CHAPTER 8

ENTERPRISE RESOURCE PLANNING SYSTEMS

ERP systems integrate core business functions — **finance, HR, supply chain** — into a **single platform**, enabling seamless data flow, better decisions and efficiency. Implementation needs careful planning due to **high costs, resistance to change and data migration issues**. Covers components, the implementation cycle, benefits, types, selection and challenges.

CHAPTER ROADMAP

1	Key components	8 modules
2	Implementation cycle	7 phases
3	Benefits of ERP	10
4	Types of ERP	3
5	Key considerations	4
6	Implementation challenges	5
7	ERP in financial services & CBS	

DEFINITION

ERP systems are integrated software platforms used to manage and automate various business functions — the backbone of an organisation's operations.

Integrate **finance, procurement, manufacturing, inventory, HR and CRM** into a **single, unified system** → streamlined workflows, better data accuracy, decisions through **real-time insights**.

Primary goal

A **centralised platform** where all departments access **shared data** → collaborate more effectively and make **data-driven decisions**. Helps achieve **operational efficiency** and a **competitive edge**.

KEY IDEA One database, many modules — data entered once is available everywhere in **real time**.



MEMORY HOOK **"Five Hungry Students Can Make Instant Pasta Properly"** → **F**inance · **H**RM · **S**CM · **C**RM · **M**anufacturing · **I**nventory · **P**rocurement · **P**roject management.

1 KEY COMPONENTS OF AN ERP SYSTEM

8 modules · each addresses a business need

1 Financial Management — CORE MODULE

Manages financial transactions; tracks performance, cash flow, **tax compliance**, accurate reports.

Functions: General Ledger · AP & AR · Budgeting & Forecasting · Tax Management · Financial Reporting

e.g. Manufacturer auto-generates income statements & balance sheets → real-time financial health.

2 Human Resource Management (HRM)

Employee data, payroll, recruitment, performance evaluations, benefits & leave.

Functions: Employee Records · Payroll Processing · Recruitment & Onboarding · Performance Evaluation · Benefits & Leave

e.g. Multinational runs payroll across countries per local laws; tracks attendance & reviews.

3 Supply Chain Management (SCM)

Entire supply chain — procurement, inventory, shipping, distribution; timely delivery.

Functions: Procurement · Inventory Management · Shipping & Logistics · Vendor Management

e.g. Retail chain gets low-stock alerts → **just-in-time** inventory, lower holding costs.

4 Customer Relationship Management (CRM)

Customer interactions, sales pipelines, service; insight into behaviour & buying patterns.

Functions: Sales Pipeline · Customer Interaction History · Customer Support · Marketing Campaigns

e.g. Sales team gets a **360-degree view** of each customer → personalised interactions.

5 Manufacturing & Production Planning

Scheduling, capacity, quality, machine maintenance → minimal downtime.

Functions: Production Scheduling · Capacity Planning · Quality Control · Maintenance Management

e.g. Car maker schedules production, tracks vehicle quality, preventive maintenance.

6 Inventory & Warehouse Management

Stock levels & movements; right balance — no over/under-stocking.

Functions: Inventory Tracking · Order Fulfilment · Warehouse Optimisation · Demand Forecasting

e.g. Wholesaler tracks stock in multiple warehouses → avoid stockouts & excess.

7 Procurement

Automates purchasing — supplier selection, POs, contracts; best price with quality.

Functions: Purchase Order Management · Supplier Management · Cost Control

e.g. Manufacturer monitors costs & supplier performance → better contracts.

8 Project Management

Plan, execute, track projects — resources, budgets, timelines, deliverables.

Functions: Project Planning · Budgeting · Resource Allocation · Project Tracking

e.g. Construction firm tracks tasks & budgets on large building projects.

WATCH OUT **Procurement** appears both as a **function inside SCM** and as a **separate module**. SCM's **Vendor Management** ≈ Procurement's **Supplier Management**.

2 ERP IMPLEMENTATION CYCLE

structured · multi-phase · each builds on the previous

① Planning & Requirement Analysis
Lays the groundwork
- Identify requirements & goals
- **Gap analysis** (current vs future)
- Cross-functional **project team** & roles

② System Design
Tailor ERP to the organisation
- **Customise** workflows, reports
- Define data structures & workflows
- UI & **security settings** (access)

③ Data Migration
One of the **most critical** phases
- **Extract** from legacy
- **Cleanse & validate**
- **Load** into ERP modules

④ System Testing
Before go-live
- **Unit** — single module
- **Integration** — modules together
- **UAT** — key users, real-world

⑤ Training & Change Mgmt
Prepare people
- End-user training
- Manuals, FAQs
- Change mgmt → **reduce resistance**

⑥ Go-Live
Deploy in live environment
- Finalise configuration
- **Cutover** from legacy
- Monitor first weeks

⑦ Post-Implementation Support
Keep it working
- Ongoing support team
- Monitor performance
- **Updates**, patches, upgrades

Phase	Key question it answers	Exam keyword
Planning	What do we need, and what's missing today?	gap analysis, scope, project team
System Design	How should the ERP fit our processes?	customisation, workflows, access controls
Data Migration	How do we move legacy data correctly?	extract, cleanse, validate, load
Testing	Does it work — alone, together, for users?	unit, integration, UAT
Training & Change	Can and will people use it?	workshops, manuals, resistance
Go-Live	Switch over to the new system	cutover, monitoring
Post-Implementation	Keep it optimised and current	support, patches, upgrades

Additional Considerations for Successful Implementation

Stakeholder Buy-in
Engage key stakeholders **from the beginning** so everyone supports the initiative.

