

Team of Teams & the Training of Staffs and Operational Planners

What IT portfolio and solution levels can learn from the military

Version 4.2 · As of 2026-08-18 · Audience: decision-makers without detailed knowledge of the subject – no military or agile background required · Companion document to the situational-awareness reading list

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Transparency notice: This memorandum was produced with the support of an AI system (Claude, Anthropic – model Claude Fable 5, via Claude Code): drafting, research preparation, typesetting and chart code. All content was substantively reviewed, edited and approved by Robert Seebauer, who holds editorial responsibility.

Executive Summary

What is this about? For more than 200 years, military organizations have systematically trained **staffs** (teams that prepare leadership decisions) and **operational planners** (specialists in planning complex undertakings across many units). Corporations steering IT portfolios across many teams, departments and suppliers face the structurally identical problem: **many semi-autonomous units must be aligned on a common goal – under uncertainty, with incomplete information and a constantly changing situation.**

THE SINGLE MOST IMPORTANT SENTENCE IN THIS DOCUMENT

It is not the reporting tool that creates the operating picture, but the **ritual** and the **trained people** around it – the tool ([our software](#)) merely makes the ritual cheaper, faster and more honest.

1

From “Team of Teams”

Scaling succeeds not through more control but through a **shared operating picture** (“shared consciousness”) plus **decentralized decision authority** (“empowered execution”). Both together – either one alone is ineffective or even dangerous. The key instrument: a daily, radically open situation briefing – the exact counterpart of our Situation Report.

2

From staff training

Militaries train planners primarily not in **tools** but in **methods of thinking**: structured decision processes, red teaming against one’s own assumptions, a common language and doctrine. The training is long (1–2 years full-time for top planners), exercise-based and selective.

3

For our portfolio

The transferable building blocks are concrete: a shared situation-picture ritual, a standardized planning process for large undertakings, liaison roles, After Action Reviews as a learning routine – and an internal training curriculum for “portfolio planners” (Part D: a concrete 12-month proposal).

Part A – The Source: “Team of Teams” (McChrystal, 2015)

A.1 The book and its starting problem

Stanley McChrystal, Tatum Collins, David Silverman, Chris Fussell – *Team of Teams: New Rules of Engagement for a Complex World* (Portfolio/Penguin, 2015; German edition by Vahlen). General (ret.) McChrystal led the Joint Special Operations Command (JSOC) in Iraq 2003–2008 – a network of elite units, intelligence services and partner agencies.

JSOC was the best-trained, best-equipped and best-funded military organization in the world – and was still losing against a poorly equipped but networked, fast-learning adversary network. McChrystal’s diagnosis: the problem was not competence but **organizational architecture** – an efficient but slow hierarchy of excellent individual teams that did not know each other, did not share information, and waited for approvals from above. His famous shorthand: *“It takes a network to defeat a network.”*

This diagnosis translates almost verbatim to corporate IT: excellent individual teams (development, operations, security, business units) optimizing within silos, while the overall undertaking – the *large solution* – appears slow and uncoordinated.

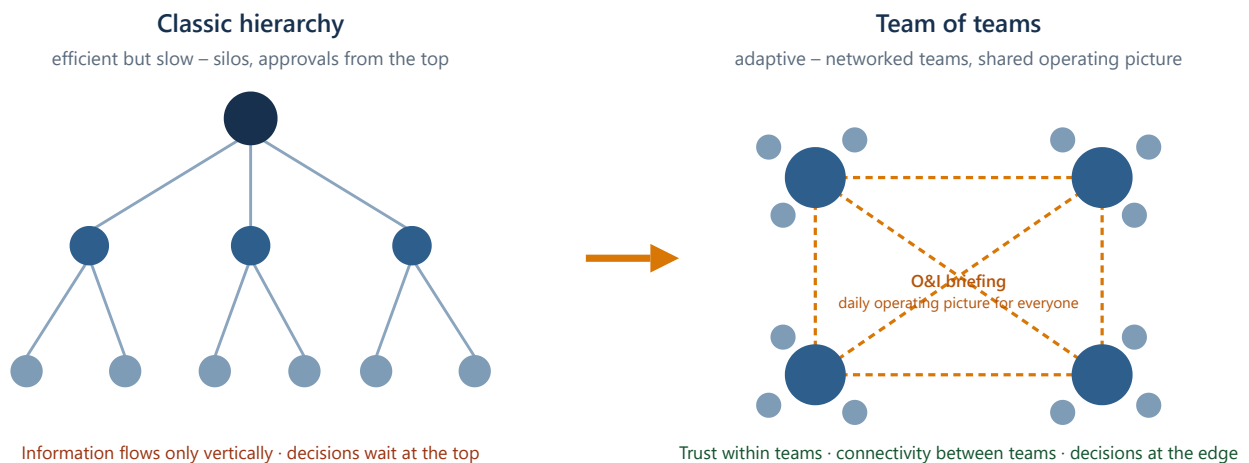


Fig. 1 – From command hierarchy to the networked “team of teams”: existing teams remain, but are connected through rituals (O&I) and liaison roles.

A.2 The four core concepts

1 Complicated is not complex

Complicated systems (a clockwork, an assembly line) have many parts but are predictable – classic management works here: plan, optimize, control. Complex systems (weather, markets, software portfolios with dozens of teams) have *interacting* parts – small causes produce large, unpredictable effects. The consequence: in complex environments, **adaptability beats efficiency** and **resilience beats prediction**. Anyone who steers a complex portfolio like a complicated project (detailed plan, milestone control) produces an illusion of certainty.

