PILLS & PYTHON

Pharmacy · Data · AI · Healthcare

BP503T · B.Pharm Theory Notes

Innovation and Startup Ecosystem

Unit III — Building a Minimum Viable Product and Validation

Semester V · 6 Hours

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Chapter 3 — Building a Minimum Viable Product (MVP) and Validation

Unit III — Building a Minimum Viable Product and Validation

3.1 Learning Objectives

After studying this chapter, you will be able to:

1. Explain the lean startup methodology and its principles.
2. Describe the build–measure–learn feedback loop.
3. Define MVP and explain its importance, scope, and objectives.
4. List types of MVPs and tools for rapid prototyping.
5. Explain user experience (UX) basics.
6. Describe validation methods: customer interviews, feedback, A/B testing.
7. Decide when to pivot and when to persevere.

3.2 Key Definitions

- **Lean startup:** A method of building a business by testing ideas quickly with real customers instead of planning for years in secret.
- **Build–Measure–Learn loop:** Build a small version → measure how customers react → learn what to change → repeat.
- **MVP (Minimum Viable Product):** The smallest, simplest version of your product that still lets real customers try it and give feedback.
- **Pivot:** A major change in direction based on what you learned (for example, changing the customer group or the product).
- **Persevere:** Continuing on the same path because the feedback shows it is working.
- **Validated learning:** Learning proven by real customer behaviour, not by opinions.

3.3 Terminology Table

Term	Simple meaning
Lean startup	Test fast with customers, waste less time and money
MVP	Smallest usable version to test the idea
Prototype	A rough model to show how the product will look/work
UX (user experience)	How easy and pleasant the product is to use
A/B testing	Showing two versions to different customers to see which works better
Pivot	Big direction change after learning
Vanity metrics	Numbers that look good but mean nothing (e.g., total app downloads)

Term	Simple meaning
Actionable metrics	Numbers that guide decisions (e.g., how many users order every week)

3.4 Lean Startup Methodology

TECHNICAL CONCEPT

Traditional business plans assume we know what customers want. Lean startup assumes we are guessing, so we must test guesses cheaply and quickly.

SIMPLE EXPLANATION

Instead of spending one year and lakhs of rupees building a "perfect" medicine-delivery app, build a simple WhatsApp ordering system in one week, take 50 real orders, and learn what customers actually want. That is lean.

3.4.1 Lean Startup Principles

1. **Entrepreneurs are everywhere** — anyone can use this method, including a pharmacy student.
2. **Entrepreneurship is management** — a startup needs disciplined testing, not just passion.
3. **Validated learning** — progress means learning what customers truly want, proven by their actions.
4. **Build–Measure–Learn** — the core loop; go around it as fast as possible.
5. **Innovation accounting** — measure the right numbers to know if you are improving.

3.4.2 The Build–Measure–Learn Feedback Loop

Flowchart (describe for drawing): A circle with three boxes and arrows going round:

BUILD (make the smallest testable version) → **MEASURE** (collect data: how many used it? how many paid?) → **LEARN** (what did we discover? what should change?) → back to **BUILD** (improved version).

EXAMPLE

A pharmacy student builds (BUILD) a one-page website for medicine home delivery in her colony → measures (MEASURE): 30 visitors, 5 orders → learns (LEARN): people want cash-on-delivery option → builds version 2 with COD → loop repeats.

ANALOGY

Like a doctor's treatment cycle — prescribe (build), check reports (measure), adjust dose (learn), prescribe again.

3.5 Concept of MVP

3.5.1 Importance of MVP

- Saves money: you discover failures cheaply, before big investment.
- Saves time: weeks instead of years to get real feedback.
- Reduces risk: you build only what customers prove they want.
- Attracts investors: real users and real orders convince investors more than slides.

3.5.2 Scope and Objectives of MVP

- **Scope:** Minimum features needed to test the MAIN assumption. If the main question is "will people order medicines on WhatsApp?", the MVP needs only: a product list, WhatsApp ordering, and delivery. It does NOT need payment gateway, fancy design, or 10,000 products.
- **Objectives:** (1) Test the riskiest assumption with minimum effort; (2) collect real user behaviour data; (3) decide the next step — pivot or persevere.

