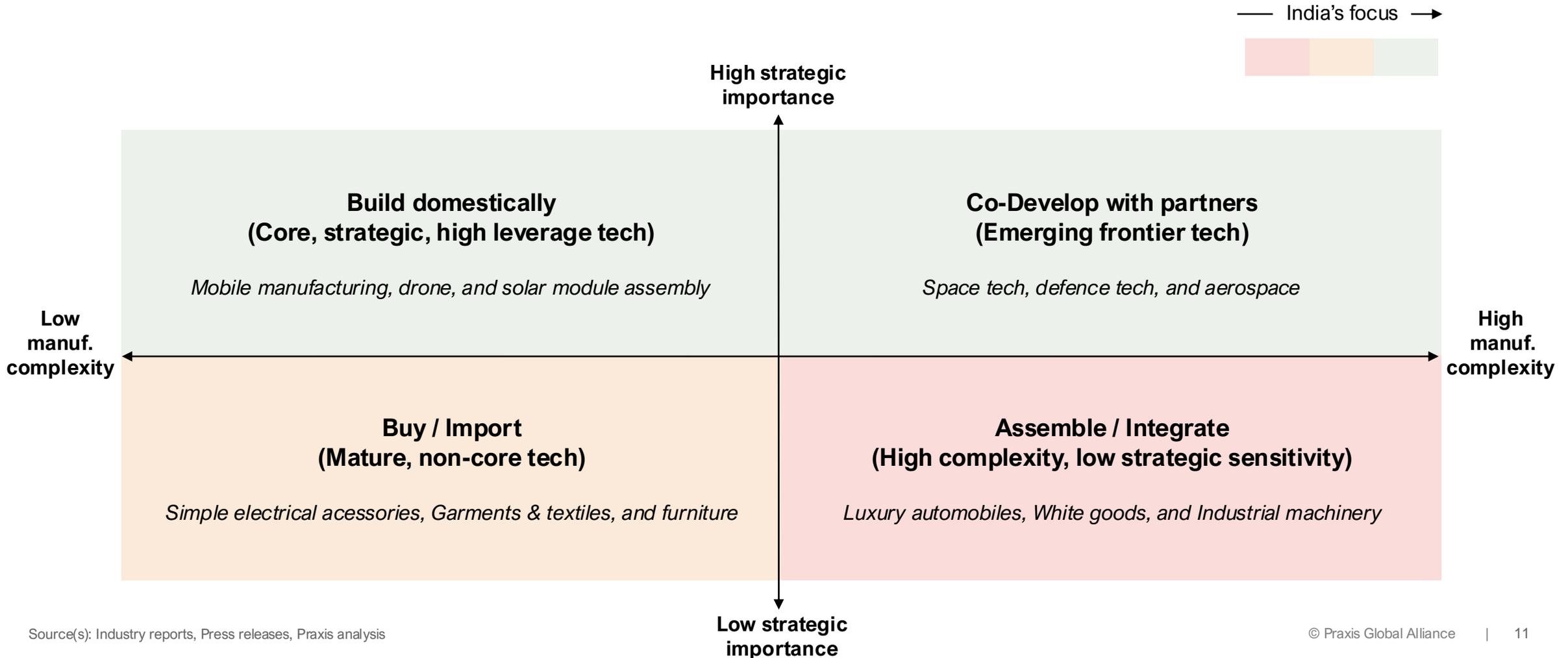**EV ecosystem spans technologies like firmware architecture, payment integration, uptime analytics, grid optimization, and interoperability**

EV Infrastructure → EV ecosystem (Includes many other technologies)

Market maturity

EV infrastructure (Nascent stage: Including only chargers)

Service layering / Technical complexity

EV Ecosystem

01 Firmware architecture
Software layer enabling dynamic load management and adaptive charging protocols

02 Payment integration
Unified billing systems connecting multiple payment gateways and roaming networks

03 Uptime analytics
Predictive maintenance and performance tracking to minimize downtime

04 Grid optimization
Intelligent energy distribution coordinating with utility infrastructure

05 Interoperability
Universal compatibility across all charging standard

Selective indigenization is smarter frontier-tech strategy

Strategically localize high-value and high-risk components, and globally source the rest to balance cost, resilience, and scale

⸻ India's focus ⟶

High strategic importance

**Build domestically
(Core, strategic, high leverage tech)**

Mobile manufacturing, drone, and solar module assembly

**Co-Develop with partners
(Emerging frontier tech)**

Space tech, defence tech, and aerospace

Low manuf. complexity ⟵―――――――――――――――――――――⟶ **High manuf. complexity**

**Buy / Import
(Mature, non-core tech)**

Simple electrical acessories, Garments & textiles, and furniture

**Assemble / Integrate
(High complexity, low strategic sensitivity)**

Luxury automobiles, White goods, and Industrial machinery

Low strategic importance

Praxis: Leading management consulting firm helping financial sponsors maximize IRR and manage risk