2 Shared consciousness – the shared operating picture

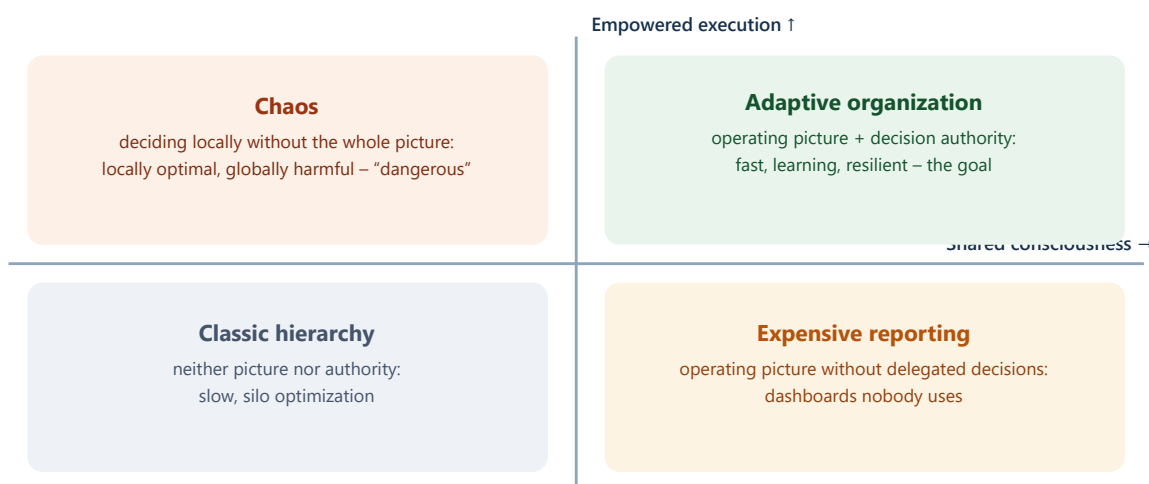
Everyone in the organization must understand the *whole picture*, not just their own slice. JSOC's central instrument: the daily **O&I briefing** (Operations & Intelligence) – a video-broadcast situation briefing, ~90 minutes, at times with **several thousand participants** across all levels and partner agencies. What mattered: **radical transparency instead of need-to-know** (information is shared by default), **leadership demonstrating the culture** (McChrystal moderated himself, asked open questions, thanked people for bad news), and **rhythm beats perfection** (daily and current matters more than complete and polished).

3 Empowered execution – decentralized decisions

Decisions are moved to where the best information sits – down and forward. The leadership principle: **“eyes on – hands off”**: leadership sees everything (through the shared picture) but does not intervene in every decision. The book's most important warning: **empowerment without a shared operating picture is dangerous** – people who are supposed to decide locally without knowing the whole picture produce locally optimal, globally harmful decisions. Conversely, an operating picture without decision authority is just expensive reporting.

4 Connection architecture instead of reorganization

JSOC was *not* merged into one giant team (trust and shared purpose only work in small groups). Instead, existing teams were deliberately networked: **liaison officers** – deliberately the *best* people (not the most expendable!) were sent to partner units for six months; an **embedding program** had team members work in other teams for weeks at a time; top leadership shifted from **chess master to gardener**, tending the ecosystem: rituals, information flows, culture.



The McChrystal coupling: only the top-right quadrant works – both together or not at all.

Fig. 2 – Why one element alone is not enough: shared picture and decentralized decisions depend on each other.

A.3 Direct relevance for our solution/portfolio feature

Team-of-Teams concept	Counterpart in our context
O&I briefing	Aggregated Situation Report + a regular portfolio/solution sync across all ARTs/teams
Shared consciousness	One consolidated operating picture instead of many silo reports; drill-down accessible to everyone
Empowered execution	Guardrails + decentralized prioritization instead of central case-by-case approvals
Liaison officers	Named interface roles between ARTs/value streams (not just tickets!)
Eyes on – hands off	Leadership reads the picture, escalates only on guardrail violations
Complicated ≠ complex	Monte Carlo forecasts (our Simulate module) instead of single-point predictions

Part A2 – Four Additional Core Sources (new in v2.0)

The following five works each deepen one aspect of the Team-of-Teams findings: **Clausewitz** provides the theory of why plans grind against reality; **Marquet** the concrete operating system for decentralized leadership; **Pink** the motivational-psychology explanation of why it works; **Hubbard** the measurement craft for an honest operating picture; **Duke** (new in v4.0) the hygiene of judgment with which decisions and outcomes are assessed separately.

A2.1 Carl von Clausewitz – *On War* (posthumous, 1832)

THE foundational work on deciding and acting under uncertainty – required reading in practically every general-staff education to this day, and (via Moltke) the intellectual root of mission command. The load-bearing concepts and their transfer:

- **Primacy of policy:** war is the continuation of policy by other means → the portfolio is the continuation of corporate strategy; every initiative must be able to name its strategic purpose.
- **Friction:** countless small, individually trivial resistances add up; the plan grinds against reality → the gap between roadmap and reality is a property of the system, not a management failure; the answer is buffers, short feedback cycles and adaptability – not "better" detailed plans.
- **Fog of uncertainty:** much decision-relevant information is uncertain or missing → no operating picture is complete; declare confidence and data quality instead of false precision.
- **Purpose – goal – means:** a clean hierarchy of why/what/with what → the intent cascade from strategy to team mission; OKRs are a modern form of it.
- **Center of gravity (Schwerpunkt):** concentrate forces at the decisive point → real prioritization and WIP limits; a portfolio doing "everything at once" has no Schwerpunkt.
- **Culminating point:** every offensive loses force as it extends → initiatives and scale-ups overextend (teams, integration effort, quality); early indicators of this belong in the operating picture.
- **Moral factors:** will, morale and trust are real factors of strength → team health/DevEx are steering variables of equal rank with flow metrics.

A2.2 L. David Marquet – *Turn the Ship Around!* (2012)

Marquet took command of the USS Santa Fe – then the worst-rated submarine in the US Pacific Fleet – and made it the best-rated within a year by inverting the leadership model: **leader-leader instead of leader-follower**. Core idea: do not move information to authority; **move authority to the information**. Three levers:

- **Give control:** shift decision authority downward step by step; the most visible ritual is the language ladder – subordinates say "**I intend to ...**" instead of "What should I do?" → teams report intentions in the portfolio sync instead of filing approval requests; the board intervenes only on guardrail conflicts.
- **Build competence:** delegation without competence is negligent; continuous technical training and deliberate action → exactly the gap our curriculum (Part D.2) closes.
- **Create clarity:** everyone must know the organization's purpose and priorities, or decentralized decisions diverge → commander's intent, strategic themes, a shared operating picture.

