

PROJECT PLANNING AND MANAGEMENT

MARKET AND DEMAND ANALYSIS

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CHAPTER

4

Chapter Introduction

Market and demand analysis determines whether sufficient demand exists for the proposed project's product or service. It provides the basis for decisions concerning:

- Project size
- Production capacity
- Selling price
- Location
- Technology
- Revenue projections
- Marketing strategy
- Investment feasibility

Central Market Question

Is there an adequate, accessible and sustainable market for the proposed product or service at a price that supports the project's objectives?

Learning Objectives

By the end of this chapter, students will be able to:

- Explain the purpose of market and demand analysis
- Conduct a situational analysis
- Specify clear market-study objectives
- Identify and evaluate secondary information
- Design and conduct a market survey
- Characterize a proposed market
- Estimate current market demand
- Apply major demand-forecasting techniques
- Assess uncertainty in demand forecasts
- Estimate project market share and sales
- Develop an integrated marketing plan
- Make a market-feasibility recommendation

Chapter Roadmap

This chapter covers:

1

Situational analysis

2

Specification of market objectives

3

Secondary-information collection

4

Market survey

5

Market characterization

6

Demand forecasting

7

Forecasting uncertainty

8

Marketing plan

Opening Reflection

Discussion Question

A proposed project has:

- Modern technology
- Qualified staff
- Adequate financing
- Access to raw materials

Can it still fail?

Explain how inadequate market analysis can result in project failure.

Foundations of Market Analysis

1

What Is Market Analysis?

Market analysis is the systematic assessment of:

- Customers
- Demand
- Supply
- Competition
- Prices
- Distribution
- Market trends
- Market risks

What Is Demand Analysis?

Demand analysis estimates the quantity of a product or service that customers are:

- Willing to purchase
- Able to purchase
- Expected to purchase
- At specified prices
- Within a defined period
- In a defined market

Purpose of Market and Demand Analysis

The analysis helps determine:

- The size of the market
- The rate of market growth
- Customer characteristics
- Current and future competition
- Price levels
- Distribution requirements
- Realistic project sales

Market Analysis and Project Appraisal

Market analysis provides critical inputs into:

- Technical feasibility
- Capacity determination
- Financial projections
- Working-capital estimates
- Risk assessment
- Implementation planning

Weak market assumptions make later feasibility results unreliable.

Market Demand versus Project Demand

Market Demand

Total demand from all customers in the relevant market.

Project Demand

The proportion of total market demand expected to be captured by the proposed project.

Need versus Effective Demand

Need

A desire or requirement for a product or service.

Effective Demand

A need supported by:

- Willingness to purchase
- Ability to pay
- Access to the product
- Intention to purchase

Commercial and Social Demand

Commercial Demand

Supported by customer payments and revenue.

Social Demand

Reflects public need even when users cannot pay the full cost.

Social projects may require:

- Subsidy
- Government financing
- Donor financing
- Cross-subsidization

Main Market-Study Questions

- What product or service will be offered?
- Who will buy or use it?
- Where are customers located?
- How much do they currently consume?
- What influences their purchasing decisions?
- Who currently supplies the market?
- What share can the project capture?

Key Steps in Market and Demand Analysis and Their Interrelationships

EXHIBIT 4.1



STEP-1

Situational Analysis and Specification of Objectives

1

What Is Situational Analysis?

Situational analysis is the preliminary assessment of the environment in which the proposed product or service will be marketed.

It establishes the context for the detailed market study.

Purpose of Situational Analysis

Situational analysis helps the analyst:

- Understand the market environment
- Identify critical questions
- Recognize information gaps
- Identify opportunities and threats
- Define the scope of market research
- Avoid collecting irrelevant information

Main Components

Situational analysis may examine:

- Product and industry
- Customers
- Competitors
- Suppliers
- Distribution channels
- Government policies
- Technology
- Economic and social trends

Internal and External Analysis

Internal Factors

- Existing capabilities
- Product quality
- Cost structure
- Brand
- Distribution
- Management

External Factors

- Demand
- Competition
- Regulation
- Technology
- Economic conditions
- Customer preferences

Product Situation

The analyst should describe:

- Product category
- Main uses
- Product features
- Quality levels
- Packaging
- Product life-cycle stage
- Substitute products
- Complementary products

Industry Situation

Industry analysis may cover:

- Industry size
- Growth rate
- Profitability
- Number of firms
- Capacity utilization
- Entry barriers
- Technology
- Government regulation

Customer Situation

Customer analysis should identify:

- Current users
- Potential users
- Customer segments
- Purchasing power
- Purchase frequency
- Quality expectations
- Price sensitivity
- Buying motives

Competitor Situation

Competitor analysis examines:

- Major competitors
- Market shares
- Capacity
- Products
- Prices
- Distribution
- Strengths
- Weaknesses
- Likely future actions

Supplier Situation

Supplier analysis assesses:

- Availability of inputs
- Number of suppliers
- Prices
- Quality
- Reliability
- Credit terms
- Supplier concentration
- Supply risks

Distribution Situation

Distribution analysis examines:

- Wholesalers
- Retailers
- Agents
- Direct sales
- Online channels
- Transport
- Warehousing
- Customer access

Economic Environment

Relevant economic factors include:

- GDP growth
- Inflation
- Interest rates
- Exchange rates
- Employment
- Income
- Consumer confidence
- Business cycles

Government and Regulatory Environment

Assess:

- Product standards
- Price controls
- Import duties
- Export rules
- Tax incentives
- Consumer protection
- Licensing
- Competition policy

Technological Environment

Technological trends may affect:

- Product design
- Production cost
- Customer expectations
- Distribution channels
- Product substitution
- Marketing communication

Socio-Demographic Environment

Important variables include:

- Population
- Age
- Household size
- Income distribution
- Urbanization
- Education
- Employment
- Lifestyle

SWOT Analysis

Situational analysis may be summarized through:

- Strengths
- Weaknesses
- Opportunities
- Threats

Market SWOT Example

Strength

Locally available raw materials.

