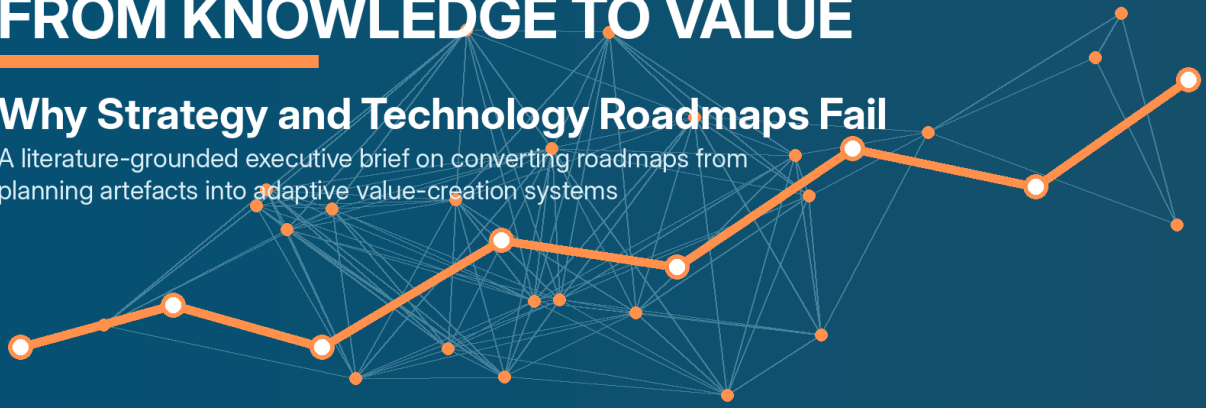


FROM KNOWLEDGE TO VALUE

Why Strategy and Technology Roadmaps Fail

A literature-grounded executive brief on converting roadmaps from planning artefacts into adaptive value-creation systems



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Executive Brief · Strategy, Technology and Innovation Management

Why Strategy and Technology Roadmaps Fail

Most roadmaps do not fail because their analysis is weak. They fail because they are designed as planning artefacts, not as adaptive operating systems that connect knowledge, choices, capabilities, investment and execution.

Core thesis

Roadmaps must connect value pathways to accountable execution, not only describe future technologies.

What changes

The strategic unit of analysis shifts from “technology themes” to evidence-backed value pathways.

Reader outcome

A practical diagnostic to test whether your roadmap is executable, adaptive and value-driven.

INNODARE Perspective

“The organisations that do not integrate strategy, technology and innovation roadmaps are bound to fail”

INNODARE Platform approaches innovation as a knowledge-to-value transformation problem. The Vision-to-Value™ Framework — patent pending — binds together scattered know-how, stakeholder insight, expert capability, technology intelligence, idea development, product/R&D opportunities and collaboration networks to move from strategic vision to measurable value through insight development, foresight, scenario thinking, capability analysis, portfolio design, OKR/KPI definition and adaptive governance. (for information please contact info@innodareplatform.com)

— Prof. Dr. Orhan B. Alankuş · Founder, INNODARE Innovation, Technology, R&D Platform Ltd.

The uncomfortable truth: roadmapping has an execution problem

Technology roadmapping is one of the most powerful instruments for aligning market ambition, product strategy, R&D investment and capability building. In the roadmapping literature, it is explicitly presented as a way to link market, product and technology perspectives over time. Yet in practice, many roadmaps become static documents: visually impressive, intellectually defensible, and operationally weak.

The failure pattern is familiar. A company organizes workshops, collects trends, maps technology horizons, benchmarks competitors and produces a professional deck. After board approval, the roadmap slowly loses force. Business units return to short-term pressures. R&D teams continue existing projects. Budget cycles dominate prioritization. New market or regulatory signals arrive, but no one has the authority to revise the roadmap. The document remains, but the management system around it is missing.

A high-quality roadmap is therefore not primarily a document. It is a disciplined decision architecture. It answers three questions at the same time: What value will we create? Which capabilities and technologies must be built to create that value? How will the organization keep learning, reprioritizing and executing as conditions change?

Executive insight

The most dangerous roadmap is not the one that is wrong. It is the one that is plausible enough to be approved, but not operational enough to change resource allocation, team behavior or investment decisions.

