Unit 1

Business Environment

Contents

Nature and Importance of Business Environment....10
- Etymology and Core Meaning....10
- Definition Bank....10
- Historical Evolution (Brief)....10
- Major Theories and Thinkers....11
- **Paradigm Comparison**: Micro vs Macro Environment....12
- Analytical Frameworks and Application....12
- SWOT Analysis – Detailed Structure....12
- **Continuous Monitoring**: The Demonetisation Case....13
- CSR Mandate under Companies Act, 2013 (Section 135)....13
- VUCA in the Modern Indian Context....14

Environmental Scanning and Forecasting....15
- Etymology and Core Meaning....15
- Definition Bank....15
- Historical Evolution....15
- **Paradigm Comparison**: Scanning vs Forecasting vs Monitoring....15
- Types of Environmental Scanning....16
- Techniques of Environmental Scanning....16
- Interaction Matrix for Environmental Relationships....17
- Environmental Forecasting....17
- Continuous vs Periodic Scanning....18
- Role of Big Data and AI in Environmental Scanning....18

Socio-Cultural Environment....19
- Etymology and Core Meaning....19
- Definition Bank....19
- Historical Evolution....19
- Major Theories and Thinkers....20
- **Paradigm Comparison**: Demographic vs. Psychographic Segmentation....20
- Analytical Frameworks and Application....21
- Socio-Cultural Factors Reshaping Business Strategy....21
- Changing Patterns of Consumer Demand in India....23

Technological Environment....25
- **1.** Plain Overview....25
- **2.** Etymology & Core Meaning....25
- **3.** Definition Bank....25
- **4.** Historical Evolution....25
- **5.** Major Theories & Thinkers....26
- **6. Paradigm Comparison**: Industrial vs Digital Economy....26
- **7.** Analytical Frameworks & Application....26
- **8.** Exam Mastery Block....28
- Pace of Innovation, R&D Spending, and Automation....28
- Creation of New Industries: FinTech and EdTech....29
- Obsolescence of Traditional Retail and the Technology Obsolescence Threat....29
- India's Digital India Initiative and UPI Revolution....30
- **Regulatory Aspect**: Digital Personal Data Protection Act, 2023....30
- **Conclusion**: Strategic Implications for Managers....31

Fiscal and Monetary Policy: Tools and Business Implications....32
- Etymology & Core Meaning....32
- Definition Bank....32
- Historical Evolution....33

Major Theories & Thinkers....33
Paradigm Comparison: Fiscal vs Monetary Policy....33
Analytical Frameworks & Application....34
Exam Fact Cluster (for MCQs)....36
Assertion–Reason....37
Match the Following....37
Transmission Mechanism & Its Imperfections (India-Specific)....38
FRBM Act: Targets, Breaches, and the Way Forward....39
Flexible Inflation Targeting & MPC Performance....39
Business Impact: Sectoral Analysis....39
COVID-19 Policy Response: Lessons....40
Statutory Business Environment in India....41
Meaning and Sources of the Statutory Environment....41
Classification of Key Business Laws....41
Characteristics of the Indian Statutory Environment....42
Significance for Business....43
Economic Planning in India: Five-Year Plans....44
Mahalanobis Model and the Heavy Industry Focus (Plans 1–5)....46
Shift in Focus: Agriculture, Employment, and Poverty (Plans 6–12)....47
Achievements and Failures of Five-Year Planning....47
End of Five-Year Plans and NITI Aayog (2015 onwards)....48
Table: Comparison of Planning Eras (1951–2017)....49
Exam Application: How This Topic Is Tested....49
Shifts in Planning Strategy: From Heavy Industry to Inclusive Growth....50
Centralised Resource Allocation (1951–1990: Plans I–V)....50
Plan-wise Achievements (1951–2017)....50
Why the Five-Year Plans Ended — and What Replaced Them....51
Criticisms of Five-Year Plans — A Thematic Review....52
Contemporary Relevance — Why Five-Year Plans Still Matter for Exams....52
Final Distinctions — Trapper Options to Watch....53
One Final Data Point — A Quick Timeline....53
NITI Aayog and the New Planning Framework....54
Plain Overview....54
Etymology and Core Meaning....54
Definition Bank....54
Historical Evolution....54
Major Thinkers and Conceptual Underpinnings....55
Paradigm Comparison: Planning Commission vs NITI Aayog....55
Analytical Frameworks and Application....56
Structure of NITI Aayog....56
Key Initiatives (Objectively Relevant)....56
No Fund Allocation – A Defining Feature....57
The Three-Document Planning Framework: Vision, Strategy, Action Agenda....57
Critiques and Rejoinders: The “Toothless Tiger” Debate....57
Competitive Federalism Through Indices: A New Tool....58
Think Tank Function: Beyond Planning....58
Current Relevance in Business Environment....59
Conclusion: A New Paradigm, Still Evolving....59
Economic Planning in Madhya Pradesh....60
Evolution of Planning in Madhya Pradesh....60
Planning Machinery of the State....60
Objectives of Planning in M.P....61
Atmanirbhar Madhya Pradesh Roadmap and Viksit M.P. @2047....61
Profile of the Madhya Pradesh Economy....62
Investment and Industrial Promotion Policy....63