Weakness

Limited brand recognition.

Opportunity

Growing urban demand.

Threat

Low-priced imported products.

PESTLE Analysis

A broader environmental assessment may use these factors:

- Political
- Economic
- Social
- Technological
- Legal
- Environmental

Situational-Analysis Output

The output should identify:

- Major market opportunities
- Principal constraints
- Information gaps
- Likely target customers
- Major competitors
- Critical assumptions
- Areas requiring primary research

Specification of Market Objectives

3

Why Specify Market Objectives?

A market study must begin with clear objectives. Without defined objectives, research may become:

- Too broad
- Expensive
- Time-consuming
- Inconsistent
- Irrelevant to project decisions

Market-Study Objective

A market-study objective defines the specific information required to support a project decision.

Possible Market Objectives

The study may seek to estimate:

- Current demand
- Future demand
- Market segments
- Customer preferences
- Price sensitivity
- Competitive supply
- Distribution requirements
- Expected project market share

Decision-Oriented Objectives

Objectives should be linked to decisions such as:

- Should the project proceed?
- What capacity should be installed?
- Which product should be offered?
- Which customer segment should be targeted?
- What price should be charged?
- Which distribution channel should be used?

Broad versus Specific Objective

Broad Objective

Study the market for poultry feed.

Specific Objective

Estimate annual poultry-feed demand among commercial and smallholder farms in the Somali Region over the next five years.

Objective Components

A strong market objective identifies:

- Product or service
- Customer group
- Geographic area
- Time period
- Information required
- Decision to be supported

Market Boundaries

The market should be clearly defined by:

- Product
- Customer
- Geography
- Price range
- Distribution channel
- Time period

Geographic Boundaries

Possible geographic markets include:

- Local
- Regional
- National
- Export
- Urban
- Rural
- Online

Customer Boundaries

The study may focus on:

- Individual consumers
- Households
- Retailers
- Businesses
- Government institutions
- Nonprofit organizations
- Export buyers

Product Boundaries

The analyst should decide whether the market includes:

- Exact products
- Product variants
- Substitutes
- Complementary products
- Imported alternatives
- Informal-sector products

Information Requirements

For every objective, specify:

- Data needed
- Data source
- Collection method
- Level of accuracy
- Required timing
- Responsible analyst

Market-Research Questions

Examples include:

- How many customers exist?
- How frequently do they purchase?
- How much do they buy?
- What prices do they pay?
- What quality do they expect?
- Why do they change suppliers?

Market-Study Terms of Reference

A Terms of Reference may include:

- Background
- Study objectives
- Scope
- Research questions
- Methodology
- Geographic coverage
- Deliverables
- Schedule
- Required expertise

STEP 2

Secondary-Information Collection

2

What Is Secondary Information?

Secondary information consists of data already collected for another purpose but relevant to the current market study.

Why Begin with Secondary Information?

Secondary information is usually:

- Faster to obtain
- Less expensive
- Useful for historical analysis
- Helpful for designing primary research
- Useful for identifying data gaps

Internal Secondary Sources

Internal sources may include:

- Sales records
- Customer databases
- Financial statements
- Production records
- Complaint records
- Distribution reports
- Previous market studies

External Secondary Sources

External sources may include:

- Government statistics
- Industry associations
- Research institutions
- Academic publications
- Trade reports
- Banks
- International organizations
- Consulting firms

Government Data

Government sources may provide:

- Population data
- Production statistics
- Import and export data
- Price information
- Employment statistics
- Household expenditure
- Industrial capacity
- Regional economic data

Industry and Trade Sources

Industry sources may provide:

- Market size
- Market trends
- Competitor information
- Technology changes
- Price trends
- Distribution structures
- Industry forecasts

Financial-Institution Sources

Banks and development institutions may provide:

- Sector studies
- Credit reports
- Investment profiles
- Market-risk assessments
- Project-financing experience
- Industry performance data

Digital Sources

Digital information may come from:

- Company websites
- Online marketplaces
- Digital price platforms
- Search trends
- Customer reviews
- Social-media discussions
- Online databases

Evaluating Secondary Information

Assess information based on:

- Relevance
- Accuracy
- Currency
- Coverage
- Methodology
- Consistency
- Credibility
- Accessibility

Relevance

Ask:

- Does the data cover the required product?
- Does it cover the target customers?
- Is the geographic area appropriate?
- Does it cover the required period?
- Are the units comparable?

Accuracy and Reliability

Review:

- Data-collection method
- Sample size
- Definitions
- Organization responsible
- Possible bias
- Quality-control procedures

Currency of Information

Market information may become outdated because of:

- Inflation
- Technology
- Policy change
- Population growth
- New competitors
- Consumer preferences
- Economic shocks

Consistency Check

Compare data from several sources. When sources differ, investigate:

- Definitions
- Time periods
- Geographic coverage
- Formal versus informal activity
- Measurement methods

Triangulation

Triangulation improves confidence by comparing:

- Government statistics
- Industry reports
- Customer interviews
- Distributor records
- Field observations

Secondary-Data Table

Information Needed	Source	Period	Reliability	Limitation
Population	Census	Current	High	May lack projections
Imports	Customs	Five years	Medium	Informal imports excluded
Prices	Retail survey	Current	High	Limited locations

Secondary-Information Gaps

Secondary information may not adequately show:

- Customer preferences
- Buying motives
- Willingness to pay
- Brand loyalty
- Unmet demand
- Informal supply
- Future purchase intention

These gaps may require a market survey.

STEP 3

Market Survey

3

What Is a Market Survey?

A market survey is the systematic collection of primary information directly from market participants.

Purpose of a Market Survey

A survey may estimate:

- Customer numbers
- Consumption
- Purchase frequency
- Product preferences
- Price sensitivity
- Satisfaction
- Future purchase intention
- Competitor perception

When Is a Market Survey Necessary?