The operational practice book for mission command in a civilian context – the most concrete guide to actually introducing "empowered execution".

A2.3 Daniel H. Pink – *Drive* (2009)

Pink synthesizes decades of motivation research (Deci/Ryan et al.): the classic incentive model of reward and sanction ("Motivation 2.0") works for algorithmic routine work – for heuristic knowledge work, if-then rewards demonstrably narrow focus, crowd out intrinsic motivation and worsen performance. What works is "Motivation 3.0": **autonomy** (self-direction over task, time, technique, team), **mastery** (getting better at something that matters) and **purpose** (contributing to something larger than oneself).

Transfer: the motivational-psychology **explanation** of why mission command, empowered execution and leader-leader work – and a warning for the metrics system: tie velocity or metric targets to bonuses and you harvest Goodhart effects instead of performance. Autonomy ↔ decentralized decisions, mastery ↔ planner training, purpose ↔ intent.

A2.4 Douglas W. Hubbard – *How to Measure Anything* (2007/2014)

Core thesis: **anything that influences a decision is measurable** – measurement does not mean perfection but **reduction of uncertainty**. Tools:

- **Calibrated estimators**: with a few hours of training, experts learn to state 90% confidence intervals that are actually right 90% of the time – estimating becomes a testable skill.
- **Fermi decomposition**: break large unknowns into estimable parts.
- **Rule of Five**: just 5 random samples give a >93% probability interval around a population median – small measurements beat no measurement.
- **Expected Value of Information (EVI)**: measure only what can change decisions – the sharpest antidote to KPI graveyards.
- **Applied Information Economics**: Hubbard's overall method – model the decision, estimate calibrated, compute the value of information, measure selectively, decide via Monte Carlo.

Transfer: the measurement foundation of our operating picture – confidence intervals instead of point forecasts (exactly the principle of the Simulate module), EVI as the selection criterion for report metrics, calibration training as a building block of curriculum module 3.

A2.5 Annie Duke – *Thinking in Bets* (2018) (new in v4.0)

The former world-class poker player with a cognitive-science background supplies the fifth building block: the **hygiene of judgment** under uncertainty – for what can still go wrong after operating picture, plan and forecast is the judging itself.

- **Life is poker, not chess:** real decisions are made on incomplete information and under the influence of luck; whoever grades them like chess moves (full transparency, no chance) draws the wrong lessons – Clausewitz's fog from the player's perspective.
- **Resulting:** the most widespread thinking trap – measuring decision quality by outcome quality. A good decision plus bad luck is punished as a mistake, a bad decision plus good luck is celebrated as a success; the organization learns randomness instead of skill.
- **"Wanna bet?":** anyone who would have to bet on a conviction automatically states probabilities instead of certainties – "being wrong" becomes an update of degrees of belief instead of a loss of face. The everyday form of Hubbard's calibration (A2.4).
- **Truthseeking groups:** decision quality needs groups with an explicit truthseeking charter – sharing information, organized skepticism, accountability, diversity of opinion. The staff as a truthseeking group is the social form of red teaming.
- **Mental time travel:** backcasting and premortem as well as **Ulysses contracts** – advance commitments that bind the future self before pressure and emotion decide.

Transfer: (1) the **anti-resulting rule** as the second culture rule of AAR practice (B.3, competency field 5, module 6). (2) **Forecast literacy** (competency field 1): A 15% scenario that materializes does not refute a P85 forecast. (3) The **betting ritual** as everyday calibration in module 3. (4) Decision points with a pre-agreed response are **Ulysses contracts** – the decision-point wake-up call of the AI memorandum (M4 there) is their technical implementation.

How it fits: Duke complements Hubbard – he makes estimating testable, she makes judging testable.

Part B – How Militaries Train Staffs and Operational Planners

B.1 What is a staff – and why does it matter?

A **staff** is the team that prepares the decision basis for a leader (commander): reconnoiter and condense the situation, develop options, think through consequences, formulate orders, monitor execution. The commander decides – the staff makes sure the commander decides *well-informed* and that the decision is communicated in an *executable* way.

The corporate analogy is immediate: a portfolio board, a PMO, a solution-management team **is** a staff. The difference: militaries treat staff work as a distinct, teachable **craft with multi-year training** – corporations often fill the same functions with subject-matter experts who have never received any methodical planner training, and then wonder about meeting chaos, slide battles and decision gridlock.

The historical core: the Prussian-German **General Staff** (from Scharnhorst, ~1810) was the first institution to systematically replace “brilliant improvisation” with **trained method** – with the War Academy as its school, a unified doctrine, and the principle of **Auftragstaktik** (internationally “mission command”): the leader specifies *goal and intent* (“what and why”); the level below decides the “how” itself. Mission command is the historical original of McChrystal’s “empowered execution” – and of goal steering via OKRs.