Major Welfare and Development Schemes of M.P....64
Critical Appraisal of Planning in M.P....64
Industrial Policy and the Licensing Regime....66
Plain Overview....66
Etymology and Core Meaning....66
Definition Bank....66
Historical Evolution....66
1. The Foundation: 1948 and 1956 Resolutions....66
2. The Licensing Instrument: IDR Act 1951....67
3. The Licence Raj (1960s-1980s): Consequences....67
4. Partial Reforms in the 1980s....67
5. The 1991 Breakthrough....67
6. Current Industrial Policy (2014 onwards)....68
Paradigm Comparison: Pre-1991 vs Post-1991....68
Analytical Frameworks & Application....68
Phases of Indian Licensing Regime....68
Current Classification of Industries for Licensing (2024)....69
PLI Schemes: 14 Sectors (Examples)....69
Current Industrial Policy Framework (2014 Onwards)....70
The 1956 Industrial Policy Resolution (IPR 1956): Blueprint of the Mixed Economy....73
Industrial Policy 1991: The Paradigm Shift....74
Current Industrial Policy: Make in India & PLI....75
Privatization, Globalization and Disinvestment....77
Plain Overview....77
Etymology & Core Meaning....77
Definition Bank....77
Historical Evolution....77
Major Theories & Thinkers....78
Paradigm Comparison....78
Analytical Frameworks & Application....79
Competition Policy, Monopoly and the MRTP Act, 1969....81
Monopoly: Meaning, Types and Sources....81
Background to the MRTP Act....82
Objectives of the MRTP Act....82
Main Provisions....83
The MRTP Commission....84
Amendments: 1980, 1982, 1984, 1985 and 1991....84
Why the MRTP Act Was Repealed....85
Raghavan Committee (2000)....85
Transition to the Competition Act, 2002....85
National Competition Policy and Contemporary Issues....86
Industrial Sickness and Revival Mechanisms....88
Etymology and Core Meaning....88
Definition Bank....88
Historical Evolution....88
Major Theories & Thinkers....89
Paradigm Comparison: BIFR (SICA) vs IBC....89
Analytical Frameworks & Application....90
Causes of Industrial Sickness....90
Revival Mechanisms: The IBC Process....91
Government Packages and Institutional Role....91
Ratio Analysis for Sickness Detection....91
Journal Entry Format for Writing Off Losses (in revival plan)....92
Development and Protection of Small-Scale Industries....93
Start-ups and Their Economic and Social Impact....95