A survey is appropriate when:

- Secondary data are inadequate
- Customer behavior is unknown
- The product is new
- Informal markets are significant
- Detailed segmentation is needed
- Price acceptance must be tested

Market-Survey Process

1

Define objectives

2

Identify respondents

3

Select research method

4

Design the instrument

5

Select the sample

6

Train data collectors

7

Collect data

8

Clean and analyze data

9

Report findings

Target Population

The target population is the full group about which the study intends to draw conclusions. Examples:

- All poultry farms in a region
- Urban households
- Retail pharmacies
- Government health facilities
- Export buyers

Sampling Frame

A sampling frame is a list or operational representation of the target population from which the sample is selected. Examples:

- Customer register
- Business-licence list
- Household list
- Cooperative membership
- Geographic enumeration areas

Census versus Sample Survey

Census

Collects data from all population members.

Sample Survey

Collects data from a selected subset.

A census may be feasible for a small business population.

Probability Sampling

Probability methods include:

- Simple random sampling
- Systematic sampling
- Stratified sampling
- Cluster sampling
- Multistage sampling

Nonprobability Sampling

Nonprobability methods include:

- Convenience sampling
- Purposive sampling
- Quota sampling
- Snowball sampling

These may be useful for exploratory research but provide weaker statistical representation.

Stratified Sampling

Stratified sampling divides the population into important groups. Example:

- Small farms
- Medium farms
- Large farms

A sample is then drawn from each group.

Survey Methods

Primary market data may be collected through:

- Face-to-face interviews
- Telephone interviews
- Online surveys
- Focus groups
- Observation
- Product testing
- Retailer interviews

Questionnaire Design

A questionnaire should contain:

- Introductory statement
- Screening questions
- Consumption questions
- Preference questions
- Price questions
- Satisfaction questions
- Respondent characteristics

Open and Closed Questions

Closed Questions

Provide predetermined responses.

ADVANTAGES

- Easy to answer
- Easy to code
- Easy to compare

Open Questions

Allow respondents to answer freely.

ADVANTAGES

- Richer information
- New insights
- Explanations

Question-Design Principles

Questions should be:

- Clear
- Neutral
- Specific
- Relevant
- Easy to understand
- Limited to one issue
- Free from technical jargon

Leading Question

Weak Question

Do you agree that our high-quality product is better than imported products?

Improved Question

How would you compare the quality of locally produced and imported products?

Double-Barrelled Question

Weak Question

Are you satisfied with the price and quality? This asks two questions at once.

Improved Approach

Ask separate questions about:

- Price
- Quality

Recall Period

The survey should specify a reasonable recall period. Examples:

- Purchases during the last week
- Monthly consumption
- Purchases during the last agricultural season

Long recall periods may reduce accuracy.

Pilot Testing

A pilot test helps identify:

- Unclear questions
- Missing response options
- Interview length
- Logical errors
- Enumerator difficulties
- Sensitive questions

Enumerator Training

Training should cover:

- Study objectives
- Questionnaire meaning
- Ethical procedures
- Interview techniques
- Digital tools
- Quality checks
- Field supervision

Survey Bias

Possible sources of bias include:

- Sampling bias
- Nonresponse bias
- Social-desirability bias
- Interviewer bias
- Recall bias
- Leading questions
- Data-entry errors

Survey Ethics

Survey respondents should receive:

- Clear information
- Voluntary participation
- Confidentiality
- Privacy
- Protection from harm
- Right to decline

Survey Data Analysis

Analysis may include:

- Frequencies
- Percentages
- Averages
- Cross-tabulation
- Segment comparison
- Price analysis
- Purchase-intention analysis
- Qualitative themes

Survey Result Example

Suppose 400 customers are surveyed:

- 280 currently purchase the product
- 240 are dissatisfied with current supply
- 220 indicate willingness to try a new local product
- 180 accept the proposed price

The results should be interpreted cautiously rather than treated automatically as guaranteed sales.

STEP 4

4

Market Characterization

Meaning of Market Characterization

Market characterization presents a structured description of the relevant market based on secondary and primary information.

Main Market Characteristics

The analysis should describe:

- Effective demand
- Demand trends
- Market segments
- Buyer behavior
- Supply
- Competition
- Prices
- Distribution
- Government policy

Effective Demand

Effective demand is the quantity customers are willing and able to purchase at prevailing or expected prices.

Total Market Demand

Total market demand may be estimated using:

$$\text{Total Demand} = \text{Number of Customers} \times \text{Average Consumption}$$

Demand Example

Potential customers

20,000

Average annual consumption

50 units

$$\text{Annual Market Demand } 20,000 \times 50 = \mathbf{1,000,000 \text{ units}}$$

Market Segmentation

The market may be segmented by:

- Geography
- Demographics
- Income
- Lifestyle
- Buying behavior
- Organization size
- Product use
- Benefits sought

Geographic Segmentation

Examples:

- Urban and rural
- Regions
- Cities
- Climate zones
- Distance from distribution points
- Domestic and export markets

Demographic Segmentation

Examples:

- Age
- Gender
- Income
- Education
- Occupation
- Household size
- Family stage

Behavioral Segmentation

Examples:

- Purchase frequency
- Usage volume
- Loyalty
- Price sensitivity
- Benefits sought
- Readiness to buy

Institutional Segmentation

Business and institutional customers may be segmented by:

- Industry
- Size
- Purchase volume
- Ownership
- Location
- Procurement method
- Creditworthiness

Target Market

The target market is the segment selected for focused marketing effort. It should be:

- Identifiable
- Measurable
- Accessible
- Sufficiently large
- Strategically suitable
- Financially attractive

Buyer Behavior

Buyer behavior analysis examines:

- Who buys?
- Who uses?
- Who influences?
- Who approves?
- When do they buy?
- Why do they buy?
- How do they select suppliers?