Communication
Regular updates between project team, users and management.

Phased Implementation
Roll out in phases (e.g., **pilot group**) → lower risk, controlled deployment.

Budget & Timeline
ERP projects **easily overrun** — realistic goals, monitor milestones.

3 BENEFITS OF ERP SYSTEMS

10 benefits

1 Enhanced Data Accuracy & Consistency
Unified central platform — **no multiple databases**; consistent, up-to-date data.
Retail: inventory, sales & customer data synchronised across stores.

2 Better Collaboration & Integration
Finance, procurement, HR, sales share the same data.
Production team auto-notified when raw materials are ordered.

3 Improved Decision-Making
Real-time insights, dashboards, **KPIs**, analytics.
Finance manager forecasts cash flow from sales, expenses, inventory.

4 Increased Efficiency & Productivity
Automates routine tasks → staff focus on strategic work.
HR automates payroll, time tracking, benefits.

5 Streamlined Business Processes
Standardised processes, automated workflows, fewer bottlenecks.
Distributor automates **order-to-cash** → faster revenue realisation.

6 Improved Compliance & Risk Management
Tracking, auditing, reporting; built-in controls reduce **fraud or errors**.
Financial institution generates **audit trails** for all transactions.

7 Scalability & Flexibility
Add users, modules, functions as you grow; **cloud ERP** even more flexible.
E-commerce firm adds CRM & warehouse modules.

8 Enhanced Customer Service
CRM integration → real-time customer data, order history, records.
Service team checks order status quickly → higher satisfaction.

9 Cost Savings
Significant **upfront investment** but **long-term savings** — less manual work, lower inventory costs.
Manufacturer orders materials only when needed → no overstocking.

10 Data Security & Integrity
RBAC, encryption, audit trails → only authorised access.
Healthcare provider protects patient data & meets privacy rules.

EXAM TIP "Audit trails" can point to **Compliance & Risk Management** (benefit 6) or **Data Security & Integrity** (benefit 10) — read the context: **regulations** → 6; **protecting data / access** → 10.

4 TYPES OF ERP SYSTEMS

deployment models

On-Premise ERP

own servers, own premises

Installed & operated on servers **within the organisation's premises**; **full control** of data, infrastructure, security. Chosen by **regulated industries** (healthcare, finance).

FEATURES
Complete data control · Customisable · **Higher upfront costs** · IT-resource intensive

ADVANTAGES
Data security · Customisation · **No reliance on internet**

DISADVANTAGES
High initial investment · Maintenance responsibility · **Limited scalability**

e.g. ABC Manufacturing — sensitive IP, complex workflows, full customisation.

Cloud ERP

vendor-hosted, over the internet

Hosted on **vendor's remote servers**; accessed via **web browsers**; vendor handles **updates, maintenance, data storage**.

FEATURES
Scalable · **Lower upfront costs** · Automatic updates · Accessible anywhere

ADVANTAGES
Cost-effective (**subscription**) · Flexible access · **Faster implementation**

DISADVANTAGES
Internet dependence · Data security concerns · **Less customisation**

e.g. XYZ Startup (e-commerce) — scales with growth, remote employees.

Hybrid ERP

best of both

Sensitive data on local servers; cloud for **less-critical functions** — security & control + scalability & accessibility.

FEATURES
Flexible deployment · **Gradual migration to cloud** · Optimised costs

ADVANTAGES
Customisation with flexibility · **Risk mitigation** · Cost-effective transition

DISADVANTAGES
Complexity in integration & sync · Increased management requirements

e.g. Global Health Solutions — patient data on-premise; scheduling, payroll, inventory in cloud.

Factor	On-Premise	Cloud	Hybrid
Who hosts	Organisation	ERP vendor	Both
Upfront cost	**High**	**Low (subscription)**	Balanced / optimised
Control & customisation	**Highest**	**Lower**	Selective
Scalability	**Limited (buy hardware)**	**High**	Flexible
Internet needed?	**No**	**Yes**	For cloud parts
Maintenance	In-house IT	Vendor (auto updates)	Both environments

5 KEY CONSIDERATIONS WHEN CHOOSING AN ERP

System Flexibility

Scalability (new regions, product lines) · **Customisation options** — but excessive customisation adds complexity; prefer built-in flexibility.

