

CISB — Certified Information System Banker

Complete Book | Table of Contents | 20 chapters + 6 sections

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CH-1

Banking Environment and Technology

Topic 1 — Why Banks Depend on Information Systems

- **Banking activity** — A bank moves money and maintains **claims, obligations and instructions**.
- **Information need** — Each activity depends on information: who owns an account, what balance is available, which transaction was authorised and whether settlement occurred.
- **Information system** — It combines **people, procedures, data and technology** to perform these tasks.
- **Computers** — Computers are **only one component** of the system.
- **Responsibility** — A fast application with unclear responsibility can still produce poor service.
- **Useful system** — It delivers **accurate, timely and secure** information to the people entitled to use it.
- **Wider impact** — Technology decisions affect customer service, financial reporting, risk and the bank's ability to continue operating.

Remember this

- Information system = **People + Procedures + Data + Technology**; computers are only one part.

Topic 2 — Evolution From Manual Records

Stages of evolution

- **1. Manual era** — Early banking relied heavily on **paper ledgers, vouchers and manual balancing**.
- **2. Mechanisation** — Mechanisation and branch computers improved calculation and local record keeping.
- **3. Branch automation** — It reduced some repetitive work, but information could remain separated by location.
- **4. Networks and central databases** — Customers and employees could access a broader relationship view.
- **5. Digital and connected services** — Later developments added internet banking, mobile applications, interfaces with payment systems and partner services.
- **Accounting stays** — This evolution did not eliminate the need for accounting or control.
- **Controls move** — It changed **where controls operate**.
- **Rising importance** — Reliable software, access management and reconciliation across connected systems became more important.

Topic 3 — Standalone Systems and Their Limits

- **Meaning** — A standalone branch system processes and stores information **locally**, with limited or delayed connection to other locations.
- **Narrow use** — It may work well for a narrow task.
- **Consolidation** — The bank can struggle to consolidate balances and detect duplicate records.

- **Service reach** — Service away from the home branch becomes difficult.
- **Transfers** — Periodic transfers between systems introduce delay and reconciliation work.

Common assumption	Correct view
Standalone means insecure	A standalone system is not automatically insecure .
Networked means accurate	A networked system is not automatically accurate .
How to judge	Compare the actual architecture, operating procedures and risks .

Remember this

- Key distinction: **how information is shared** and how the bank keeps **one dependable view** of its obligations.

Topic 4 — Core Banking Explained

- **Meaning** — A core banking system (**CBS**) supports central banking functions through connected access points.
- **Functions** — These include customer records, deposits, loans, interest calculation and account posting.
- **Shared ledger** — Branches operate on **shared information** rather than independent ledgers.

Aspect	Effect of centralisation
Benefit	Improves consistency and service across locations.
Dependence	Concentrates dependence on the central service and its connections .
Safeguards needed	Strong availability, capacity, access control and recovery arrangements.

- **Not everything** — CBS does not necessarily contain every banking application.
- **Connected systems** — Cards, treasury, payment gateways and customer-management systems may connect through **controlled interfaces**.
- **Reconciliation** — These systems require reconciliation with the core records.

Remember this

- CBS = shared core records; a central failure can affect many services, so resilience is essential.

Topic 5 — Real-Time Processing and the Customer View

Processing type	How it works
Real-time	Updates or responds as events occur within the system's designed operation.
Batch	Groups work for execution together at scheduled or triggered intervals.

- **Both used** — A withdrawal can be authorised immediately while some accounting or reporting tasks run later.
- **Accurate message** — The customer-facing message must reflect the actual state.
- **Two balances** — Available balance may differ from ledger balance because of **holds, uncleared items or pending instructions**.

- **Staff duty** — Employees should understand the difference before explaining a failed payment.
- **Screen response** — A screen response alone does not establish that all downstream systems have completed their part.

Remember this

- Available balance ≠ ledger balance (holds, uncleared items, pending instructions).

Topic 6 — Preparing for CBS

Implementation

Implementation steps

- **1. Assess** — Begin with business requirements and an assessment of current processes, data and interfaces.
- **2. Define scope** — Define what the bank needs to achieve, which products and locations are covered and what controls must remain effective.
- **3. Govern** — Establish governance, ownership, budget and decision authority.
- **4. Compare solutions** — Judge them on functional needs, resilience, security, integration and long-term support, **not only purchase price**.
- **5. Plan people changes** — Identify changes to operating procedures and staff roles.
- **6. Record decisions** — Record assumptions and obtain approval for material choices.
- **Workflows** — A system that technically supports a product may still require different workflows.
- **Disputes** — Recorded approvals let later disputes be resolved against an **agreed design**.

Topic 7 — Data Migration and Testing

- **Meaning** — Migration moves information from old systems to the new environment.

