UNIT–III
OPPORTUNITY ASSESSMENT AND PROTOTYPE DEVELOPMENT

1. Introduction to Opportunity Assessment

Opportunity and Opportunity Assessment

An opportunity is a favorable situation in which an entrepreneur can create a product or service that satisfies a customer need and generates value.

Opportunity assessment is the systematic process of studying a business idea to determine whether it is feasible, attractive, profitable, and sustainable. Before investing significant time and money, entrepreneurs examine customers, competitors, industry conditions, technology, demand, resources, and risks.

Example: Attendance Tracking Application

Suppose students find it difficult to track attendance. Before developing an attendance application, an entrepreneur should ask: Who are the customers? How many students may use it? What solutions already exist? What features and prices do competitors offer? What are the industry trends? How large is the potential market? Will students or colleges pay for the solution?

Major Components

1. Identification of the opportunity
2. Customer and problem analysis
3. Competitor identification and mapping
4. Industry-trend analysis
5. Market sizing
6. Technology and resource assessment
7. Business-model evaluation
8. Risk assessment
9. Prototype development
10. Testing and validation

2. Identification and Mapping of Global Competitors

Meaning of Competitor

A competitor is an individual, organization, or company that offers a product or service satisfying the same or a similar customer need. Competitors may also provide an alternative solution to the same customer problem.

Types of Competitors

Direct competitors: Offer products or services very similar to the proposed solution.

Indirect competitors: Offer different products but satisfy the same customer need.

Potential competitors: Businesses that may enter the market in the future.

Global competitors: Businesses that operate across countries and compete internationally.

Competitor Identification

Entrepreneurs should examine major competitors, operating regions, target customers, products or services, prices, technology, strengths, weaknesses, customer preferences, and unresolved customer problems.

Competitor Mapping

Competitor mapping systematically compares businesses using factors such as price, quality, features, technology, customer service, market coverage, brand image, innovation, convenience, and customer experience. It helps identify the competitive position and possible market gaps.

Positioning Map

A positioning map compares competitors using two important dimensions. For example, the X-axis may range from low price to high price, while the Y-axis ranges from basic features to advanced features. A gap such as affordable price combined with advanced features may indicate an opportunity.

Global Competitor Analysis

Important areas include geographic presence, customer segments, product features, pricing strategy, distribution channels, and customer reviews. Pricing may include premium, low-cost, subscription, freemium, or pay-per-use models.

Competitive Advantage

A competitive advantage is a feature or capability that enables a business to perform better than competitors. Sources include lower cost, better quality, unique features, superior technology, faster delivery, better service, strong branding, convenience, personalization, and innovation.

3. Review of Industry Trends

Meaning

An industry trend is a significant change or development that influences the direction of an industry over time. Trend analysis helps entrepreneurs understand where the market is moving.

Importance

Industry-trend analysis helps identify emerging opportunities, understand customer preferences, predict demand, identify technologies, anticipate competitive changes, reduce risk, develop relevant products, identify threats, plan investments, and build long-term strategies.

Major Types of Trends

Technological trends: Artificial intelligence, IoT, cloud computing, blockchain, robotics, automation, AR, and VR.

Customer trends: Convenience, online purchasing, personalization, faster delivery, digital payments, and sustainable products.

Social trends: Remote work, sustainability awareness, changing lifestyles, digital communities, and health awareness.

Economic trends: Inflation, income levels, interest rates, employment, economic growth, and consumer spending.

Regulatory and government trends: Startup policies, tax policies, environmental regulations, data protection, and import/export regulations.

Environmental trends: Electric vehicles, renewable energy, recycling, sustainable packaging, and energy-efficient products.

Sources of Industry Information

Government reports, industry associations, research reports, annual reports, newspapers and business magazines, customer surveys, competitor websites, social media, market research reports, academic research, startup databases, trade exhibitions, and conferences.

Trend Analysis Process

Observe → Collect Data → Identify Pattern → Analyze Impact → Predict Future → Identify Opportunity.

4. Market Sizing and Assessing Opportunity Scale

Meaning and Importance

Market sizing is the process of estimating the total potential demand or revenue opportunity for a product or service in a particular market. It helps answer: "How large is the opportunity?" Market sizing supports sales and revenue estimates, business planning, investment decisions, target setting, resource allocation, market comparison, and risk reduction.

TAM, SAM and SOM

TAM – Total Addressable Market: The total possible market demand if the business could serve 100% of the relevant market.

SAM – Serviceable Available Market: The portion of TAM the business can realistically serve based on product, geography, customer segment, technology, and business model.