Plain Overview....95
Etymology & Core Meaning....95
Definition Bank....95
Historical Evolution of the Startup Ecosystem....96
Major Theories and Thinkers....96
Comparison with Traditional Small Medium Enterprises (SMEs)....97
Analytical Frameworks and Applications....97
Criticisms and Debates: Wealth Creation vs Inequality....100
Comparative Ecosystem Analysis: India, USA, China....100
Future Frontiers: Deep Tech and Policy Evolution....101
Regulatory Framework: Environmental Protection, RTI, and Corporate Governance....102
Plain Overview....102
Etymology and Core Meaning....102
Definition Bank....102
Historical Evolution....103
Major Theories and Thinkers....104
Paradigm Comparison....104
Analytical Frameworks and Application....105
Consumer Protection Policy in India....108
Need for Consumer Protection....108
Objectives of Consumer Protection Policy....108
Evolution of Consumer Protection Policy....108
Instruments of Consumer Protection Policy....109
Consumer Protection in Madhya Pradesh....110
Role of Business in Consumer Protection....110
Consumer Protection Law: Act of 1986 (Syllabus) and Act of 2019 (Current)....112
Etymology and Core Meaning....112
Definition Bank....112
Historical Evolution....112
Major Theories and Thinkers....113
Paradigm Comparison: CPA 1986 vs CPA 2019....113
Consumer Protection Act, 1986: Significance, Consumer Organisations and Redressal Agencies....114
Consumer Rights (Section 6)....116
Unfair Trade Practices (Section 2(47))....116
Product Liability (Sections 82-87)....117
Central Consumer Protection Authority (CCPA) – Sections 10-25....117
Consumer Disputes Redressal Commissions – Sections 28-34 (District), 40-58 (State, National)....118
Alternative Dispute Resolution: Mediation (Chapter V, Sections 37-47)....118
E-commerce: Liability of Marketplace and Seller....118
Penalties (Sections 89-92)....119
Assertion–Reason....119
Match the Following....120
Definition of Consumer (Section 2(7))....121
Consumer Rights (Section 6) — Revision Notes....121
Unfair Trade Practices (Section 2(47)) — Revision Notes....121
Restrictive Trade Practices....121
Product Liability (Sections 82–87) — Revision Notes....122
Central Consumer Protection Authority (CCPA) (Sections 10–25)....122
Consumer Disputes Redressal Commissions (Three-Tier System)....122
Alternative Dispute Resolution (ADR) – Mediation (Chapter V) — Revision Notes....122
E-commerce Liability....122
Penalties (Sections 89–92) — Revision Notes....123
Environment Protection Act 1986: Umbrella Legislation for Environmental Governance....124
Plain Overview....124
Etymology and Core Meaning....124

Definition Bank....124
Historical Evolution....124
1. Powers of Central Government (Sections 3 and 6)....125
2. Duty to Comply (Section 7)....125
3. Environmental Clearance — EIA Notification 2006....125
4. Penalties (Section 15)....126
5. Role of Business: Compliance and CSR....126
Assertion–Reason Pair....127
Match the Following....127
Environment Protection Policy in India....128
Constitutional and Policy Foundations....128
Evolution of Environment Policy....128
National Environment Policy, 2006....129
Environmental Impact Assessment (EIA)....130
National Green Tribunal (NGT)....130
Climate Change Policy and Business....130
Environment Policy in Madhya Pradesh....131

Nature and Importance of Business Environment

A business does not operate in a vacuum. Every decision a firm makes is shaped by forces outside its control—customer preferences, government regulations, competitor actions, technological shifts, and broader economic tides. These forces collectively form the **business environment**, and understanding it is the first condition for survival, growth, and strategic success. Whether a company is launching a new product, setting a price, or entering a foreign market, the environment tells it what is possible, what is risky, and what is obsolete.

Etymology and Core Meaning

The word **environment** comes from the Old French environ—"around, surrounding"—combined with the suffix -ment, meaning "the condition of being surrounded." For a business, the environment is literally everything that surrounds its operations. It includes factors **internal** (within the firm: employees, culture, resources) and **external** (outside the firm: customers, competitors, laws, technology, economy, society). The core idea is that business is an open system; it takes inputs from the environment, transforms them, and returns outputs to the environment. No firm can isolate itself from external influence.

Definition Bank

The following definitions, from recognised scholars and official bodies, capture the essence of the business environment.

Authority	Definition
Keith Davis	"The business environment is the aggregate of all conditions, events, and influences that surround and affect a business firm."
William F. Glueck	"The business environment includes factors external to the firm that can lead to opportunities or threats."
K. Aswathappa	"Business environment is the sum total of all external and internal factors that influence the functioning of a business enterprise."
Francis Cherunilam	"The business environment consists of all those forces that have a bearing on the decisions and operations of a business."
Business Dictionary (WebFinance)	"The combination of internal and external factors that influence a company's operating situation."