B.2 The most important training institutions

Bundeswehr Command and Staff College (Führungsakademie, Hamburg) – LGAN DE · 2 years

The German general/admiral staff course (LGAN) is Germany’s top-tier training: 2 years full-time, ~100 national and international participants per year; only roughly the best ~18% of an officer cohort get in. Content: leadership and ethics, operational planning at all levels, security policy, cooperation with ministries and allies. Essential: participants learn to **work in mixed staffs** – not merely to accumulate individual knowledge. (*Deepened in v2.0*) The LGAN is only the top of a **tiered system**: the **basic staff officer course (BLS)** qualifies *every* future staff officer in the staff craft; the two-week **refresher course (SFL)** follows two years later; the **LGAI** (12 months, nicknamed the “little UN”) has trained over 3,000 officers from more than 100 nations – international networking is an explicit training goal. *Lesson: broad training for everyone + elite training for a few + regular refreshers, not just a single elite program.*

United Kingdom – Defence Academy / JSCSC (Shrivenham): ACSC UK · ~46 weeks · new in v2.0

The Joint Services Command and Staff College consolidates staff training of all three services – deliberately **joint**. Its core product is the **Advanced Command and Staff Course (ACSC)**: ~46 weeks (42 weeks of training plus block leave), annually from September, for officers at the top of their cohort, with participants from **over 50 nations**. The declared aim is developing “effective intellect”: analytical decision-making **plus** communication skills, broadened by strategy, security studies and multi-domain planning; academic support traditionally comes from King’s College London, and many graduates earn a master’s degree. Beneath it sits a tiered pipeline (Intermediate Command and Staff Course for the broad base, Higher Command and Staff Course for future general officers). *Lesson: cross-functional mixed cohorts (train IT + business + finance together), academic partnership, a three-tier pipeline instead of a single course.*

Austria – National Defence Academy Vienna: General Staff Course AT · new in v2.0

Austria's general-staff training is remarkable for its **selection and probation design**: about a year before the course starts, preparatory courses lead to a **first examination** (tactics, military fundamentals, general knowledge – only ~20–25% pass) and a subsequent **main examination** at the academy (~50% pass rate) – **with no retake**. Then comes the multi-year course (in today's structure two years plus a **probation year in general staff service**; earlier cohorts ran three years). Content has been modernized around cyber security, information warfare and international cooperation; guest participants come from Switzerland, Germany and France, among others. *Lesson: hard, fair selection BEFORE the expensive training – and a real probation phase in the target role AFTER it, before the status is finally conferred.*

US Army Command and General Staff College (CGSC, Fort Leavenworth) US · ~10 months

The broad training for staff officers. Its centerpiece is the **MDMP** – the “Military Decision-Making Process”, a standardized 7-step planning process (B.3). More important than the specific process is the principle: **all staff officers of all units learn the same process and the same language** – any newly assembled staff is thereby immediately able to work.

School of Advanced Military Studies (SAMS, Fort Leavenworth) US · 11 months · elite

The elite school *after* CGSC: a graduate-level program that turns selected officers into professional **operational planners** (nicknamed “Jedi Knights”). Its educational goal reads like a job description for portfolio strategists: critical and creative thinkers who help senior leaders **understand the operational environment** and **visualize and describe solutions to complex problems**. The curriculum integrates military history, theory and doctrine with practice – roughly half the time is planning exercises. Graduates serve a mandatory tour as leads of **operational planning teams** – training is directly coupled to a role.

University of Foreign Military and Cultural Studies (“Red Team University”) US · 2004–2021

Trained **red teamers**: specialists who attack assumptions, force alternative perspectives and prevent groupthink. Core of the curriculum: applied critical thinking, cultural empathy, self-reflection, groupthink mitigation via anonymous feedback and structured facilitation formats. Underlying premise: **organizations court failure in predictable ways, gradually, along their own thought patterns and culture**. The freely available *Red Team Handbook / Applied Critical Thinking Handbook* documents ~50 techniques (premortem, “Four Ways of Seeing”, assumption checks, devil's advocate with a mandate) – the single most directly transferable source in this briefing. (Defunded in 2021 for budget reasons; the methodology lives on in civilian programs, see Part D.)

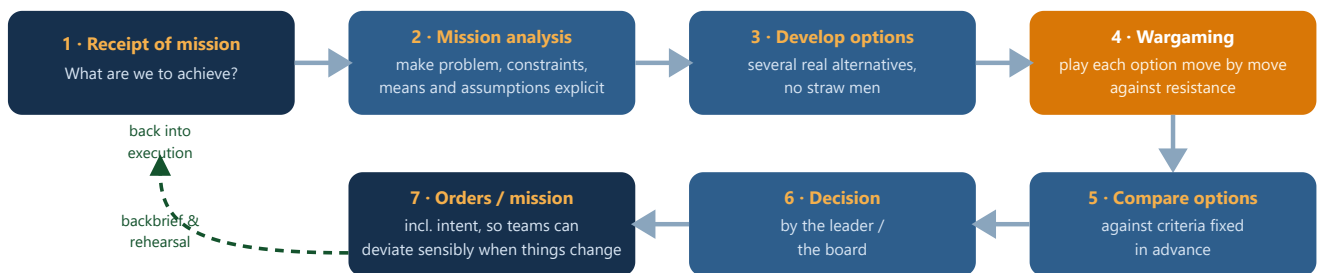
NATO – Comprehensive Operations Planning Directive (COPD) NATO

Standardizes operational planning across 30+ nations – proof that a common planning language works even across organizational *and* national borders, provided it is trained and exercised.

WHAT ALL SYSTEMS EXAMINED (DE, US, UK, AT) HAVE IN COMMON – NEW IN V2.0

(1) a **tiered pipeline** – broad training for all staff roles, elite training for a few; (2) **selection with consequences** – examinations that can actually be failed; (3) **mixed cohorts** – joint and international, because networking is itself a training goal; (4) **1–2 years of seriousness** instead of one-day seminars; (5) **role coupling** – training is mandatorily followed by a planner assignment, in Austria even a formal probation year. Each of these five elements transfers to a corporate curriculum (Part D.2).

B.3 What exactly do operational planners learn? The methods in plain language



The value lies not in the 7 steps themselves, but in everyone mastering the same process and the same language.

Fig. 3 – The Military Decision-Making Process (MDMP) as a reference model for structured portfolio planning.

1. The structured planning process (MDMP as reference model)

Seven steps (Fig. 3): receipt of mission → **mission analysis** (What actually is the problem? Mission, constraints, means, assumptions) → **develop options** (several real “courses of action”, not one preferred solution plus two straw men) → **play the options through** (wargaming; this produces synchronization matrices and decision points) → **compare options** (against explicit, pre-agreed criteria) → decision → **formulate the order** – including the commander’s intent, so that subordinates can deviate sensibly when the situation changes.