Consumer Buying Process

1

Need recognition

2

Information search

3

Evaluation of alternatives

4

Purchase decision

5

Post-purchase evaluation

Organizational Buying

Organizational buying may involve:

- User departments
- Technical evaluators
- Procurement units
- Finance departments
- Senior managers
- Regulatory authorities

Market Supply

Market supply is the quantity of the product offered by:

- Domestic producers
- Imports
- Informal producers
- Government suppliers
- Alternative service providers

Supply Analysis

Assess:

- Installed capacity
- Actual output
- Capacity utilization
- Imports
- Planned expansion
- New entrants
- Product quality
- Regional distribution

Apparent Consumption

For a product market:

$$\text{Apparent Consumption} = \text{Domestic Production} + \text{Imports} - \text{Exports}$$

Inventory adjustments may also be required.

Apparent-Consumption Example

Domestic production

80,000

Imports

30,000

Exports

5,000

$$\text{Apparent Consumption } 80,000 + 30,000 - 5,000 = \mathbf{105,000 \text{ units}}$$

Demand–Supply Gap

$$\text{Demand–Supply Gap} = \text{Estimated Demand} - \text{Expected Supply}$$

Positive Market Gap

Demand > Supply → the market may have unmet demand

However, the project must still compete on:

- Price
- Quality
- Location
- Reliability
- Distribution

Negative Market Gap

Supply > Demand → the market may experience:

- Excess capacity
- Price pressure
- Strong competition
- Low capacity utilization
- Higher entry risk

Competition Analysis

Competitor analysis should cover:

- Number of competitors
- Market share
- Capacity
- Product quality
- Price
- Location
- Distribution
- Customer loyalty
- Likely response

Competitor Matrix

Competitor	Market Share	Price	Quality	Distribution	Main Advantage
A	35%	High	High	Strong	Brand
B	25%	Medium	Medium	Strong	Availability
C	15%	Low	Low	Limited	Price

Market Concentration

A concentrated market is dominated by a small number of suppliers. It may indicate:

- Strong market power
- High barriers to entry
- Limited competition
- Potential opportunity for differentiation

Product Substitutes

Substitutes may limit:

- Selling price
- Market share
- Growth
- Customer loyalty
- Project profitability

Price Analysis

Price analysis should examine:

- Historical prices
- Current market price
- Competitor prices
- Customer willingness to pay
- Seasonal variation
- Discounts
- Credit terms
- Government controls

Distribution Analysis

Distribution analysis should determine:

- How products reach customers
- Number of intermediaries
- Distribution margins
- Transportation costs
- Storage needs
- Channel control
- Geographic coverage

Market-Characterization Summary

A market profile should summarize:

- Market size
- Growth
- Segments
- Buying behavior
- Current supply
- Competitive structure
- Prices
- Distribution
- Market opportunities
- Market constraints

STEP5

Demand Forecasting

5

What Is Demand Forecasting?

Demand forecasting estimates the future quantity of a product or service that the market is expected to absorb.

Purpose of Demand Forecasting

Demand forecasts support decisions concerning:

- Project capacity
- Production planning
- Equipment
- Staffing
- Inventory
- Revenue
- Financing
- Marketing

Forecasting Horizon

Short-Term

Operational and inventory planning.

Medium-Term

Budgeting and capacity utilization.

Long-Term

Investment and project appraisal.

Qualitative Forecasting Methods

Qualitative methods include:

- Jury of executive opinion
- Expert opinion
- Delphi method
- Sales-force estimates
- Customer-intention surveys
- Scenario judgment

Jury of Executive Opinion

Senior managers collectively estimate demand using:

- Experience
- Market information
- Judgment
- Strategic knowledge

Advantages

- Fast
- Uses management knowledge

Limitations

- Bias
- Group influence
- Limited transparency

Delphi Method

The Delphi method uses several rounds of confidential expert judgments. After each round:

- Responses are summarized
- Experts reconsider their estimates
- Areas of agreement and disagreement emerge

Sales-Force Composite

Sales representatives estimate future demand for their territories. The estimates are then combined.

Advantages

- Close to customers
- Local market knowledge

Limitations

- Optimism or pessimism
- Incentive-related bias
- Limited long-term perspective

Customer-Intention Survey

Customers are asked about intended future purchases. The analyst should distinguish between:

- Stated intention
- Actual purchasing behavior
- Ability to pay
- Timing of purchase

Quantitative Forecasting Methods

Quantitative methods include:

- Trend projection
- Moving average
- Exponential smoothing
- Regression analysis
- End-use method
- Consumption-level method
- Leading-indicator method

Seven Methods Answer Three Different Questions

OVERVIEW OF QUANTITATIVE METHODS

Time-Series Methods

What does the historical pattern suggest?

- 1 Trend projection
- 2 Moving average
- 3 Exponential smoothing

Causal Method

What measurable factor drives demand?

- 4 Regression analysis

Market-Based Methods

Who will use, consume or signal demand?

- 5 End-use method
- 6 Consumption-level method
- 7 Leading-indicator method

Selection principle: Choose the method that matches the available data, demand pattern, forecast period and decision.

1 Trend Projection Extends a Historical Pattern

TIME-SERIES METHOD · TREND PROJECTION

Trend projection uses past upward, downward or stable demand patterns to forecast future demand.

MODEL

$$Y_t = a + bt$$

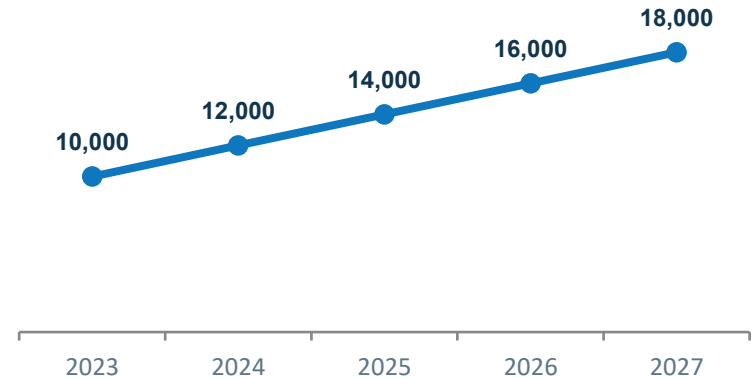
Y_t = forecast demand

a = starting value b = change per period

t = time

Best used when: Demand shows a clear and stable long-term trend.