Migration and testing steps

- **1. Prepare data** — Map fields, clean duplicates, check account identifiers and preserve necessary history.
- **2. Reconcile** — Reconcile record counts and financial totals.
- **3. Check records** — Also test important individual records.
- **4. Test widely** — Test normal transactions, exceptions, security, interfaces, load and recovery.
- **5. User validation** — Business users should validate whether the system supports real banking requirements.
- **6. Rehearse** — Rehearse conversion with realistic data under appropriate protection.
- **7. Document** — Document unresolved defects and acceptance criteria.
- **Launch pressure** — Pressure to meet a launch date should not conceal a material risk.

Remember this

- Matching total balances does **not** prove every customer's balance is correct.

Topic 8 — Cutover, Training and

Stabilisation

- **Cutover** — It is the controlled move into live operation.
- **Cutover plan** — It identifies timing, responsibilities, final migration, checks, communications and conditions for **stopping or reversing** the move.

- **Training** — Staff training should include **errors and exceptions**, not just ideal transactions.
- **Stabilisation support** — Provide help during stabilisation and closely monitor incidents, balances and service queues.
- **Login is not proof** — A successful login is not evidence of a successful conversion.
- **Confirm operation** — Confirm that products, postings, interfaces and reports operate correctly.
- **Evidence** — Retain evidence needed to investigate differences.
- **Old data** — Apply access and retention controls to old data and temporary migration files.

Remember this

- Cutover plan must include responsibilities, checks and stop/rollback conditions.

Topic 9 — Delivery Channels and

Connected Banking

- **Channels** — Branches, ATMs, internet banking, mobile banking, call centres and authorised correspondents are different routes into banking services.
- **Own components** — Channels may share CBS information but have their own applications, networks and authentication steps.
- **Availability** — A mobile application being available does not prove that the core service or payment switch is healthy.
- **Traceability** — Map dependencies and preserve transaction references across systems.
- **Consistency** — Consistent product terms and status messages help customers move between channels.
- **Channel failure** — Staff need a safe alternative and a clear incident route.
- **Credentials** — Convenience should not require customers to reveal credentials to an employee.

Topic 10 — Benefits, Concentration and

Governance

Shared systems	Effect
Benefits	Faster service, consolidated information and standard processes.
Concentration risk	An incorrect configuration or malicious change can spread across many locations quickly.

- **Role-based access** — Central access should be limited by role.
- **Sensitive changes** — They should require appropriate approval and testing.
- **Monitoring** — Monitor performance, incidents and reconciliation exceptions.
- **Board reporting** — The board and management need understandable reporting on material technology risks, **not only uptime percentages**.
- **Know priorities** — A bank should know which services matter most, which dependencies could interrupt them and how it will recover.
- **Value** — Technology creates value when the organisation can operate and control it responsibly.

Topic 11 — CBS Implementation Gates and Evidence

- **Approach** — Divide implementation into **decision gates**.

Gates in order

Gate	What it agrees or checks
1. Requirements	Agrees the products, users, reports, interfaces and service targets.
2. Selection	Compares functional fit, support, migration complexity, security and total lifecycle cost.
3. Configuration	Checks product parameters, account mapping and authority levels.
4. Testing	Requires business, security, performance and recovery evidence.
5. Cutover	Confirms reconciled balances, trained users, support readiness and a workable fallback.

- **Gate ownership** — A gate should have an **accountable approver** and **recorded conditions**.
- **Criteria, not meetings** — Completing a meeting is not the same as satisfying its criteria.

Example: A bank introduces centralised loan processing. A demonstration shows that an instalment can be calculated, yet omits a part-payment, a changed rate and a reversed debit.

- **Separate cases** — Part-payment, changed rate and reversed debit are **separate acceptance cases**.
- **Requirement-to-test matrix** — A signed matrix shows which result proves each important requirement.
- **After launch** — Compare actual exceptions with the assumptions used at acceptance.
- **Outcome** — This turns implementation steps into a **controlled banking project** rather than a list of software-installation activities.

Remember this

- Each gate needs an **accountable approver** and **recorded conditions**; a meeting held is not a gate passed.

Topic 12 — Following a Channel Transaction Into the Core

ATM withdrawal: stage by stage

- 1. **Capture** — The channel captures the request.
- 2. **Authenticate** — It verifies required authentication through the authorised arrangement.
- 3. **Decide** — It obtains a decision from relevant account-processing services; the account service must consider **available funds and applicable restrictions**.
- 4. **Deliver** — The device attempts cash delivery and produces the relevant status information.
- **Approval is not proof** — An approval does not itself prove that cash was dispensed.
- **Uncertain outcome** — Device records, channel messages and account entries must be **reconciled**.
- **Standalone arrangement** — A branch may lack an immediate dependable view of activity elsewhere.
- **Connected CBS** — It can improve that view, but the channel still has its **own failure points**.
- **Design together** — Delivery-channel design, central records and exception handling must be considered together.

- **Ownership** — The bank should know which record establishes each stage and who resolves a disagreement between them.

Remember this

- An ATM **approval does not prove cash was dispensed**; reconcile device records, channel messages and account entries.

Topic 13 — Resolved Case: Balanced Totals, Wrong Customers

Example: During a migration rehearsal, total deposit balances match the old system and the project team initially proposes acceptance.