2. Wargaming / planning exercises

The central technique for both training *and* planning: a plan is played through against an actively thinking adversary/resistance (“action – reaction – counteraction”). Purpose: find weaknesses *before* reality finds them; identify decision points and early indicators: “How do we recognize early that plan A is tipping – and what do we do then?”

3. Red teaming / critical thinking

Institutionalized dissent with a mandate: make assumptions explicit and attack them one by one; the **premortem** (“It is 12 months later and the undertaking has failed – why?”); think the situation through from the other actors’ perspective; collect anonymous assessments *before* group discussions so the highest-ranking person does not shape the outcome.

4. After Action Review (AAR)

After every exercise and every operation, guided by four questions: **What was planned? What actually happened? Why the difference? What exactly do we change?** The culture is decisive: **rank-free** (the private may contradict the colonel), timely, documented – and the findings flow into a central clearing house (US Army: Center for Army Lessons Learned) so that the *organization* learns, not just the individuals involved. *Addition in v4.0 (Duke)*: the second culture rule is the **anti-resulting rule** – decision quality and outcome quality are assessed separately: A good outcome does not ennoble a bad decision, a bad one does not condemn a good one; otherwise the organization learns good and bad luck instead of skill.

5. Backbrief and rehearsal

After orders are issued, the executing level explains back *in its own words* how it understood mission and intent (backbrief) – misunderstandings surface immediately. Before execution, the sequence is walked through together (rehearsal / “ROC drill”).

6. Common language, doctrine, formats

Standardized terms, symbols, report formats and outlines – not out of love for bureaucracy, but so that under time pressure nobody has to think about *formats* and every report is instantly readable.

The didactics behind it: consistently **exercise-based** (planning exercises, command post exercises, simulation centers), **historically grounded** (case studies, “staff rides”), **selective** (only a fraction become planners), **role-coupled** (training is mandatorily followed by a planner assignment) and **career-relevant** (general staff training is a promotion prerequisite – the organization signals: planning is top-tier work, not a siding).

Part C – Transfer: What Must People in IT Portfolios Learn?

C.1 Role mapping – who is “the staff” in our world?

Military role	Corporate/portfolio counterpart
Commander	Portfolio owner / division executive / LPM board
Chief of staff	Head of PMO / head of portfolio management
Operational planner (G5/J5)	Portfolio/solution managers, solution train engineer, lead architects
Situation officer (G2/G3)	Owners of situation reports, metrics, forecasts
Liaison officer	Named interface role between ARTs / value streams / business-IT
Liaison officer to the superior staff (<i>new in v3.0</i>)	"Architect Elevator" (Hohpe): lead/solution architects as the vertical liaison between the board ("penthouse") and engineering ("engine room")
Red team	Independent challenger role on the portfolio board (can rotate)

C.2 The competence catalogue – what participants must learn

1 Creating and reading the operating picture (situational awareness)

Condense data into an honest picture; understand flow metrics, forecasts and confidence; know what a metric does *not* say; declare data quality instead of false precision; read probabilistic statements without “resulting” (Duke): A 15% scenario that materializes does not refute a P85 forecast.

Typical deficit: status reports as justification – “watermelon reports”: green outside, red inside.

2 Structured planning (an “MDMP for portfolios”)

For every large undertaking: clean problem analysis before solution debate; **at least two real options** with explicit comparison (cost, risk, time-to-market, reversibility); document assumptions; formulate intent so that teams can act sensibly on their own when the situation changes.

Typical deficit: business cases with exactly one option and no documented assumptions.

3 Stress-testing plans (wargaming & red teaming)

Premortems before major commitments; scenario runs (“supplier fails / key team quits / budget –20% – then what?”); define decision points and early indicators; be able to facilitate groupthink countermeasures.

Typical deficit: risks are listed (Excel graveyard) but never played through.

4 Leading decentrally (mission command)

Formulate goals and guardrails instead of dictating measures; demand backbriefs; make escalation criteria explicit (“eyes on – hands off”); tolerate teams proceeding differently than you would.

Typical deficit: steering committees deciding implementation details for which others hold the information.

5 Organized learning (AAR culture)

Facilitate AARs after every PI/quarter/undertaking; establish rank-free candor; **separate decision quality from outcome quality (avoid resulting, Duke)**; collect findings centrally and feed them back into standards.

Typical deficit: “lessons learned” slides nobody ever opens again – and reviews that assess only outcomes instead of decisions.

6 Communicating like a staff

Short, standardized situation formats (military “BLUF” – Bottom Line Up Front: key message first); storytelling with data; the ability to present situation + options + recommendation to a board in 5 minutes.

Typical deficit: 60-slide decks without a recommendation.

C.3 The five success factors – what matters most

1. **Both together or not at all:** operating picture without delegated decisions = expensive reporting. Delegation without an operating picture = chaos. The McChrystal coupling is the core (Fig. 2); introducing only one gets you neither.
2. **Rituals before tools:** the O&I briefing was video + discipline + demonstrated culture. Our software delivers the consolidated picture – but without a fixed, chief-moderated ritual (e.g. a fortnightly portfolio sync with mandatory attendance) it remains a dashboard nobody looks at.
3. **Send your best people:** fill liaison and planner roles with top performers and make it career-relevant. Militaries make planner training a promotion prerequisite; corporations often send whoever happens to be free – that signal is received, in both directions.
4. **Process standard beats process perfection:** the MDMP’s value lies not in its seven steps but in *everyone* having learned the same process and language. A decent, universally mastered portfolio planning standard beats a brilliant one only one department knows.
5. **Institutionalize dissent:** criticism must not depend on individual courage. Red-team techniques (premortem, anonymous pre-votes, a named devil’s advocate with a mandate) turn dissent into a *role* instead of a career risk.

C.4 Four civilian corroborating witnesses from architecture practice (new in v3.0)

The theses of this briefing come from the military – which makes it all the more significant that civilian software-architecture practice independently arrives at the same findings. Four thought leaders provide the corroborating evidence (full source profiles and the EA transfer: the EA memorandum, Part A2 – here only what carries for staff work, rituals and training).

