Chief Technology Officer Course: Technology Strategy, Architecture, Delivery and Risk

12 – 23 July 2027
Istanbul

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Programme Summary

Chief technology officer practice is the subject of this two-week training course for chief technology officers, heads of engineering and technology directors, ending in a technology leadership plan for one organisation. Technology leaders are asked to set direction, choose platforms, deliver, secure and fund at the same time, often without a shared method for trade-offs. The programme moves from role and strategy to architecture, vendors, delivery, talent, risk, budget and board advice, applying each step to the participant's own organisation. Mars Training Centre UK delivers this programme on the chief technology officer role to mixed-organisation cohorts.

The Business Case

Technology spending, delivery speed and security exposure all rest on choices made by the technology function, yet these choices are often taken project by project. A defined method for roadmap, architecture, sourcing and risk gives the chief executive and the board a consistent account of what is being built, bought and protected, and why.

- Delivery Predictability: Rises as roadmap choices are tied to capacity and flow measures.
- Technology Risk Exposure: Falls as security and resilience risks are rated and reported in one register.
- Spend Visibility: Rises as the technology budget is linked to services and business outcomes.

Principles and Evidence Base

- Layered architecture view: Separating business, data, application and infrastructure layers shapes the platform work in Session 3.
- Build-or-buy decision analysis: Weighing cost, control, speed and lock-in structures the sourcing work in Session 4.
- Likelihood and impact risk rating: Scoring exposure on two scales supports the register built in Session 7.
- Flow-based delivery measures: Lead time and change failure rate frame the delivery review in Session 5.

Intended Participants

- Technology executives who set direction and own the technology roadmap.
- Heads of engineering who run delivery teams and engineering standards.
- Technology directors who sponsor platform, data or infrastructure programmes.
- Architecture leads who advise on platform and integration choices.
- Senior managers who prepare for a chief technology officer role.

Typical sectors include banking, energy, telecoms and government entities.

Learning Outcomes

1. Participants will be able to construct a technology roadmap that links initiatives to business priorities and capacity.
2. Participants will be able to evaluate platform and architecture options against stated criteria and constraints.
3. Participants will be able to justify build, buy or partner decisions with cost, control and lock-in evidence.
4. Participants will be able to diagnose weak points in engineering delivery from flow measures and team structure.
5. Participants will be able to prioritise security and technology risks and design the controls that reduce them.
6. Participants will be able to design a board report that explains technology spend, progress and risk in plain terms.

Programme Structure

Day 1: Chief Technology Officer Role and Mandate

What does the chief technology officer own, and where does the role meet other executives?

- Role Mandate Statement
- Executive Decision Rights Matrix
- Technology Function Map
- Stakeholder Expectation Grid
- First Ninety Days Plan

Day 2: Technology Strategy and Roadmap

How do business priorities become a sequenced technology roadmap?

- Business Capability Map
- Technology Trend Radar
- Initiative Scoring Sheet
- Roadmap Sequencing Board
- Capacity Reality Check

Day 3: Architecture and Platform Choices

How are platforms chosen and kept coherent as needs change?

- Layered Architecture Map
- Platform Option Matrix
- Integration Pattern Catalogue
- Technical Debt Register
- Architecture Decision Record

Day 4: Build, Buy and Vendor Decisions

When should a capability be built, bought or shared with a partner?

- Build-or-Buy Scorecard
- Vendor Lock-In Assessment
- Total Cost of Ownership Model
- Exit and Portability Plan
- Vendor Performance Review Sheet

Day 5: Engineering Delivery

How is delivery made predictable without slowing teams down?

- Lead Time Measure
- Change Failure Rate Review
- Release Pipeline Map
- Incident Review Template
- Delivery Governance Cadence

Day 6: Engineering Talent and Organisation

How are teams structured, grown and kept?

- Team Topology Sketch
- Engineering Career Ladder
- Skills Gap Matrix
- Hiring and Retention Plan
- Engineering Culture Charter

Day 7: Security and Technology Risk

Which technology risks matter most, and which controls address them?

- Technology Risk Register
- Likelihood and Impact Rating
- Security Control Map
- Resilience and Recovery Test
- Risk Appetite Statement

Day 8: Technology Budget and Value

How is technology spend planned, explained and linked to outcomes?

- Technology Budget Model
- Run and Change Split
- Service Cost Allocation
- Business Case Template
- Value Tracking Dashboard

Day 9: Board Reporting and Technology Advice

What does the board need to hear from the technology leader?

- Board Technology Report Format
- Technology Risk Briefing
- Investment Paper Outline
- Executive Question Preparation
- Decision Memo Template

Day 10: Applying the Tools to One Technology Function

Do the strategy, sourcing, delivery and risk tools produce one working plan?

- Applying the Session 2 Initiative Scoring Sheet
- Using the Session 4 Build-or-Buy Scorecard
- Running the Session 7 Technology Risk Register
- Checking the Session 9 Board Technology Report Format
- Completing the Technology Leadership Plan

Methodology

The programme uses a structured exercise method built on anonymised roadmaps, architecture records, vendor files, incident reviews and board packs from banking, energy and public settings. Participants work in small teams on a shared case, challenge each other's choices and receive written facilitator feedback on every exercise set across the ten sessions.

- Suggested activity: Scoring six initiatives and fitting the result to a fixed delivery capacity.
- Suggested activity: Comparing build and buy options for one capability using the scorecard.

- Suggested activity: Rewriting a technical incident summary as a one-page board briefing.

Capstone Output

Each participant completes a technology leadership plan for one organisation. It holds a role mandate, a scored roadmap, a sourcing decision, a delivery measure set, a technology risk register and a board report format. The plan is used at work to agree priorities with the executive team and to structure the first technology review with the board.

Frequently Asked Questions

Is the chief technology officer course suitable for engineering leaders new to the role?

Yes. The chief technology officer course assumes working knowledge of technology delivery and builds the executive side of the role, from strategy to board reporting, step by step.

Which models does the chief technology officer course rest on?

The chief technology officer course rests on a layered architecture view, build-or-buy decision analysis, likelihood and impact risk rating and flow-based delivery measures.

How is the plan from the chief technology officer course used at work?

You use the leadership plan to agree priorities with the executive team, guide sourcing decisions and structure the first technology review with the board.

How does the chief technology officer course differ from a chief information officer course?

The chief technology officer course centres on technology strategy, architecture and engineering delivery, while a chief information officer course centres on information systems, services and data for the business.