- **Finding** — A sample check finds that two customers' balances were exchanged because a mapping key was incomplete.
- **Action** — The team stops acceptance, corrects the mapping and repeats both aggregate and record-level reconciliation.
- **Wider check** — It also checks other records sharing the same pattern.
- **Lesson** — Matching totals are **necessary but insufficient**.
- **Hidden error** — A conversion can preserve the overall balance while assigning money or instructions to the wrong person.

Remember this

- Testing must cover both **accounting** accuracy and **customer-level** accuracy.

Topic 14 — Resolved Case: A Channel Blamed Too Quickly

Example: Customers report that mobile transfers fail while the app opens normally, and staff initially advise reinstalling the app.

- **Root cause** — Incident analysis shows the payment interface between the channel and the core service is unavailable.
- **Response** — The bank gives an accurate service notice and identifies uncertain transactions.
- **Restoration** — It restores the interface under controlled procedures.
- **Reconciliation** — It reconciles requests before advising any repeat payment.
- **Lesson** — Investigate the **complete service chain**; the visible screen is only one part of delivery.
- **Local fix limits** — A remedy on the customer's phone cannot repair a central integration failure.

CISB | Module A | CH-1 | MCQs

Q1. What does an information system include? [Ref: Topic 1, p. 2]

- Only computers
- Only the network
- Only software licences
- People, processes, data and technology

Q2. What commonly limits standalone branch systems? [Ref: Topic 3, p. 2]

- Delayed or fragmented information across locations
- Automatic nationwide consistency
- Absence of all local processing
- Excessive central visibility in every case



Q3. What is a major CBS benefit? [Ref: Topic 4, p. 2]

- (a) Guaranteed zero downtime
- (b) Removal of every control
- (c) Shared access to core banking records
- (d) Elimination of accounting

Q4. Why does centralisation require strong resilience? [Ref: Topic 4, p. 2]

- (a) It makes backup unnecessary
- (b) It removes network dependence
- (c) A central failure can affect many services
- (d) It prevents all failures

Q5. What is batch processing? [Ref: Topic 5, p. 2]

- (a) Processing grouped work together
- (b) Processing each event only by hand
- (c) A customer segment
- (d) A type of password

Q6. Why are matching migration totals insufficient? [Ref: Topic 7, p. 3]

- (a) They prove every mandate
- (b) Totals have no value
- (c) Individual records may still be wrong
- (d) They replace testing

Q7. What should user acceptance testing establish? [Ref: Topic 7, p. 3]

- (a) Only that screens are colourful
- (b) That every future change is approved
- (c) That business requirements are met
- (d) Only that software installs

Q8. A cutover plan should include: [Ref: Topic 8, p. 3]

- (a) Responsibilities, checks and fallback conditions
- (b) Only a launch speech
- (c) Only the purchase order
- (d) Only staff attendance

Q9. An app opens but payments fail. What follows? [Ref: Topic 14, p. 4]

- (a) Reinstallation is always sufficient
- (b) Downstream dependencies need investigation
- (c) The customer must be at fault
- (d) The core is certainly healthy

Q10. What should migration training include? [Ref: Topic 8, p. 3]

- (a) Only the welcome screen
- (b) Exceptions and error handling
- (c) Only sales targets
- (d) Unrecorded workarounds

Answer key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	d	3	c	5	a	7	c	9	b
2	a	4	c	6	c	8	a	10	b



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CH-2

Overview of Processing Infrastructure

Topic 1 — From Instruction to Completed Payment

Stages of a payment journey

Initiation → Authentication → Validation → Routing → Clearing → Settlement → Confirmation

Stage	What it does
Clearing	Establishes or exchanges payment obligations .
Settlement	Discharges the obligations through the relevant transfer of funds.

- **Variation** — Not every system performs these steps in the same way.
- **Different events** — A customer debit, an accepted message and final interbank settlement are **different events**.
- **Status meaning** — Staff should know which event a status describes.
- **Infrastructure** — Processing infrastructure includes applications, networks, switches, databases, security services and operational teams.
- **Traceability** — Good design preserves **references and timestamps** so an instruction can be traced without relying on memory or screenshots alone.

Remember this

- **Clearing** establishes/exchanges obligations; **settlement** discharges them through transfer of funds.

Topic 2 — IT Operations and Daily Discipline

- **Scope** — Operations keep systems running through scheduled jobs, monitoring, incident handling, backups, capacity management and controlled changes.
- **Runbook** — A runbook records repeatable steps and escalation paths.
- **What to monitor** — Monitor job completion and **business totals**, not merely whether a server is powered on.
- **Hidden failure** — A batch can finish technically while rejecting many records.
- **Separation** — Separate operational duties from unauthorised alteration of programmes or financial data.
- **Investigation support** — Maintain time synchronisation and protected logs.
- **Repeat runs** — When an operation is repeated after failure, check that the design prevents duplicate processing.
- **Recovery** — Recovery must establish the real state before work resumes.