C4.1 Luke Hohmann – Prioritisation as a serious game (civilian wargaming)

Hohmann (*Innovation Games*, 2006; *Beyond Software Architecture*, 2003; *Software Profit Streams*, 2023) developed structured decision **games** for the portfolio: in **"Buy a Feature"** stakeholders receive a limited play budget and buy features together – wish lists turn into real trade-off conversations because nobody can afford everything. **"Prune the Product Tree"** structures roadmap conversations; **participatory budgeting** scales the principle to portfolio budgets (many voices → one legitimised decision) and was adopted by SAFe into Lean Portfolio Management.

What it means for this briefing: this is the civilian, immediately purchasable form of the planning exercises from B.3 – rituals that combine **shared consciousness** (everyone sees the same trade-offs on the same board) and **empowered execution** (participants co-decide instead of merely receiving decisions) in one format. Directly usable in the portfolio sync, purchasable as a program (D.1), and as an exercise format in the curriculum (module 2).

C4.2 Gregor Hohpe – the elevator: liaison in the vertical

Hohpe (*The Software Architect Elevator*, 2020; architectelevator.com) describes architects as **elevator riders between the penthouse (board) and the engine room (engineering)**. This briefing knows liaison officers between units – the *horizontal* networking; Hohpe adds the **vertical**: without people who regularly enter both worlds and translate in both directions, strategy and delivery drift apart without anyone noticing – every level takes its own slice for the whole picture (McChrystal's silo diagnosis, turned vertical). His second guiding sentence: *"Architects live in the first derivative"* – what counts is the rate of change, not the state. (His catalogue *Enterprise Integration Patterns*, 2003, is at the same time the doctrine principle applied to integration technology: 65 named patterns as a shared professional language.)

What it means for this briefing: (1) the role mapping (C.1) needs the **vertical liaison** in addition to the horizontal one – and success factor 3 applies here too: staff it with the best, make it career-relevant. (2) For competency field 1: a situation report that shows only states omits the derivative – **trends, accelerations and tipping points** belong in the picture.

C4.3 Martin Fowler – the civilian proof of "process standard beats process perfection"

Fowler (*Patterns of Enterprise Application Architecture*, 2002; martinfowler.com) achieved with named design patterns (Domain Model, Data Mapper, Unit of Work ...) the same thing the MDMP achieved in the military: a **shared, taught vocabulary** makes arbitrarily assembled teams immediately effective – nobody has to negotiate a private language first. That is success factor 4, independently proven by twenty years of industry practice. Add the **design-stamina hypothesis** (*Refactoring*, 2nd ed. 2018): neglected internal quality measurably throttles speed – an honest situational picture therefore also needs the debt dimension (architecturally deepened in the EA memorandum, situational-picture principle 2).

What it means for this briefing: whoever introduces the company's own planning standard (module 2, artifact "portfolio planning standard v1") argues not only with the military but with the pattern movement of the software industry – the same principle, two independent worlds.

C4.4 Robert C. Martin – practice culture and discipline as a prerequisite for speed

Martin (*Clean Code*, 2008; *Clean Architecture*, 2017) stands for the craftsmanship movement, which **institutionalised deliberate practice**: code **katas** and coding **dojos** – small, repeated exercise forms with feedback – are the civilian counterpart to planning exercises and command post exercises ("consistently exercise-based", B.3). His guiding sentence "*The only way to go fast is to go well*" summarises what general-staff training teaches implicitly: discipline and mastered form are not a brake but the prerequisite for speed under pressure (cf. B.3.6: formats exist so that nobody has to think about form under time pressure). (*Framing: deliberately normative – use as doctrine, not as a blueprint; cf. EA memorandum A2.3.*)

What it means for this briefing: for the curriculum this means: interleave **short, repeated planning "katas"** between the big modules – a situation analysis in 30 minutes, a premortem in 60 – until the form sits. Practice becomes routine instead of an event.

Part D – Concrete Training Programs

D.1 Externally available programs (purchasable)

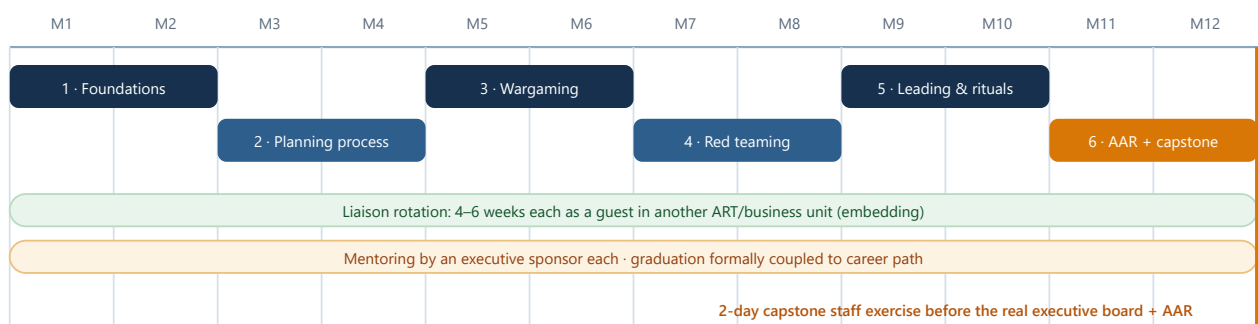
Program	Provider	Content / origin	Suitable for
Team-of-Teams consulting, red-team workshops	McChrystal Group (the author's firm)	Direct implementation of the book's concepts in corporations; builds permanent internal red-team capabilities	Executive level, portfolio boards
Red Team Thinking (training & certification)	Bryce G. Hoffman (graduate of the Army red team program)	Civilian version of the Army curriculum: assumption checks, premortem, groupthink mitigation; book <i>Red Teaming</i> (2017)	Planners, PMO, strategy
Red Team Handbook / Applied Critical Thinking Handbook	US Army (free PDF)	~50 documented techniques for self-study; free basis for internal workshops	Everyone; ideal first read
SAFe Lean Portfolio Management (3 days)	Scaled Agile	Portfolio kanban, guardrails, prioritization (WSJF), lean budgets	Portfolio managers, controllers
Flight Levels Academy	Klaus Leopold (German-language)	Operating picture & steering across three levels	Portfolio/coordination roles
Business wargaming	e.g. Gilad (<i>Business War Games</i>), specialized consultancies	Competitive/scenario simulations for strategy decisions	Strategy, M&A, major initiatives
Intent-Based Leadership	Marquet organization	Mission command for civilians: leading with intent instead of instruction (<i>Turn the Ship Around!</i>)	Line and solution leadership
Calibration training / AIE seminars (<i>new in v2.0</i>)	Hubbard Decision Research	Calibrated probability/interval estimation (a few hours, available online; ~80% of trainees reach calibration); Applied Information Economics	Everyone who estimates/forecasts: planners, architects, controllers
Superforecasting workshops (<i>new in v2.0</i>)	Good Judgment Inc. (Tetlock)	Forecasting skill built on the empirically proven levers training, teaming, aggregation; open online courses	Portfolio boards, strategy, risk
Problem Solving & Decision Making (<i>new in v2.0</i>)	Kepner-Tregoe	The classic of structured problem and decision analysis (a corporate standard for decades); the civilian counterpart to military mission analysis	PMO, operations, incident/problem mgmt
Complexity/sensemaking training (<i>new in v2.0</i>)	The Cynefin Company (Dave Snowden)	Cynefin framework: distinguish ordered from complex situations and decide accordingly – operationalizes "complicated ≠ complex"	Executives, portfolio/solution managers