SOM – Serviceable Obtainable Market: The portion of SAM the business can realistically capture in the short or medium term, considering competition, resources, pricing, marketing, and customer acquisition.

Memory aid: TAM = Total Market; SAM = Targetable Market; SOM = Obtainable Market.

TAM–SAM–SOM Example

Suppose an online learning application has 10 lakh potential students and each could generate ₹1,000 annually. TAM = ₹100 crore. If the relevant engineering-student market in India is ₹30 crore, SAM = ₹30 crore. If the startup expects to capture 10% of SAM initially, SOM = ₹3 crore.

Top-Down Approach

The entrepreneur begins with a broad industry estimate and narrows it to the target segment and geography: Total Industry → Target Segment → Geographic Segment → Target Market. It is simple and fast, but can depend heavily on broad assumptions.

Bottom-Up Approach

The entrepreneur begins with the number of potential customers and expected revenue per customer. Basic formula: Market Size = Number of Potential Customers × Average Revenue per Customer. It is generally more specific because it uses customer-level assumptions.

Top-Down vs Bottom-Up

Top-down starts with the total industry and moves from broad to specific; bottom-up starts with individual customers and builds upward. Top-down is useful for initial assessment, while bottom-up is useful for detailed business planning.

Scope and Potential Scale

Scope refers to the range and extent of an opportunity, including target customers, geographic markets, product categories, customer problems, applications, segments, and future expansion. Potential scale refers to possible growth in customers, sales, revenue, geographic coverage, market share, production capacity, employees, and business valuation.

Factors Affecting Opportunity Scale

Market size, customer demand, market growth, competition, customer spending capacity, geographic expansion, and scalability.

Scalability is the ability to increase sales and customers without increasing costs at the same rate. Software applications often demonstrate high scalability.

5. Prototype Development

Meaning

A prototype is an early model, sample, or working version of a product created to test an idea before developing the final product. It converts an abstract idea into something customers can see, experience, and evaluate.

Purpose and Importance

Prototyping converts ideas into visible or usable forms, identifies problems early, saves cost, collects customer feedback, improves design, reduces risk, supports communication with customers and investors, and enables experimentation.

Types of Prototypes

Paper prototype: Product interface represented through sketches; useful for early-stage testing.

Low-fidelity prototype: Simple representation with limited detail and functionality; useful for layout and user-flow testing.

High-fidelity prototype: Detailed model that closely resembles the final product, often with realistic screens and interaction.

Functional prototype: Working model demonstrating important product functions.

Prototype Development Process

1. Define the problem
2. Identify the target user and user needs
3. Develop solution ideas
4. Select essential features
5. Build the prototype
6. Demonstrate and test it with users
7. Collect feedback
8. Improve
9. Retest
10. Develop the MVP

Prototype vs Final Product

Prototype: mainly for testing and learning, quick and lower-cost, limited features, frequent changes, selected testers.

Final product: intended for customer use, detailed development, higher cost, complete features, final quality testing, target-market users.

6. Minimum Viable Product (MVP)

Meaning

An MVP is the simplest usable version of a product containing the minimum essential features needed to solve the customer's main problem and obtain real customer feedback. Its purpose is to test the business idea with minimum time, cost, and resources.

Simple formula: MVP = Minimum Features + Real Customer Value + Maximum Learning.

Characteristics

An effective MVP should be simple, useful, affordable to develop, easy to test, customer-focused, functional, measurable, and upgradeable. It should solve the most important customer problem rather than every possible problem.

MVP Development Process

Identify Problem → Understand Customer → Identify Core Need → Select Essential Features → Build MVP → Launch to Small User Group → Collect Feedback → Measure Results → Improve / Change / Continue.

Prototype vs MVP

Prototype asks: "Can this solution work?" MVP asks: "Will customers use and value this solution?" A prototype may simulate an idea or design, while an MVP is a minimum usable product that can be tested with real customers.

7. Testing, Validation and Customer Feedback

Testing and Validation

Testing checks whether a prototype or MVP works as expected and identifies problems or defects. Validation determines whether the product actually solves a real customer problem and provides sufficient value.

Simple difference: Testing = Does the product work properly? Validation = Are we building the right product for customers?

Types of Testing

Functionality testing: Checks whether important features work correctly.

Usability testing: Checks whether users can easily understand and use the product.

Performance testing: Checks performance under expected conditions.

User acceptance testing: Potential customers determine whether the product meets their requirements.

Prototype testing: Users examine an early model and provide feedback before final development.

