

Knowledge Series - Top 20 Things an Investor Should Know Before Investing in Startups

8

Scalability – Growth Without the Drag



A few years ago, a Bengaluru-based startup developed an AI-powered defect detection system for manufacturing industries. Initially, each customer required tailored setups, manual data tagging, and custom machine learning models—scaling looked almost impossible.

Realising the limitation, the team pivoted—building a centralised AI platform that could be fine-tuned remotely, standardised hardware kits that could be shipped with plug-and-play installation, and an onboarding engine that required minimal manual intervention.

In 18 months, the startup grew from five pilot sites to over 100 production deployments—without proportionally growing headcount or field teams.

The lesson was clear: scalability is not just about technology; it is about designing the business for efficient growth.

What Is Scalability

Scalability is the ability to grow revenues exponentially while growing costs marginally.

Knowledge Series - Top 20 Things an Investor Should Know Before Investing in Startups

8

Scalability – Growth Without the Drag

In deep-tech, this often means shifting from custom engineering to repeatable platforms, from services to products, and from manual to automated deployment.

Why Scalability Matters to Investors

Scalability translates into:

- Faster revenue growth with lower incremental cost
- Improved unit economics and gross margins
- Better operational leverage
- Higher capital efficiency and stronger exit potential

In deep-tech, scalability ensures that intensive R&D investment pays off multiple times, not just once.

Indian Deep-Tech Examples That Showcase Scalability

IdeaForge

IdeaForge, one of India's leading UAV (drone) manufacturers, initially served niche defence needs with custom-built drones. Over time, they standardised platforms like the NETRA series, modularised payloads, and expanded use cases from military to surveying, mining, and infrastructure.

This shift enabled them to grow orders without proportionally increasing design and production effort, demonstrating scalable operations in a traditionally complex hardware business.

Sigtuple

Sigtuple uses AI to automate medical diagnostics like blood smear analysis. Initially dependent on hospital-specific configurations, Sigtuple evolved its solution into a standardised AI-driven platform adaptable across diagnostic labs.

By building a robust, remotely deployable software-hardware system, Sigtuple reduced customer-specific customisation and achieved scalability in healthcare diagnostics—a sector notoriously difficult to automate.

Knowledge Series - Top 20 Things an Investor Should Know Before Investing in Startups

8

Scalability – Growth Without the Drag

Signals of a Scalable Deep-Tech Model

- Core tech platform adaptable to multiple customers with minimal changes
- Automated model updates and remote calibration
- Standardisation of hardware and onboarding
- Growth in deployments without proportional headcount growth
- Expanding addressable market without reengineering the core

Red Flags in Scalability

- Excessive dependence on bespoke customisation for each customer
- High-touch installation and servicing models
- Linear scaling of team and costs with revenue
- No clear product roadmap for standardisation or modularisation

Key Takeaway

Deep-tech success is not only about technical excellence—it is about scaling that excellence efficiently. Modular platforms, remote deployability, and automation are key enablers.

As an investor, ask:

- Can the startup serve 10x customers with 2x effort?
- Are margins improving with scale?
- Is the customer experience improving even as the company grows?

Because in the end, deep-tech that scales intelligently is deep-tech that wins.