Plain-English Restatement: The business environment is everything outside (and some things inside) a company that can help it grow or harm it—and that a manager must always watch to make smart decisions.

Historical Evolution (Brief)

The systematic study of the business environment emerged in the mid-20th century, as firms grew larger and markets became more interdependent.

- **1950s–1960s:** The **open-systems** view (Ludwig von Bertalanffy, 1956) replaced the closed-factory model. A business was seen as a system that interacts with its environment.
- **1967:** Francis Aguilar published Scanning the Business Environment, introducing the **PEST** (Political, Economic, Social, Technological) framework—the first structured tool for environmental scanning.
- **1970s:** The **SWOT** framework (Strengths, Weaknesses, Opportunities, Threats) was developed by Learned, Christensen, Andrews, and Guth at the Harvard Business School, linking internal analysis (Strengths/Weaknesses) with external analysis (Opportunities/Threats).
- **1980s:** Michael Porter's **Five Forces** model (1980) added a rigorous industry-level lens, focusing on competitive rivalry, supplier power, buyer power, threat of substitutes, and threat of new entrants.
- **1990s–2000s:** Globalisation, liberalisation (India's 1991 reforms), and the internet explosion forced firms to monitor a wider set of forces. The **PESTLE** extension (adding Legal and Environmental) became popular.
- **2010s onward:** The **VUCA** concept (Volatility, Uncertainty, Complexity, Ambiguity)—originally a U.S. Army War College term from the 1990s, popularised in business by Johansen (2007)—captures the modern business reality of rapid, unpredictable change.

Major Theories and Thinkers

Thinker/Theorist	Core Contribution	Year	Plain-Sentence Summary
Francis Aguilar	PEST framework (Political, Economic, Social, Technological)	1967	A manager should scan four broad external categories before making major decisions.
Learned et al. (Harvard)	SWOT analysis	1969	Match internal strengths/weaknesses to external opportunities/threats for strategy formulation.
Michael Porter	Five Forces model	1980	Industry profitability depends on five competitive forces, not just direct rivals.
Henry Mintzberg	Emergent strategy, environmental uncertainty	1990s	Strategy often reacts to environmental surprises, not just deliberate plans.
Bob Johansen	VUCA for business	2007	Leaders must prepare for high-volatility, uncertain, complex, and ambiguous conditions.

SWOT Analysis is now the cornerstone of strategic planning. It forces a firm to look inward (Strengths and Weaknesses) and outward (Opportunities and Threats) simultaneously. For example, a small Indian e-commerce start-up might list **Strength**: cash-on-delivery logistics; **Weakness**: limited brand trust; **Opportunity**: growing smartphone penetration in rural India; **Threat**: aggressive pricing by Amazon/Flipkart.

PESTLE Analysis expands the external scan into six dimensions:

Acronym	Factor	Example
P	**Political** – government stability, tax policy, trade restrictions	GST implementation in India (2017)
E	**Economic** – GDP growth, inflation, interest rates, exchange rates	RBI repo rate changes affecting loan costs
S	**Social** – demographics, lifestyle changes, education levels	Rising health awareness → demand for organic food
T	**Technological** – innovations, automation, R&D spending	UPI-based payments transforming retail
L	**Legal** – laws, regulations, consumer protection	Consumer Protection Act, 2019
E	**Environmental** – climate change, sustainability, waste management	Ban on single-use plastics in many states

VUCA is not a formal theory but a diagnostic lens. Each component demands a different management response:

- **Volatility** (rapid, short-lived changes) → need for agility, not rigid long-term plans.
- **Uncertainty** (unknown outcomes, but cause-effect is clear) → need for scenario planning and data gathering.
- **Complexity** (many interconnected parts, no single cause) → need for systems thinking and cross-functional teams.
- **Ambiguity** (cause-effect is unknown, no precedents) → need for experimentation and learning by doing.