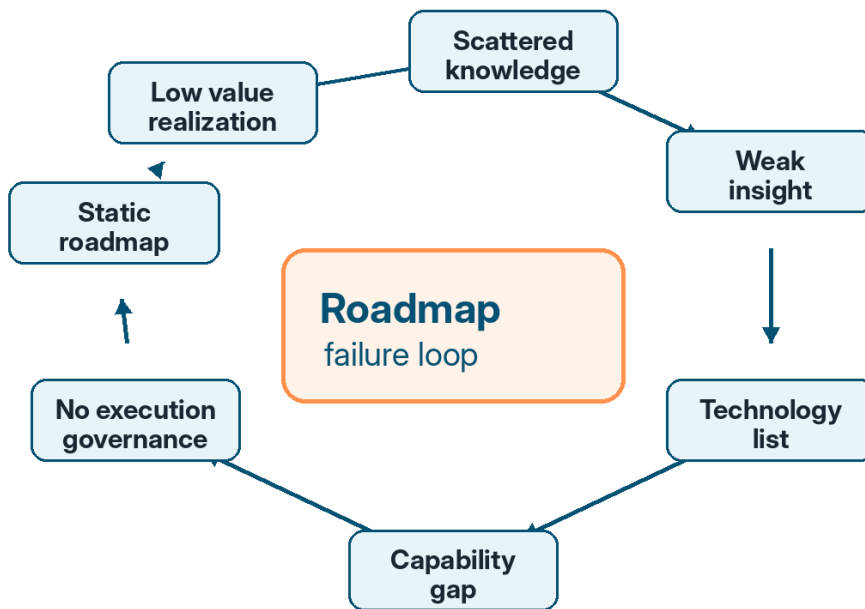


Figure 1. The roadmap failure loop: when knowledge is not converted into insight, insight is not converted into strategic choice, and strategic choice is not converted into governed execution.

A literature-grounded diagnosis: eight root causes

The research base behind this diagnosis combines technology roadmapping, strategy execution, dynamic capabilities, absorptive capacity, open innovation, portfolio management, corporate foresight and organizational learning. The conclusion is consistent: roadmap quality depends less on the elegance of the final timeline and more on the quality of the organizational system that produces and governs it.

1. Vision is confused with strategy

Vision describes an ambition. Strategy is a set of choices under constraints. When roadmaps start from broad aspirations such as digital leadership, net zero, AI transformation or technology excellence, they often generate too many initiatives. Porter and Rumelt both emphasize that strategy requires choice, trade-off and focus. Without those choices, a roadmap becomes a catalogue of attractive futures rather than a commitment mechanism.

2. Technology push dominates value pull

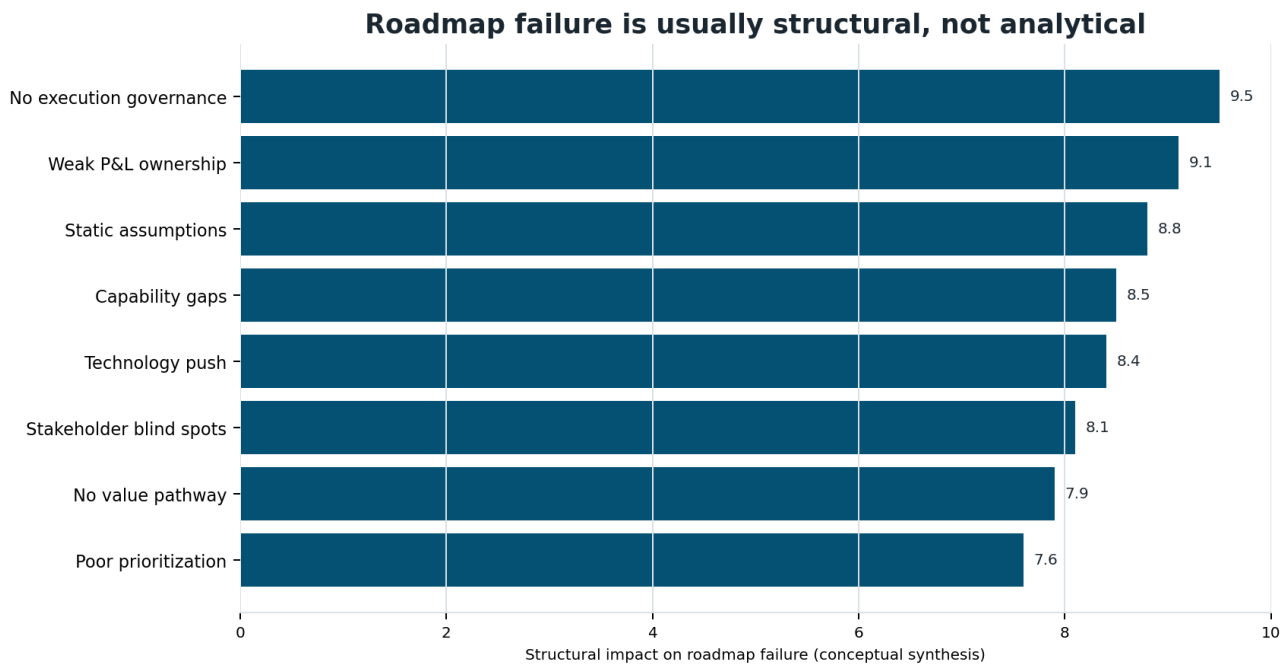
R&D-led roadmaps frequently start with existing competencies or fashionable technologies. The stronger logic starts from value pathways: customer outcomes, operational gains, sustainability gains, resilience needs or differentiation opportunities. Technology then becomes an enabler of value, not the starting point. This distinction is central to successful roadmapping because market, product and technology layers must be linked explicitly.