3.5.3 Types of MVPs

Type	What it is	Pharmacy example
Landing page MVP	A simple web page describing the product with a "sign up" button to test interest	A page "Medicines delivered in 2 hours — enter your number"
Concierge MVP	You manually do the service while pretending it is automated	Founder personally takes orders on phone and delivers, before any app exists
Wizard of Oz MVP	Looks automatic to the user, but humans work behind the scenes	A "smart refill reminder app" where the founder manually sends reminders at first
Piecemeal MVP	Combine existing free tools to deliver the service	Google Form for orders + WhatsApp for chat + cash on delivery
Single-feature MVP	Only one main feature, nothing extra	An app that does ONLY prescription upload and nothing else

3.5.4 Tools and Resources for Rapid Prototyping

- Paper sketches and cardboard models (for physical products like a new pill box).
- Free website builders and Google Forms (for service MVPs).
- Canva/Figma-type tools for app screen designs (mockups).
- 3D printing for small physical prototypes (e.g., a new inhaler mouthpiece design).
- College labs and incubation centres for testing space and basic equipment.

3.5.5 User Experience (UX) Basics

NOTE

can a normal person use your product easily without confusion or help?

Simple: Few steps to complete the task (upload prescription → confirm → pay).

Clear: Big readable buttons, simple language (use "Order medicines" not "Initiate pharmaceutical procurement").

Fast: Pages and delivery should not make users wait.

Trustworthy: For pharmacy — show pharmacist licence, genuine-medicine promise, clear bills.

Test UX by watching 5 real users try your MVP silently; where they get stuck, your UX is broken.

3.6 Validation

TECHNICAL CONCEPT

Validation means proving with evidence that customers want your product enough to use it or pay for it.

3.6.1 Customer Interviews and Feedback Collection

- Interview 10–20 real potential customers AFTER they try the MVP.
- Ask about behaviour, not opinions: "How did you order last time?" beats "Do you like my app?"
- Collect feedback continuously: a simple rating after each delivery, a WhatsApp group of early users, monthly calls to 5 customers.
- Separate signal from noise: one complaint may be personal taste; ten similar complaints are a real problem.

3.6.2 A/B Testing and Split Testing

Show version A to half your customers and version B to the other half, then compare results.

- Example: A = "Order on WhatsApp" button; B = "Call to order" button. If A gets 3× more orders, keep A.
- Test ONE change at a time, otherwise you will not know what caused the difference.
- Use actionable metrics (orders per 100 visitors), not vanity metrics (total page views).

3.6.3 Pivoting vs Persevering

- **Persevere** when: customers use the product repeatedly, pay willingly, and recommend it to others → continue and improve.
- **Pivot** when: after genuine effort, customers do not return, do not pay, or want something clearly different → change direction courageously.

Common pivot types:

Pivot type	Example
Customer segment pivot	From "delivery for all" to "delivery only for chronic-disease patients"
Product pivot	From "medicine delivery app" to "prescription-management app"
Channel pivot	From "own app" to "sell through WhatsApp and phone"

KEY TAKEAWAY

Pivoting is not failure — it is learning in action. Persevering on a failing idea because of ego IS failure.

3.6.4 Practical Aspect

Participation in sessions/workshops on prototype, MVP, and product development: Colleges and incubators regularly conduct hands-on workshops where you actually build a prototype in a day. Attend them — reading about MVP is not the same as building one.

3.7 Key Points

1. Lean startup = test guesses quickly with real customers; avoid big secret plans.
2. Build–Measure–Learn is the engine; speed of the loop matters.
3. MVP = smallest version that lets customers try it and give feedback.
4. MVP types: landing page, concierge, Wizard of Oz, piecemeal, single-feature.
5. UX basics: simple, clear, fast, trustworthy.
6. Validate with interviews, feedback, and A/B testing (one change at a time).
7. Pivot when evidence says change; persevere when customers return and pay.