Paradigm Comparison: Micro vs Macro Environment

The business environment is typically classified into two layers:

Aspect	Micro Environment	Macro Environment
Definition	Forces close to the firm that directly affect its daily operations.	Broad external forces that affect all firms in the economy.
Components	Customers, suppliers, competitors, intermediaries, publics.	PESTLE factors – Political, Economic, Social, Technological, Legal, Environmental.
Controllability	Partially controllable – the firm can influence through marketing, pricing, negotiations.	Completely uncontrollable – the firm can only adapt.
Example from India	A smartphone company's competition with Xiaomi, its chip supplier (Qualcomm), and its retail partners.	The 2020 COVID-19 lockdown affecting all businesses simultaneously.
Scanning Frequency	Daily/weekly – sales data, competitor moves.	Quarterly/annually – budget announcements, demographic surveys.

Both layers interact: a macro-economic policy change (e.g., demonetisation in 2016) immediately ripples into the micro environment—customers stop buying, supply chains break, and competitors adjust prices.

Analytical Frameworks and Application

SWOT Analysis – Detailed Structure

- **Strengths:** Internal attributes that give the firm a competitive edge (e.g., patented technology, loyal customer base, strong brand).
- **Weaknesses:** Internal attributes that put the firm at a disadvantage (e.g., high employee turnover, weak R&D, outdated machinery).
- **Opportunities:** External conditions that the firm can exploit to its advantage (e.g., growing middle class, new export markets, supportive government schemes like Production-Linked Incentive).
- **Threats:** External conditions that could harm the firm (e.g., new regulations, substitutes, aggressive competitors, economic recession).

Real Example – Indian Automobile Industry (Maruti Suzuki)

- **Strengths:** Largest market share (>40%), widespread service network, fuel-efficient cars.
- **Weaknesses:** Limited presence in premium/SUV segment, slow EV adoption.
- **Opportunities:** Government's EV policy, rising income in semi-urban areas, export potential.
- **Threats:** Increasing competition from Hyundai, Tata, Kia; stricter BS-VI emission norms; shift to shared mobility.

Continuous Monitoring: The Demonetisation Case

On 8 November 2016, the Indian government demonetised ₹500 and ₹1,000 notes, wiping out 86% of currency in circulation overnight. Firms that had **continuous monitoring** mechanisms in place—especially those tracking political and regulatory signals—were better prepared.

- **Those who suffered:** Small retailers, kirana stores, cash-dependent businesses (real estate, construction) saw a massive sales drop for 2-3 months.
- **Those who benefited:** Digital payment companies (Paytm, PhonePe) saw exponential growth. Firms that had already invested in digital infrastructure captured the **opportunity** embedded in the **threat**.
- **Exam Point:** This event is a textbook illustration of a **macro-environment shock** (political + economic) creating both **threats** (cash crunch) and **opportunities** (digital pivot). It also shows the **dynamic** and **inter-related** nature of business environment factors: a political

decision instantly altered the economic, social, and technological landscape.

CSR Mandate under Companies Act, 2013 (Section 135)

From 2014, India became one of the few countries to **mandate** Corporate Social Responsibility (CSR). Section 135 applies to companies meeting any of these thresholds in the preceding financial year:

- Net worth ≥ ₹500 crore, OR
- Turnover ≥ ₹1,000 crore, OR
- Net profit ≥ ₹5 crore.

Such companies must:

- Constitute a **CSR Committee** of at least three directors (including one independent director).
- Spend at least **2% of the average net profit of the preceding three years** on CSR activities specified in Schedule VII (e.g., education, health, environment, rural development, Swachh Bharat).
- Report reasons for any shortfall in spending.

Why this matters for the Business Environment: CSR is a **legal** and **social** force. Companies failing to comply face public scrutiny and potential penalties. It also creates an **opportunity** for firms to enhance brand reputation and stakeholder trust. For example, Tata Group has long spent more than the mandated 2%, viewing it as part of their ethos.

VUCA in the Modern Indian Context

India's business environment is especially VUCA due to rapid economic change, political unpredictability, diverse social fabric, and technological leapfrogging.

