THE NEXT GENERATION OF DIGITAL MANUFACTURING

3D PRINTING MBA

MODULE 01 / FIELD GUIDE

Build a profitable 3D printing business using sound economics, reliable operations, AI-assisted workflows and modern growth systems.

> **THE PROMISE**
>
> Not a shortcut to guaranteed income. A complete framework for choosing a market, validating demand, delivering safely and building a repeatable business.

2026-2027 | SELF-PACED | PRACTICAL | EVIDENCE-BASED

MODULE AT A GLANCE

The New 3D Printing Landscape

A ranked opportunity map with three niches worth validating.

MODULE 01 / 10

The New 3D Printing Landscape

Understand the market before choosing a machine

> **YOU WILL PRODUCE**
>
> A ranked opportunity map with three niches worth validating.

Additive manufacturing (AM) is a family of processes that builds parts from digital instructions, generally layer by layer. It includes material extrusion, vat photopolymerization, powder bed fusion, binder jetting and other processes. The business opportunity is not a universal replacement for conventional manufacturing; it is a better fit for certain combinations of complexity, customization, volume, lead time and supply-chain constraints. This module turns technology excitement into a practical market thesis.

1.1 The industry: from prototypes to qualified production

Desktop printers made experimentation accessible; industrial systems proved value in prototypes, tooling, fixtures and selected end-use parts. The transition toward production is uneven: a customized medical model, a factory jig and a million identical commodity housings have different economics. Identify where additive methods win on total value, not on novelty.

Operating playbook. Use a five-factor suitability screen: design complexity, customization, quantity, delivery urgency and qualification burden. Score each from 1 (low advantage) to 5 (high advantage), then document why the customer would switch from machining, molding or buying off the shelf. Ask what failure would cost.

> **WORKED EXAMPLE**
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> A repair shop needs a one-off alignment fixture tomorrow. An FDM jig can be attractive even if unit material cost exceeds molded plastic, because tooling cost and lead time dominate. The same process is usually a poor choice for 100,000 identical inexpensive clips.

Apply it. List five applications you have seen. For each, state the alternative process, desired turnaround, annual volume, tolerances and whether AM actually creates customer value.

Risk check. Avoid blanket claims that 3D printing is always faster, cheaper, greener or stronger. Compare specific applications and full lifecycle costs.

LESSON NOTES / QUESTIONS TO EXPLORE

FIELD LAB / MODULE 01

1.1 The industry: from prototypes to qualified production - applied exercise

YOUR MISSION

List five applications you have seen. For each, state the alternative process, desired turnaround, annual volume, tolerances and whether AM actually creates customer value.

What customer or operating problem are you solving?

What assumptions, numbers or constraints must you verify?

What is the smallest safe test you can run this week?

What result would make you continue, revise or stop?

SELF-CHECK [ ] Evidence captured [ ] Costs considered [ ] Safety / IP checked [ ] Next action scheduled

Decision rule: Avoid blanket claims that 3D printing is always faster, cheaper, greener or stronger. Compare specific applications and full lifecycle costs.