Innovation Games / participatory budgeting (new in v3.0)	Applied Frameworks (Luke Hohmann; methodology of his company Conteneo)	Serious games as decision rituals: "Buy a Feature" (stakeholders buy with limited budgets), "Prune the Product Tree"; participatory budgeting for portfolio budgets – adopted by SAFe into Lean Portfolio Management (cf. C.4)	Portfolio boards, PI planning, budget rounds
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AAR in a civilian context – foundational management read: Darling/Parry/Moore, "Learning in the Thick of It", *Harvard Business Review*, July–Aug 2005.

D.2 Proposal: an internal 12-month curriculum "Portfolio Staff Training"

Goal: develop 8–12 selected people (portfolio/solution managers, PMO, lead architects, controllers) into methodically trained "portfolio planners" – analogous to SAMS: part-time alongside the job, exercise-heavy, with a mandatory assignment afterwards. **Effort:** ~15–20% of working time over 12 months; afterwards assignment as planning lead for one major undertaking each.



Part-time, ~15–20% of working time · 8–12 participants · followed by a mandatory planning-lead assignment

Fig. 4 – The 12-month "Portfolio Staff Training" curriculum at a glance.

Module 1 · Months 1–2 Foundations – complexity & the operating picture

Reading: *Team of Teams*; Dörner, *The Logic of Failure*; Meadows. **Exercise:** map your own portfolio as a complex system (dependencies, feedback loops); dissect a current status report critically: what is operating picture, what is justification?
Learning goal: participants recognize when classic project steering fails, and why.

Module 2 · Months 3–4 The planning process

Transfer MDMP principles to portfolio planning: problem analysis, real options, explicit comparison, documented assumptions, intent formulation. **Exercise:** plan a real upcoming epic to this standard – including a backbrief by the implementing team. *Addition in v3.0:* the option comparison is additionally run as a "**Buy a Feature**" session (Hohmann, cf. C.4) with real stakeholders – limited play budgets force real trade-off conversations instead of wish lists.

Artifact: the company's own one-page planning format ("portfolio planning standard v1")

Module 3 · Months 5–6 Wargaming & scenarios

Techniques: action–reaction–counteraction, decision points, early indicators; Monte Carlo forecasts as quantitative wargaming (directly executable with our Simulate module). *Addition in v2.0:* the module is preceded by **calibration training** (Hubbard, a few hours, cf. D.1) so participants' estimates and confidence intervals are dependable. *Addition in v4.0 (Duke):* beliefs are consistently phrased as **bets** ("How much would you stake on that?") – the everyday form of calibration; decision points with a pre-agreed response are documented as **Ulysses contracts**. **Exercise:** play the epic planned in module 2 through a half-day wargame against 3 disruption scenarios.

Learning goal: "How do we recognize early that the plan is tipping – and what do we do then?" becomes a standard question.

Module 4 · Months 7–8 Red teaming

Working basis: the Red Team Handbook (free); optionally an external trainer (D.1). **Techniques:** premortem, assumption check, Four Ways of Seeing, anonymous pre-votes. **Exercise:** red-team review of a real upcoming portfolio decision; participants facilitate themselves.

Artifact: the premortem becomes a mandatory step before every portfolio commitment above a defined threshold

Module 5 · Months 9–10 Leading with intent & operating-picture rituals

Mission command / intent-based leadership (Marquet); design of your own "O&I": rhythm, participants, facilitation rules, role of the software (the Situation Report as the shared stage). **Exercise:** participants actually facilitate the portfolio sync; executive backbrief.

Artifact: operating concept "portfolio sync" (agenda, rules, escalation criteria)

Module 6 · Months 11–12 AAR & capstone exercise

Learn AAR facilitation (4-question format, rank-free, incl. the **anti-resulting rule**: assessing decision and outcome quality separately); set up a central lessons-learned register. **Capstone:** a two-day **staff exercise** – a fictitious but realistic large scenario (e.g. "acquisition of a company, integration into the solution within 9 months") is planned end to end: situation analysis → options → wargame → decision before the real executive board → AAR.

Touchstone: does the team pass the exercise in front of real decision-makers?