- **Volatility:** Commodity prices, exchange rate swings (₹/$ from 65 in 2014 to 83 in 2023 back to 73 in 2024).
- **Uncertainty:** Election outcomes, sudden policy flip-flops (e.g., retro-tax on Vodafone, later withdrawn).
- **Complexity:** Interplay of 28 states, each with different labour laws, GST rates, and local taxes.
- **Ambiguity:** Impact of AI on jobs, regulatory stance on cryptocurrencies, climate-change adaptation.

Managerial Response: Firms must invest in **environmental scanning** units, use **scenario planning** (e.g., "What if US tariffs rise?"), and build **resilience** through diversified supply chains and flexible cost structures.

Environmental Scanning and Forecasting

Environmental Scanning and Forecasting is the systematic process by which an organization monitors, evaluates, and disseminates information about its external and internal environment to identify opportunities and threats. It is the intelligence function of strategic management — like a radar system that alerts managers to emerging trends, competitor moves, regulatory shifts, and technological disruptions. Without it, strategy becomes guesswork.

Etymology and Core Meaning

The word "scanning" comes from the Latin scandere (to climb), suggesting a step-by-step examination from a vantage point. "Forecasting" derives from the Old English fore (before) and cweþan (to say), meaning to declare in advance. Together, environmental scanning implies climbing above the daily noise to survey the horizon, while forecasting attempts to predict the likely shape of that horizon.

Definition Bank

- **Francis Aguilar (1967)** — "Environmental scanning is the acquisition and use of information about events, trends, and relationships in an organization's external environment."
- **Fahey and Narayanan (1986)** — "The process of monitoring and evaluating information from the external environment to help managers in strategic decision-making."
- **Lenz and Engledow (1986)** — "A systematic process for detecting environmental changes and providing early warning signals to organizational decision-makers."
- **Plain English:** Environmental scanning is the way a company gathers relevant information from the outside world — from politics, economy, society, technology, law, and ecology — and uses that information to make better plans.

Historical Evolution

Aguilar's 1967 book Scanning the Business Environment first categorized the practice. In the 1970s, Royal Dutch Shell used **scenario planning** (pioneered by **Pierre Wack**) to anticipate oil price shocks. The 1980s saw the rise of **PEST analysis** (Aguilar's original PEST acronym: Political, Economic, Social, Technological) which later became **PESTLE** (adding Legal and Environmental) as regulatory and ecological concerns grew. The **Delphi technique**, developed at the RAND Corporation in the 1950s (Helmer and Dalkey), was formalized for business forecasting by the 1970s. By the 2000s, **big data and AI** transformed scanning from manual analysis to real-time sentiment mining of social media, news feeds, and IoT sensor data.

Paradigm Comparison: Scanning vs Forecasting vs Monitoring

Feature	Scanning	Monitoring	Forecasting
Purpose	Early detection of change	Tracking specific trends over time	Estimating future states
Scope	Broad, unfocused	Narrow, focused	Analytical, model-based
Time horizon	Short to medium	Continuous	Medium to long
Output	Alerts, themes	Trend graphs, dashboards	Quantitative predictions, scenarios

Types of Environmental Scanning

Passive scanning — The organization relies on incidental exposure to information (e.g., reading trade journals without a structured search). It is unsystematic and often misses weak signals. **Active scanning** — Managers deliberately search for specific information (e.g., competitor prices, regulatory draft rules). Active scanning is systematic, uses checklists, and assigns responsibility. Most high-performing firms combine both: passive for serendipity, active for targeted intelligence.

Techniques of Environmental Scanning

PESTLE Analysis — A framework to categorize macro-environmental forces. Each letter stands for a set of factors:

- **Political** — government stability, tax policy, trade restrictions (e.g., India's 2017 GST rollout)
- **Economic** — inflation, exchange rates, GDP growth (e.g., 2020 pandemic recession)
- **Social** — demographics, lifestyle trends, consumer values (e.g., rise of health-conscious eating)
- **Technological** — automation, R&D, digital disruption (e.g., AI in banking)
- **Legal** — labour laws, safety standards, intellectual property (e.g., China's 2019 trade secrets law)
- **Environmental** — climate regulations, carbon footprints, sustainability (e.g., EU's 2020 Green Deal)

ETOP (Environmental Threat and Opportunity Profile) — A matrix that rates each environmental factor on two dimensions: **impact** (high/medium/low) and **probability** (high/medium/low). Example: a rise in GST rate scores high impact + high probability → urgent strategic action. ETOP helps prioritize which factors to monitor actively.