3.8 Common Confusions

- **Confusion:** "MVP means a low-quality product." **Clarification:** MVP means minimum FEATURES, not minimum quality — it must still work properly and safely.
- **Confusion:** "Pivoting means my startup failed." **Clarification:** Pivoting means you learned; many famous companies pivoted to success.
- **Confusion:** "A/B testing needs thousands of users." **Clarification:** Even 50–100 users can reveal a clear winner if the difference is big.

3.9 Common Mistakes

1. Building the full product before talking to a single customer.
2. Measuring vanity metrics (downloads) instead of actionable metrics (repeat orders).
3. Asking leading questions in interviews ("Don't you love my app?").
4. Refusing to pivot because of emotional attachment to the original idea.

3.10 Mnemonic

"BML — Be My Learner": Build, Measure, Learn.

"MVP = Most Valuable Proof": it proves customers care.

Pivot or Persevere — "PP": Prove with data, then Pick.

3.11 Exam Summary (One-Page Revision)

- Lean startup: test fast, waste less; 5 principles (entrepreneurs everywhere, management, validated learning, B-M-L, innovation accounting).
- Build–Measure–Learn loop: build small → measure behaviour → learn → repeat.
- MVP importance: saves money/time, reduces risk, attracts investors.
- MVP scope: minimum features to test the main assumption; objectives: test riskiest guess, collect behaviour data, decide pivot/persevere.
- MVP types: landing page, concierge, Wizard of Oz, piecemeal, single-feature.
- Rapid prototyping tools: paper, Google Forms, mockup tools, 3D printing, college labs.
- UX: simple, clear, fast, trustworthy; watch 5 users.
- Validation: customer interviews (behaviour questions), feedback collection, A/B testing (one change, actionable metrics).
- Pivot = change direction on evidence; Persevere = continue when it works.
- Practical: attend prototype/MVP/product-development workshops.

3.12 One-Minute Revision

ONE-MINUTE REVISION

Don't build big in secret — BML fast. MVP = smallest testable version (Most Valuable Proof). Validate with real behaviour. A/B test one change, track actionable metrics. Evidence says change? PIVOT. Customers return and pay? PERSEVERE.

3.13 Exam Questions

Short answer:

1. Define MVP.
2. What is the build–measure–learn loop?
3. List any three types of MVPs.
4. What is A/B testing?
5. Distinguish between pivot and persevere.

Long answer:

1. Explain the lean startup methodology with its five principles.
2. Describe the build–measure–learn feedback loop with a pharmacy example.
3. What is an MVP? Explain its importance, scope, and objectives with types.
4. Explain the methods of validating a startup idea.
5. "Pivoting is learning, not failure." Discuss with examples.

MCQs:

1. MVP stands for:

a) Most Valuable Person b) Minimum Viable Product c) Maximum Value Proposition d) Minimum Variable Price

Answer: b

2. In the build–measure–learn loop, "measure" means:

a) Measuring the office b) Collecting customer behaviour data c) Counting employees d) Measuring profits only

Answer: b

3. A founder manually delivering orders while pretending to have an app is an example of:

a) Landing page MVP b) Concierge MVP c) Piecemeal MVP d) Single-feature MVP

Answer: b

4. Which is an actionable metric?

a) Total app downloads b) Repeat orders per 100 visitors c) Facebook likes d) Website visits

Answer: b

5. You should pivot when:

a) One customer complains b) Evidence shows customers don't return or pay c) A competitor launches d) You feel bored

Answer: b

Viva questions:

1. Why is validated learning better than opinions?
2. Give a pharmacy example of a Wizard of Oz MVP.
3. What is the difference between vanity and actionable metrics?

Application-based:

1. Design an MVP to test "patients want online pharmacist consultation" with under ₹5,000 budget.
2. Your medicine-reminder app has 1,000 downloads but only 20 active users. Diagnose using lean startup concepts and suggest the next step.

3.14 References

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