HISTORICAL SALES & 2027 FORECAST



Annual increase = 2,000 units · 2027 = 16,000 + 2,000

2027 FORECAST

18,000 units

2

Moving Averages Smooth Short-Term Fluctuations

TIME-SERIES METHOD · MOVING AVERAGE

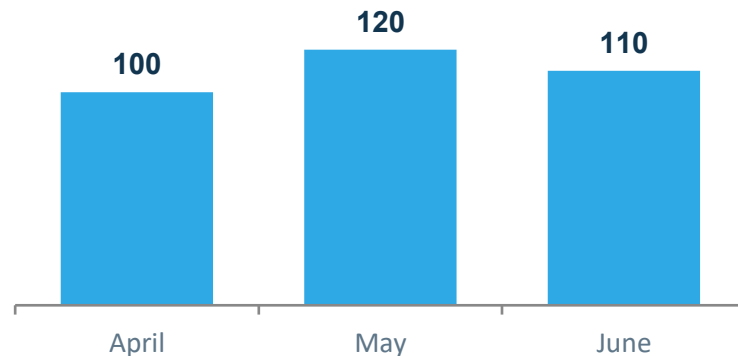
The next-period forecast is calculated from the average demand of a selected number of recent periods.

FORMULA

$$F_{t+1} = \frac{A_t + A_{t-1} + \dots + A_{t-n+1}}{n}$$

Best used when: Demand is relatively stable and short-term fluctuations need to be smoothed.

THREE-MONTH MOVING AVERAGE



$$(100 + 120 + 110) \div 3 = 110$$

JULY FORECAST

110 units

3

Recent Demand Receives Greater Weight

TIME-SERIES METHOD · EXPONENTIAL SMOOTHING

Exponential smoothing combines the latest actual demand with the previous forecast.

FORMULA

$$F_{t+1} = \alpha A_t + (1 - \alpha)F_t$$

α = smoothing constant (0 to 1)

A_t = current actual demand

F_t = previous forecast

Best used when: *Recent demand information is more relevant than older observations.*

WORKED EXAMPLE

Previous forecast = 100 units

Actual demand = 120 units

$\alpha = 0.30$

$$F_{t+1} = (0.30 \times 120) + (0.70 \times 100)$$

$$F_{t+1} = 36 + 70 = 106 \text{ units}$$

NEXT-PERIOD FORECAST

106 units

4

Regression Links Demand to Measurable Drivers

CAUSAL METHOD · REGRESSION ANALYSIS

Regression analysis estimates demand using variables such as price, income, population or advertising expenditure.

SIMPLE REGRESSION MODEL

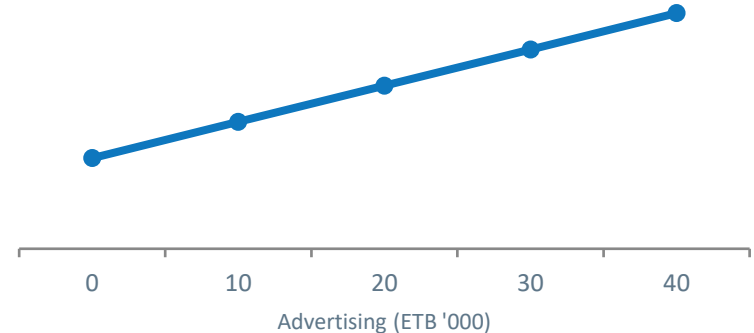
$$Y = a + bX$$

Y = forecast demand X = influencing variable

a = constant b = effect of X on demand

Best used when: Demand is strongly influenced by measurable economic or business factors.

DEMAND VS. ADVERTISING · $Y = 500 + 20X$



At ETB 30,000: $Y = 500 + (20 \times 30)$

FORECAST SALES

1,100 units

5

End-Use Forecasting Builds Demand Sector by Sector

MARKET-BASED METHOD · END-USE

The end-use method identifies the different uses of a product and estimates demand from each sector.

FORMULA

$$\text{Total Demand} = \sum (\text{Users} \times \text{Usage per User})$$

Best used when: A product is used as an input by identifiable industries or customer groups.

EXAMPLE: STEEL DEMAND

End-use sector	Calculation	Demand
Construction	1,000 projects × 2 tonnes	2,000 t
Manufacturing	500 users × 1 tonne	500 t

$$\text{Total Demand} = 2,000 + 500$$

TOTAL FORECAST

2,500 tonnes

6

Consumption-Level Forecasting Scales Individual Demand

MARKET-BASED METHOD · CONSUMPTION-LEVEL

This method multiplies the projected population or number of households by average consumption.

FORMULA

Total Demand =
Population × Per-Capita Consumption

Best used when: *Forecasting food, beverages, clothing, electricity and other widely consumed products.*

EXAMPLE: COOKING-OIL DEMAND

Projected population = 2,000,000 people

Annual consumption = 8 litres per person

$$2,000,000 \times 8 = 16,000,000$$

Adjust for income growth, price changes and consumption elasticity.

ANNUAL DEMAND

16,000,000 litres

7

Leading Indicators Provide Early Demand Signals

MARKET-BASED METHOD · LEADING INDICATOR

A leading indicator changes before the demand for a related product changes.