Integration Capabilities

Robust **APIs & pre-built connectors** · **Legacy system compatibility**.

e.g. Link ERP with existing warehouse & shipping software.

Total Cost of Ownership

Direct + indirect: **initial implementation** (licences, hardware, consultants) · **maintenance & upgrades** · **training & support**.

Vendor Support

Implementation assistance · **post-implementation** helpdesk · regular **upgrades & maintenance**.

6 CHALLENGES IN IMPLEMENTING ERP SYSTEMS

problem → solution

High Implementation Costs — Big investment, esp. with customisation & integration.	Prioritise critical functions; **phased approach**; **cloud ERP** cuts upfront hardware costs.
Resistance to Change — Reluctance, fear of disruption → delays, underuse.	**Change management**: communicate benefits, involve stakeholders early, comprehensive training.
Data Migration Issues — Discrepancies, incomplete records, inconsistent formats.	**Cleanse & validate before migration**; migration strategy with testing before go-live.
Need for Customisation — Excess → complexity, cost, longer timelines.	Use **standard functionality** where possible; customise only critical processes.
Integration Challenges — Legacy / custom systems may be incompatible.	Plan integration **early**; assess all systems; use **middleware or APIs**.

7 ERP IN FINANCIAL SERVICES & CORE BANKING SYSTEMS

ERP — streamlines **back-office** functions: corporate finance, procurement, compliance, HR → **financial control, compliance, strategic planning**.
e.g., SAP or Oracle ERP

vs

Core Banking System (CBS) — specialised platform for **front-line** day-to-day banking: **deposits, withdrawals, payments**, accounts, loan servicing, customer service.
e.g., Temenos or Finacle

INTEGRATION Banks increasingly **integrate ERP with CBS** → seamless flow of financial data, **centralised risk management**, improved enterprise-wide reporting.

EXAM FOCUS · MCQ TRAPS

commonly confused points

1 Core module
Financial management is at the core of any ERP.

2 Gap analysis
Belongs to **Planning & Requirement Analysis** (phase 1).

3 Testing types
Unit = one module · Integration = modules together · **UAT** = key users in real-world setting.

4 Cutover
Happens at **Go-Live** — moving operations from the legacy system.

5 No internet needed
An advantage of **on-premise**; cloud depends on connectivity.

6 Gradual migration to cloud
A feature of **Hybrid** ERP.

7 TCO
Includes **training & support** and maintenance — not just licences.

8 Resistance to change
Solution = **change management** + training + early stakeholder involvement.

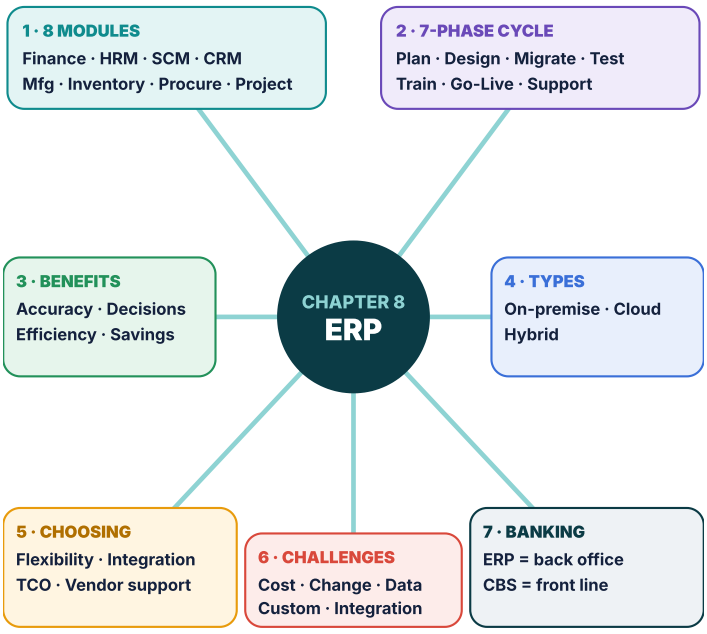
9 ERP vs CBS
ERP = **back office**. CBS (Temenos, Finacle) = **front-line banking**.

10 Cost savings caveat
ERP has a **significant upfront cost**; savings are **long-term**.

CLASSIFY IT

1	360° view of each customer	CRM
2	Just-in-time restocking alerts	SCM
3	Remove duplicates before loading	Data Migration
4	Key users test real scenarios	UAT
5	Subscription, browser access	Cloud ERP
6	Patient data local, payroll in cloud	Hybrid ERP
7	Pilot group rollout	Phased implementation
8	Finacle handles deposits	Core Banking

REVISION MAP



Integrate
One platform, shared real-time data.

Implement
7 phases, plan → support.

Benefit
Accuracy, decisions, efficiency, compliance.

Deploy
On-premise, cloud or hybrid.

Beware
Cost, resistance, migration, customisation.