Contour Plotting / Cross-Impact Matrices — A technique that maps interrelationships among variables. For example, plotting interest rates (x-axis) against inflation (y-axis) with GDP growth as contour lines. In objective exams, the term "cross-impact matrix" is often used synonymously.

Example: A rise in crude oil prices (factor A) increases fertilizer costs (factor B) → food inflation (factor C). The matrix captures these ripple effects.
Scenario Building — Constructing multiple plausible futures (e.g., best-case, worst-case, most-likely) and testing current strategy against each. Not prediction — it asks "what if?" Shell's 1970s scenarios correctly anticipated oil volatility. **Exam note:** Scenarios are qualitative and multi-variable; they differ from forecasts which are quantitative and single-variable.
Delphi Technique — A panel of experts answers questionnaires in successive rounds, with controlled feedback after each round. The goal is convergence of opinion. Steps: (1) select experts; (2) send first-round questionnaire; (3) summarize and share results; (4) re-question experts until consensus emerges. **Key exam point:** Anonymity is maintained to avoid groupthink. Used for long-term technological and social forecasting.

Interaction Matrix for Environmental Relationships

An interaction matrix maps pairwise influences between environmental factors. E.g., a 2×2 matrix:

Factor	Inflation	Technology
Inflation	-	Lowers R&D spending
Technology	Reduces costs	-

- Each cell shows how the row factor affects the column factor. **Exam trap:** Candidates often confuse this with a correlation matrix. An interaction matrix is directional (A affects B, not necessarily the reverse).

Environmental Forecasting

Forecasting uses historical data and models to predict future trends. Methods:
Regression Analysis — Establishes a mathematical relationship between a dependent variable (sales) and one or more independent variables (advertising spend, GDP). The basic linear regression formula:

$$Y = a + bX + \varepsilon$$

where Y = predicted value, a = intercept, b = slope coefficient, X = independent variable, ε = error term. The least-squares estimates are

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - \left(\sum X\right)^2}, a = \acute{Y} - b\,\acute{X}$$

Example: An FMCG firm predicts quarterly sales using advertising expenditure as X. **Exam point:** R^2 measures goodness-of-fit; a high R^2 (>0.7) indicates the model explains most of the variance.
Time-Series Analysis — Projecting future values based solely on past patterns. Common techniques:

- **Moving average**:

$$M\,A_t = \frac{Y_t + Y_{t-1} + \cdots + Y_{t-n+1}}{n}$$

Smooths short-term fluctuations. **E.g.**: a 3-month moving average of sales 120, 132, 141 gives $MA = \frac{120+132+141}{3} = 131$, used as the forecast for the next month.

- **Exponential smoothing**:

$$F_{t+1} = \alpha\, Y_t + \left(1 - \alpha\right) F_t$$

where α is the smoothing constant $(0 < \alpha < 1)$. Gives more weight to recent observations; weights decline geometrically as $\alpha, \alpha\left(1-\alpha\right), \alpha\left(1-\alpha\right)^2, \ldots$

> **Worked Example — Exponential Smoothing**
> Actual sales this quarter $Y_t = 500$ units; the forecast for this quarter was $F_t = 460$; $\alpha = 0.2$.
> $$F_{t+1} = 0.2\left(500\right) + 0.8\left(460\right) = 100 + 368 = 468 \text{ units}$$

- **Trend projection** using linear regression on time index.

Expert Opinion — Used when historical data is scarce or structural change renders past patterns invalid. Methods: **Delphi** (anonymous convergence) and **market research panels** (e.g., asking industry analysts for PC shipment forecasts). **Limitation:** Expert biases can skew results.

Continuous vs Periodic Scanning

Aspect	Continuous Scanning	Periodic Scanning
Frequency	Ongoing, real-time	Quarterly/annually
Sectors	**IT, pharma, e-commerce** (high uncertainty)	**Manufacturing, utilities** (stable environment)
Tools	Social media monitoring, news alerts, big data dashboards	Surveys, PESTLE review, competitor analysis
Cost	High	Low