INDICATOR → DEMAND

Building permits → cement demand

Birth rates → future school enrolment

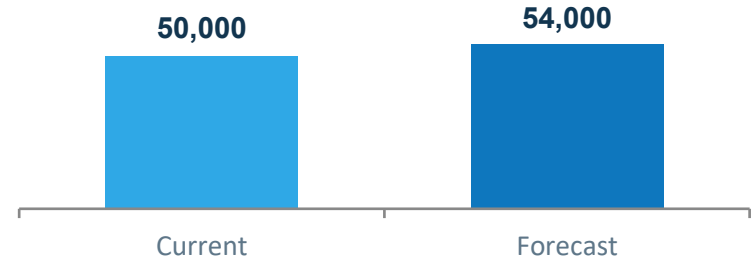
Vehicle registrations → fuel demand

Investment approvals → machinery demand

Best used when: *A reliable variable consistently changes before product demand changes.*

WORKED EXAMPLE · CEMENT DEMAND

A 10% rise in building permits is expected to raise cement demand 8% after six months.



$$\text{Expected increase} = 50,000 \times 8\% = 4,000$$

FORECAST DEMAND

54,000 tonnes

10

Match the Method to the Forecasting Question

SELECTING THE APPROPRIATE METHOD

Method	Main basis	Appropriate application
Trend projection	Historical direction	Stable long-term growth or decline
Moving average	Average of recent periods	Smoothing short-term fluctuations
Exponential smoothing	Weighted recent demand	Rapid forecast updating
Regression analysis	Demand-driver relationship	Price, income or advertising effects
End-use method	Demand from each sector	Industrial inputs such as steel
Consumption-level method	Population × consumption	Food, energy and household goods
Leading-indicator method	Early demand signal	Permits, registrations or birth rates

Key takeaway: Strong forecasts often combine several methods and compare their forecasting errors over time.

Forecast-Method Selection

Choose the method based on:

- Data availability
- Forecast horizon
- Product maturity
- Market stability
- Required accuracy
- Cost
- Technical capacity

Uncertainty in Demand Forecasting

Forecasts Are Not Certainties

Demand forecasts are estimates based on:

- Data
- Assumptions
- Models
- Judgment
- Expected future conditions

Actual demand may differ substantially.

Sources of Forecasting Uncertainty

Uncertainty may arise from:

- Poor data
- Economic shocks
- New competitors
- Technology changes
- Policy changes
- Price changes
- Consumer preferences
- Climate events

Model Risk

A forecasting model may be inappropriate because:

- Relationships are nonlinear
- Historical trends have changed
- Important variables are omitted
- Structural breaks have occurred
- Data are insufficient

Parameter Risk

Even when the model is appropriate, estimated values may be uncertain, such as:

- Growth rate
- Price elasticity
- Income elasticity
- Market share

Scenario Forecasting

Prepare at least three forecasts:

Optimistic

Base Case

Pessimistic

Scenario Assumptions

Variable	Optimistic	Base Case	Pessimistic
Market growth	12%	8%	3%
Project share	10%	7%	4%
Selling price	+5%	Planned	-10%
Entry date	Early	On time	Delayed

Scenario Demand

Suppose current market demand is 100,000 units. One-year forecasts:

- Optimistic growth of 12%: 112,000
- Base growth of 8%: 108,000
- Pessimistic growth of 3%: 103,000

Sensitivity Analysis

Sensitivity analysis determines how project results change when one demand assumption changes. Possible variables include:

- Market growth
- Market share
- Selling price
- Customer conversion
- Capacity utilization

Demand Sensitivity Example

Base-case sales: 50,000 units

Test sales 10%, 20% and 30% lower, then recalculate:

- Revenue
- Break-even level
- NPV
- IRR
- DSCR

Forecast Range

Rather than presenting only one figure, the forecast may show a range.

- Example range: 80,000 to 110,000 units

Base estimate: 95,000 units

Prediction Interval

A prediction interval indicates the range within which future demand may fall at a specified confidence level.

It reminds decision-makers that forecasts contain statistical uncertainty.

Forecast Error

$$\text{Forecast Error} = \text{Actual Demand} - \text{Forecast Demand}$$

Mean Absolute Error

$$\text{MAE} = \sum |\text{Forecast Error}| \div n$$

A lower value generally indicates a more accurate forecast.

Percentage Forecast Error

$$\text{Percentage Error} = (\text{Actual} - \text{Forecast}) \div \text{Actual} \times 100$$

Forecast Review

Demand forecasts should be updated when:

- New market data become available
- Prices change materially
- Competitors enter
- Project implementation is delayed
- Regulations change
- Customer behavior changes

Conservative Capacity Planning

When demand is uncertain, the project may consider:

- Phased capacity
- Modular equipment
- Leasing
- Outsourcing
- Flexible production
- Pilot launch

Avoiding Optimism Bias

Optimism bias may result in:

- Overstated market growth
- Unrealistic market share
- Immediate full-capacity assumptions
- Ignoring competitor response
- Overestimating willingness to pay

Independent review can reduce this bias.

Project Sales Forecast

Market Demand versus Project Sales

Project sales depend on:

- Total market demand
- Target segment
- Project capacity
- Competitive position
- Price
- Distribution
- Marketing effort
- Market entry timing

Project Market Share

$$\text{Market Share} = (\text{Project Sales} \div \text{Total Market Sales}) \times 100$$

Market-Share Example

Total market demand

200,000 units

Expected project sales

20,000 units

$$\text{Market Share } 20,000 \div 200,000 \times 100 = \mathbf{10\%}$$

Realistic Market-Share Assessment

Consider:

- New-project status
- Competitor loyalty
- Product differentiation
- Sales capacity
- Distribution coverage
- Marketing budget
- Customer switching cost

Project Sales Formula

$$\text{Project Sales} = \text{Total Market Demand} \times \text{Expected Market Share}$$

Project-Sales Example

Forecast market demand

500,000 units

Expected share

6%

$$\text{Project Sales } 500,000 \times 6\% = \mathbf{30,000 \text{ units}}$$

Capacity Constraint

Projected sales cannot exceed:

- Production capacity
- Input availability
- Labour capacity
- Storage
- Distribution capacity
- Quality-control capacity

Sales Ramp-Up

A new project may gradually develop market share:

- Year 1: 3%
- Year 2: 5%
- Year 3: 7%
- Year 4: 8%
- Year 5: 9%

Revenue Projection

$$\text{Revenue} = \text{Sales Volume} \times \text{Selling Price}$$

Multiple-Product Revenue

$$\text{Total Revenue} = \sum (Q_i \times P_i)$$

Where:

- Q_i = quantity of product i
- P_i = price of product i

STEP 6

Marketing Plan

6

What Is a Marketing Plan?