We help generate 'Alpha'

Sector specialists, not generalists
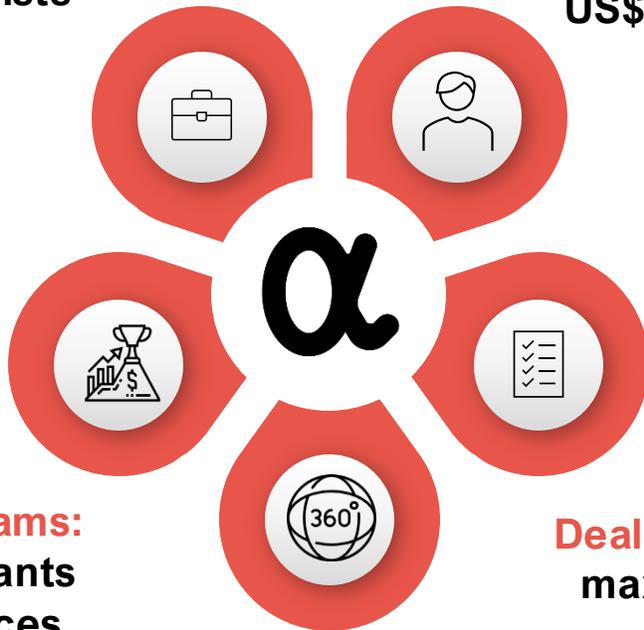
Deal experience: 1,500+ deals, US$ 65B worth

PE-trained teams: 150+ consultants across 4 offices

Deal to Exit: IRR maximization

Data advantage: 'On ground' research

α

The Praxis Edge

Investor mindset… …with Operator eyes

Analytical Rigor

What we do		
Pre-deal: Sector scans	**Deal: CDD / ODD / Tech / IDD**	**Exit: VDD, IPO readiness**
Alpha Generator^{TM}: Portfolio value creation		
Fund strategy and administration		

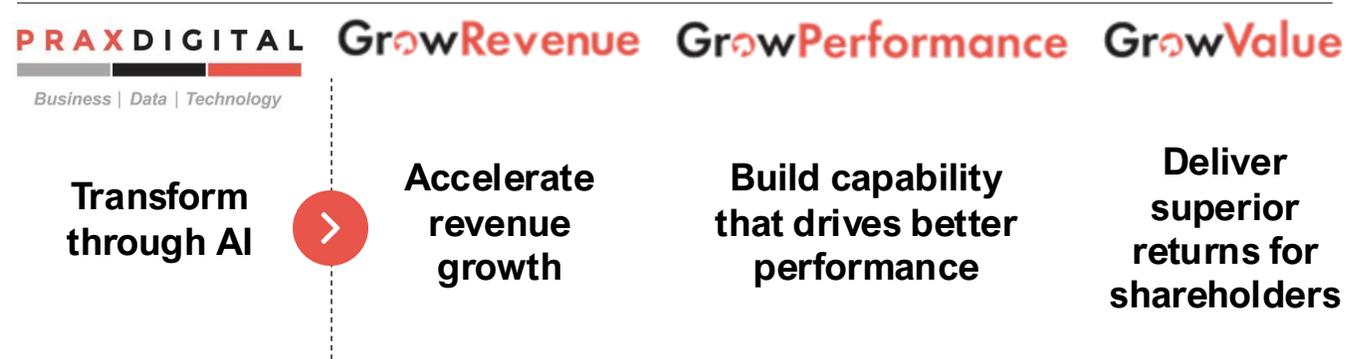# Overview of our New Age Industrial practice at Praxis Global Alliance

15+
Deals

US$ 200M+
Capital raised

How we work with New Age Industrial companies…

PRAXDIGITAL
Business | Data | Technology

GrowRevenue GrowPerformance GrowValue

Transform through AI → **Accelerate revenue growth** — **Build capability that drives better performance** — **Deliver superior returns for shareholders**

Industries we work in…

ODM & EMS	Advanced manufacturing	Packaging
Engineering & construction	Chemicals	Logistics

How we work with New Age Industrial investors…

Fund strategy	Commercial Due Diligence (CDD)	Post acquisition value creation
Vendor Due Diligence (VDD)	• *Market growth sustainability* • *Competitive defensibility* • *Voice of stakeholders (OEMs, distributors, exporters, etc.)* • *Business model evaluation* • *Unit economics & sustainability in cashflows*	• *100 day plan* • *Revenue expansion (new market, cross sell)* • *Inorganic growth* • *Margin expansion*

PRAXIS
GLOBAL ALLIANCE

THANK YOU

#BuildTogetherWinTogether