Customer Validation Questions

Does the customer have the problem? How frequently does it occur? Is it important? Does the solution solve it? Would customers use it? Would they pay for it? What improvements do they want?

Testing and Validation Cycle

Build → Test → Observe → Collect Feedback → Analyze → Improve → Retest → Validate.

8. Integrated Example: AI-Based College Attendance Application

Opportunity

Problem: Manual attendance management is time-consuming. Target customers include colleges, faculty, and students.

Competitors and Trends

Competitors include existing attendance and college-management applications. Relevant trends include mobile applications, AI, cloud computing, digital education, and automation.

Market and Revenue

Market size can be estimated using the number of colleges and students who could use the solution. Possible revenue models include subscription, college licensing, freemium, and premium features.

Prototype and MVP

Prototype screens may include login, faculty dashboard, student list, attendance marking, attendance percentage, and alerts. User feedback may lead to low-attendance alerts, parent notifications, monthly reports, subject-wise attendance, attendance prediction, or a required-classes calculator. The validated core features can then be developed into an MVP.

Growth Potential

The opportunity may scale from one college to multiple colleges, then to state, national, and international markets, subject to customer demand and competitive validation.

9. Core Teaching Tools and Classroom Activities

Venture Activity: From Problem to MVP

Teams of 4–5 students identify a real problem, define the customer, develop a solution, study 2–3 competitors, estimate TAM/SAM/SOM, build a paper/digital/no-code prototype, test it with 5–10 users, collect feedback, improve it, and present: Problem → Customer → Solution → Competitors → Market → Prototype → Feedback → MVP.

No-Code Innovation Tools

No-code tools allow users to create applications, websites, forms, prototypes, and digital solutions without traditional programming skills. They are useful because they are easy to learn, fast, relatively low-cost, beginner-friendly, and reduce technical barriers.

Examples in the source include Canva for designs and pitch materials; Figma for UI, wireframes and interactive prototypes; Google Forms for surveys and validation; Google Sheets for market and revenue calculations; Glide for simple applications;

and AppSheet for simple business applications. Tool availability, pricing, and features may change, so faculty should check current options before assigning a platform.

Classroom Activity 1: Problem Hunt

Students observe their surroundings for 10 minutes and record: problem, who faces it, frequency, existing solution, and why the existing solution is unsatisfactory. Example: long canteen queues → students → physical ordering → high waiting time → pre-ordering opportunity.

Classroom Activity 2: Competitor Detective

Teams study a product category such as food delivery, online education, digital payments, cab services, e-commerce, or fitness applications. They identify three competitors, price, features, target customers, strengths, weaknesses, and one market gap.

Classroom Activity 3: TAM–SAM–SOM Challenge

Give teams a business idea such as an online tutoring platform for engineering students. Students estimate TAM, SAM, and SOM and present their assumptions. Key learning: a large market does not mean a startup can capture the entire market.

Classroom Activity 4: Prototype in 20 Minutes

Using paper, pens, and sticky notes, teams design a solution to reduce waiting time in the college canteen. They may create a mobile app, token system, QR ordering, digital display, or pre-order system and explain Problem → Solution → Prototype → Customer Benefit.

Classroom Activity 5: Test My Product

One team acts as entrepreneur and another as customer. The customer evaluates whether the problem is real, the solution is useful and easy to use, what should improve, whether they would use it, and whether they would pay for it.

Classroom Activity 6: MVP or Extra?

For a college attendance app, students classify features such as login, attendance percentage, low-attendance alerts, AI chatbot, parent notification, subject-wise attendance, animated profile, social-media integration, attendance prediction, and online shopping into MVP Features or Later Features.

Complete Venture Challenge

Teams of 4–5 students, over 2–3 sessions, identify one real college-life problem and develop a validated MVP concept. Deliverables: problem statement, target customer, proposed solution, competitor map, industry trend, TAM, SAM, SOM, prototype, customer feedback, improvements, MVP concept, and a 2-minute pitch.

TAM–SAM–SOM

Level	Meaning	Example
TAM	Entire potential market	₹100 crore
SAM	Market the business can serve	₹30 crore
SOM	Market the business can realistically capture	₹3 crore

Prototype vs MVP

Basis	Prototype	MVP
Purpose	Test idea/design	Test product in the market
Users	Selected testers	Real customers
Functionality	May be limited/simulated	Minimum usable functionality
Launch	Usually not commercial	Can be launched
Feedback	Design feedback	Product and market feedback

Prototype Types

Type	Main Use
Paper	Early-stage idea testing
Low-fidelity	Layout and user-flow testing
High-fidelity	Detailed design and interaction
Functional	Testing important working functions