A marketing plan explains how the project will:

- Attract customers
- Position its offering
- Set prices
- Distribute products
- Communicate value
- Achieve projected sales

Marketing-Plan Components

1

Market objectives

2

Target market

3

Positioning

4

Product strategy

5

Pricing strategy

6

Distribution strategy

7

Promotion strategy

8

Sales forecast

9

Marketing budget

10

Performance indicators

Marketing Objectives

Examples:

- Achieve 5% market share in Year 1
- Reach 500 institutional customers
- Establish distribution in five cities
- Achieve 80% customer retention
- Increase brand awareness to 60%

Segmentation, Targeting and Positioning

Segmentation

Divide the market into groups.

Targeting

Select the most attractive groups.

Positioning

Define how the product should be perceived by those groups.

Positioning Statement

A positioning statement identifies:

- Target customer
- Customer need
- Product category
- Main benefit
- Competitive distinction

Positioning Example

For medium-sized poultry farms seeking reliable feed quality, the proposed project provides locally produced, nutritionally balanced feed with consistent supply and technical support.

Marketing Mix

The traditional marketing mix includes:

- Product
- Price
- Place
- Promotion

For services, it may also include: People, Process and Physical evidence.

Product Strategy

Product decisions include:

- Features
- Quality
- Brand
- Packaging
- Product range
- Warranty
- After-sales service
- Product development

Product-Mix Strategy

A project may offer:

- Basic product
- Standard product
- Premium product
- Different package sizes
- Customized variants
- Institutional packages

Branding

A strong brand can communicate:

- Quality
- Reliability
- Identity
- Origin
- Trust
- Differentiation

Packaging

Packaging may support:

- Protection
- Storage
- Transport
- Information
- Convenience
- Branding
- Regulatory compliance

Pricing Strategy

Pricing should consider:

- Cost
- Customer value
- Competitor prices
- Demand
- Market objectives
- Regulation
- Channel margins
- Credit terms

Cost-Based Pricing

$$\text{Selling Price} = \text{Unit Cost} + \text{Markup}$$

Competition-Based Pricing

The project may price:

- Below competitors
- At market level
- Above competitors

A higher price requires a credible additional benefit.

Value-Based Pricing

Value-based pricing reflects the benefits customers believe they receive. It may consider:

- Cost savings
- Productivity
- Convenience
- Risk reduction
- Quality
- Reliability

Penetration Pricing

Penetration pricing uses a relatively low initial price to:

- Attract customers
- Encourage trial
- Build market share
- Enter a competitive market

Price Skimming

Price skimming begins with a high price and reduces it over time. It may be appropriate when:

- The product is innovative
- Competition is limited
- Early adopters value the product highly
- Initial supply is limited

Distribution Strategy

The distribution plan should specify:

- Direct or indirect channels
- Intermediaries
- Geographic coverage
- Storage
- Transport
- Inventory
- Order processing
- Customer delivery

Direct Distribution

Direct channels may include:

- Own stores
- Sales representatives
- Online platforms
- Direct institutional contracts
- Mobile sales units

Indirect Distribution

Indirect channels may include:

- Wholesalers
- Retailers
- Agents
- Cooperatives
- Distributors
- Franchise operators

Channel-Selection Criteria

Assess channels based on:

- Cost
- Customer access
- Speed
- Coverage
- Control
- Reliability
- Storage needs
- Product characteristics

Promotion Strategy

Promotional methods may include:

- Advertising
- Personal selling
- Sales promotion
- Public relations
- Social media
- Demonstrations
- Trade fairs
- Community communication

Personal Selling

Personal selling is important when:

- Products are technical
- Sales value is high
- Customers are institutional
- Relationships matter
- Product demonstrations are needed

Sales Promotion

Sales promotion may include:

- Introductory discounts
- Free samples
- Volume discounts
- Dealer incentives
- Loyalty programmes
- Trial offers

Marketing Budget

The marketing budget may include:

- Market research
- Branding
- Advertising
- Sales staff
- Distributor margins
- Promotion
- Customer service
- Product launch

Marketing Performance Indicators

Possible indicators include:

- Sales volume
- Market share
- Customer acquisition
- Customer retention
- Distribution coverage
- Average selling price
- Customer satisfaction
- Promotion response

Marketing-Control Process

Set Objectives

Implement Activities

Measure Results

Compare with Targets

Take Corrective Action

Integrated Practical Application

MBA Case Exercise

Proposed Poultry-Feed Project — the project plans to produce and serve:

Products

- Layer feed
- Broiler starter feed
- Broiler finisher feed
- Chick feed

Target Market

- Commercial poultry farms
- Smallholder poultry producers
- Agricultural cooperatives
- Input retailers

Situational-Analysis Questions

Students should assess:

- Poultry-industry growth
- Feed demand
- Current suppliers
- Import dependence
- Raw-material availability
- Government livestock policy
- Customer concerns

Market Objectives

Possible objectives include:

- Estimate annual poultry-feed demand
- Identify customer segments
- Assess current prices
- Evaluate competitor quality
- Estimate acceptable selling price
- Forecast demand for five years

Secondary Information Required

- Number of poultry farms
- Poultry population
- Feed imports
- Local feed production
- Feed prices
- Maize and soybean supply
- Industry growth
- Government livestock plans

Market-Survey Respondents

The survey may include:

- Small farms
- Medium farms
- Large farms
- Retailers
- Cooperatives
- Veterinary officers
- Existing feed suppliers

Survey Questions

- How much feed do you purchase monthly?
- Which feed types do you use?
- Which suppliers do you use?
- What prices do you pay?
- What quality problems do you face?
- Would you buy locally produced feed?
- What payment terms do you prefer?