D.3 Quick start – if 12 months is too big

1. **Immediately (week 1):** download the Red Team Handbook; give the next big portfolio decision a 60-minute premortem.
2. **Quarter 1:** establish the portfolio sync as an "O&I light": fortnightly, 45 minutes, the consolidated Situation Report as the only slide, the chief moderates, bad news gets praised.
3. **Quarter 2:** introduce an AAR after every PI/quarter (4 questions, rank-free, 90 minutes, documented).
4. **Quarter 3:** introduce the planning standard: no board submission for major undertakings without ≥2 real options + documented assumptions + an intent paragraph.
5. **Quarter 4:** decide on the full curriculum (D.2) based on the experience gained.

Connection to our software (memo)

- The aggregated **solution report is our O&I artifact** – traffic-light/trend logic, data-quality flags and executive summary pay directly into "shared consciousness".
- **Simulate module = quantitative wargaming:** compute disruption scenarios as parameter variants and place them side by side in the report.

- Possible later features: an **assumptions register** per epic (with expiry date/review trigger), **decision-point tracking** (early indicator + threshold + agreed response), an **AAR archive** linked to PIs/epics.

Sources

Book (new core source): McChrystal, Collins, Silverman, Fussell: *Team of Teams. New Rules of Engagement for a Complex World*. Portfolio/Penguin, 2015 (German edition: Vahlen). Concept overviews: McChrystal Group ("Shared Consciousness", "Empowered Execution"), The Field Grade Leader, Readinggraphics.

Staff/planner training: Wikipedia "Führungsakademie der Bundeswehr" and "Offizier im Generalstabsdienst" (LGAN: 2 years, ~18% selection) · Army University / Small Wars Journal on SAMS (11-month planner education, OPT assignment) · Wikipedia "Military Decision Making Process" and CALL/GlobalSecurity on COA wargaming · US Army: *Red Team Handbook* v9 / *Applied Critical Thinking Handbook* v8.1 (free PDF) · Forbes (Hoffman) on the 2021 UFMCS defunding.

Civilian transfer / programs: McChrystal Group (red-teaming workshops) · Bryce G. Hoffman: *Red Teaming* (2017), Red Team Thinking LLC · Darling/Parry/Moore: "Learning in the Thick of It", *Harvard Business Review*, July–Aug 2005 · already on the reading list: Marquet, Dörner, Vester, Meadows, Wardley, Leopold, Vacanti.

Judgment hygiene (Part A2.5, new in v4.0): Duke, Annie: *Thinking in Bets. Making Smarter Decisions When You Don't Have All the Facts*. Portfolio, 2018 — short appraisal in the situational-picture literature list (supplement v5); picked up in the AI memorandum (A2.6, M4 as a Ulysses contract).

Architecture thought leaders (Part C.4, new in v3.0): Hohmann, Luke: *Innovation Games* (2006) · *Beyond Software Architecture* (2003) · Tanner/Hohmann: *Software Profit Streams™* (2023). — Hohpe, Gregor: *The Software Architect Elevator* (2020) · Hohpe/Woolf: *Enterprise Integration Patterns* (2003) · architectelevator.com. — Fowler, Martin: *Patterns of Enterprise Application Architecture* (2002) · *Refactoring*, 2nd ed. (2018) · martinofowler.com. — Martin, Robert C.: *Clean Code* (2008) · *Clean Architecture* (2017). — Full source profiles and the EA transfer: the EA memorandum, Part A2; short appraisals in the situational-picture literature list (supplement v3).

Version history

Version	Date	Changes
1.0	2026-08-03	Initial edition: research briefing (Team of Teams, staff/planner training, transfer to IT portfolios), 4 figures, 12-month curriculum proposal, DE + EN.
2.0	2026-08-03	Deepened edition: Part A2 with four additional core sources (Clausewitz, Marquet, Pink, Hubbard); German general-staff training deepened (BLS/SFL/LGAI), UK (JSCSC/ACSC) and Austria (National Defence Academy) added; commonalities box; civilian training market extended (calibration, superforecasting, Kepner-Tregoe, Cynefin); calibration training added to module 3; reading-list supplement v2.
2.1	2026-08-07	Typesetting/layout care per the series standard: page-break/reading-flow rules (headings stay with their following text, paragraph control, no near-empty pages – Part C no longer forces a page break). Content unchanged from 2.0.
3.0	2026-08-07	Extension: new section C.4 "Four civilian corroborating witnesses from architecture practice" – Hohmann (Innovation Games/Buy a Feature/participatory budgeting as decision rituals), Hohpe (Architect Elevator as vertical liaison; "first derivative" → trends into the picture), Fowler (pattern vocabulary as civilian proof of success factor 4; design stamina), Robert C. Martin (katas/practice culture; discipline as prerequisite for speed). Role mapping C.1, program table D.1 and curriculum module 2 extended accordingly; cross-references to the EA memorandum v2.0 (Part A2).
4.0	2026-08-13	Addition: new section A2.5 (Annie Duke, <i>Thinking in Bets</i>) – deciding as betting, resulting (decision ≠ outcome quality), "Wanna bet?" calibration, truthseeking groups, mental time travel/Ulysses contracts. Worked in: the anti-resulting rule in the AAR (B.3) and competency field 5, forecast literacy in competency field 1, the betting ritual + Ulysses contracts in module 3, the anti-resulting rule in module 6; sources section + reading-list supplement v5. Cross-reference: AI memorandum v1.1.
4.1	2026-08-14	Reference maintenance for the online publication: series cross-references now link the online overview, freely available sources link their real URLs, workshop paths removed; cross-references now without version numbers. Content unchanged.
4.2	2026-08-18	Transparency notice per the series standard (AI support, review, editorial responsibility) added to the header; series versioning principles 5/6. Content unchanged.

Source briefing "Team of Teams & Staff Training" · version 4.2 · Solution/Portfolio Management · as of 2026-08-18 · curated by Robert Seebauer, produced with Claude Fable 5 (Anthropic) · Current editions online: <https://jaegerfeld.github.io/situation-report/denkschriften/>