Demand Data

Assume:

- 500 small farms consume 20 tonnes annually
- 50 medium farms consume 100 tonnes annually
- 10 large farms consume 500 tonnes annually

Demand Calculation

Small farms (500×20)

10,000 t

Medium farms (50×100)

5,000 t

Large farms (10×500)

5,000 t

Total Demand **20,000 tonnes**

Supply Data

Assume the following supply sources:

Local production

6,000 t

Imports (other regions)

8,000 t

Informal production

1,000 t

Total Supply **15,000 tonnes**

Demand–Supply Gap

$$\text{Gap } 20,000 - 15,000 = 5,000 \text{ tonnes}$$

Forecast Demand

Assume annual demand growth of 8%.

$$\text{Year 2 } 20,000 \times 1.08 = 21,600 \text{ tonnes}$$

$$\text{Year 3 } 20,000 \times (1.08)^2 = 23,328 \text{ tonnes}$$

Project-Sales Estimate

If the project captures 40% of the initial gap:

$$\text{Project Sales } 5,000 \times 40\% = 2,000 \text{ tonnes}$$

Revenue Estimate

Assume a selling price of ETB 40,000 per tonne.

$$\text{Revenue } 2,000 \times 40,000 = \text{ETB } 80,000,000$$

Forecast-Uncertainty Exercise

Prepare three scenarios:

Optimistic

- Strong poultry growth
- Higher customer acceptance
- Stable input prices

Base Case

- Expected growth and market share

Pessimistic

- Poultry disease
- Lower demand
- Competitor price reduction

Marketing-Plan Exercise

Each group should recommend:

- Target segment
- Positioning
- Product mix
- Price
- Distribution
- Promotion
- Marketing budget
- Performance indicators

Group Assignment

Each group should prepare:

1 Situational analysis

2 Market-study objectives

3 Secondary-data plan

4 Market-survey questionnaire

5 Sampling approach

6 Market characterization

7 Demand estimate

8 Supply estimate

9 Five-year demand forecast

10 Uncertainty scenarios

11 Project-sales estimate

12 Marketing plan

13 Market-feasibility recommendation

Chapter Review

Common Market-Analysis Mistakes

- Defining the market too broadly
- Assuming need equals effective demand
- Depending on one information source
- Using outdated secondary information
- Selecting an unrepresentative sample
- Asking leading survey questions
- Ignoring informal supply
- Assuming the project captures the full market gap
- Using one optimistic forecast
- Ignoring competitor response

Common Forecasting Mistakes

- Extending historical growth indefinitely
- Ignoring structural change
- Assuming immediate full capacity
- Using unsupported market share
- Treating purchase intention as guaranteed demand
- Ignoring product substitutes
- Failing to update the forecast
- Hiding uncertainty behind one estimate

Market-Analysis Checklist

Confirm that:

- Market objectives are clear
- Product and geographic boundaries are defined
- Secondary data are evaluated
- Primary research is properly designed
- Customer segments are identified
- Current demand is estimated
- Existing and future supply are analyzed
- Competition is assessed
- Forecast assumptions are documented
- Uncertainty is tested
- Project market share is realistic
- Marketing strategy supports projected sales

Knowledge Check

- What is situational analysis?
- Why should market objectives be specified?
- What is secondary information?
- When is a market survey necessary?
- What is effective demand?
- How is apparent consumption calculated?
- What is the demand–supply gap?
- What are qualitative forecasting methods?
- What is trend projection?
- Why should scenarios be prepared?
- How is project market share calculated?
- What are the major components of a marketing plan?

Knowledge Check Answers

- Preliminary assessment of the product and market environment
- To focus data collection on specific decisions
- Existing data collected for another purpose
- When secondary data cannot answer key market questions
- Demand supported by willingness and ability to pay
- Domestic production plus imports minus exports
- Forecast demand minus expected supply
- Expert opinion, Delphi, sales-force estimates and customer surveys
- Extending historical demand patterns into the future
- To reflect uncertainty and test alternative conditions
- Project sales divided by total market sales
- Objectives, target market, positioning, product, price, place, promotion and budget

Individual Assignment

Select one proposed project and prepare:

- Situational analysis
- Market-study objectives
- Market boundaries
- Secondary-information matrix
- Primary-research plan
- Questionnaire
- Sampling method
- Customer segmentation
- Competitor matrix
- Current demand estimate
- Supply estimate
- Demand–supply gap
- Five-year demand forecast
- Optimistic, base and pessimistic scenarios
- Market-share estimate
- Revenue forecast
- Marketing plan
- Final market-feasibility conclusion

Chapter Summary

- Market analysis determines whether a sufficient and sustainable market exists.
- Situational analysis establishes the market context.
- Market objectives guide efficient information collection.
- Secondary information should be used before primary research.
- Market surveys provide customer-specific evidence.
- Market characterization describes demand, supply, customers, competition, price and distribution.
- Demand forecasting estimates future market requirements.
- Forecasting methods may be qualitative or quantitative.
- Forecasts should recognize uncertainty.
- A positive demand–supply gap does not guarantee project sales.
- Project market share should be conservative and evidence-based.
- The marketing plan converts market findings into product, price, distribution and promotion strategies.

Key Message

Market analysis is not intended to justify a preferred project idea. Its purpose is to test whether real customers, credible demand and a defensible marketing strategy exist.

Situation → Objectives → Information → Survey → Market Profile → Forecast → Uncertainty → Marketing Plan → Decision

Next Chapter Preview

Next -Chapter 5: Technical Analysis

The next chapter will cover:

- Manufacturing process and technology
- Technical arrangements
- Product mix
- Plant capacity
- Materials and inputs
- Location and site
- Machinery and equipment
- Structures and civil works
- Environmental aspects
- Project charts and layouts
- Work schedule
- Cost of project

Questions & Discussion

THANK YOU

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Reliable market and demand analysis transforms assumptions about customers into evidence-based decisions about project size, sales, pricing, distribution and financial viability.