3. Distributed knowledge is not integrated

Roadmap knowledge is rarely located in one department. Customer pain points may sit with sales and service. Feasibility constraints may sit with engineering and manufacturing. Technology signals may sit with R&D and external experts. Regulatory constraints may sit with legal and compliance. Cohen and Levinthal's work on absorptive capacity shows that organizations need mechanisms to recognize, assimilate and exploit external knowledge. Roadmaps fail when those mechanisms are weak.

4. P&L ownership is missing

Strategy teams can prepare a roadmap, but business units must execute it. If roadmap milestones are not connected to commercial accountability, operating budgets and P&L ownership, they remain external recommendations. Kaplan and Norton's execution research points to the importance of translating strategy into measurable objectives, ownership and governance. Roadmaps need the same discipline.



Source: INNODARE synthesis from roadmapping, strategy execution, dynamic capabilities, portfolio management and foresight literature.

Figure 2. Conceptual impact ranking synthesized from the literature and INNODARE consulting analysis. It is not an empirical survey result; it is a prioritization map for management attention.

The root causes continue below the surface

5. Internal capability gaps are underestimated

Technology strategy is often defined at the level of ambition but executed at the level of capability. Dynamic capabilities theory argues that competitive advantage depends on the organization's ability to sense opportunities, seize them and reconfigure resources. A roadmap that does not evaluate skills, data, tools, infrastructure, partners, funding capacity and organizational readiness is essentially a promise without a production system.

6. Roadmap horizons are not synchronized with funding and budget cycles

Technology horizons may span three to ten years, while budget cycles and incentive systems often operate annually. External funding windows, consortium formation cycles and regulatory milestones follow their own rhythms. If these calendars are not synchronized, the roadmap influences presentations but not resource allocation. This is especially important for R&D-intensive firms seeking EU, national or sectoral co-funding.

7. Portfolio discipline is weak

A roadmap should force prioritization across short-term competitiveness, medium-term capability development and long-term strategic options. Portfolio management research shows that high-performing innovation systems balance strategic fit, value, risk and resource capacity. Roadmaps fail when every initiative is kept alive because no explicit portfolio logic exists.

8. Adaptive governance is absent

Corporate foresight research shows that value comes not simply from predicting the future, but from improving preparedness, strategic options and responsiveness. Yet most roadmaps lack early warning indicators, decision triggers and revision rights. A quarterly update meeting is not governance. Governance requires predefined signals, thresholds, authority and learning loops.

Management implication

The roadmap should be judged by whether it changes decisions. If it does not change investment priorities, capability development, project selection, OKRs, partner choices or governance rhythm, it is not yet a roadmap. It is a narrative.

Roadmap quality is a systems issue

Failure layer	Typical symptom	Required remedy
Strategic	Too many initiatives, weak choices	Clear value pathways and trade-offs
Epistemic	Scattered knowledge and blind spots	Stakeholder insight system
Operational	No accountability or revision logic	OKRs, EWIs, triggers and governance

What value-driven roadmaps do differently

The remedy is not to make the roadmap longer. The remedy is to change the architecture of roadmapping. Strong roadmaps are built backward from value, outward through the organization, and forward into execution governance.

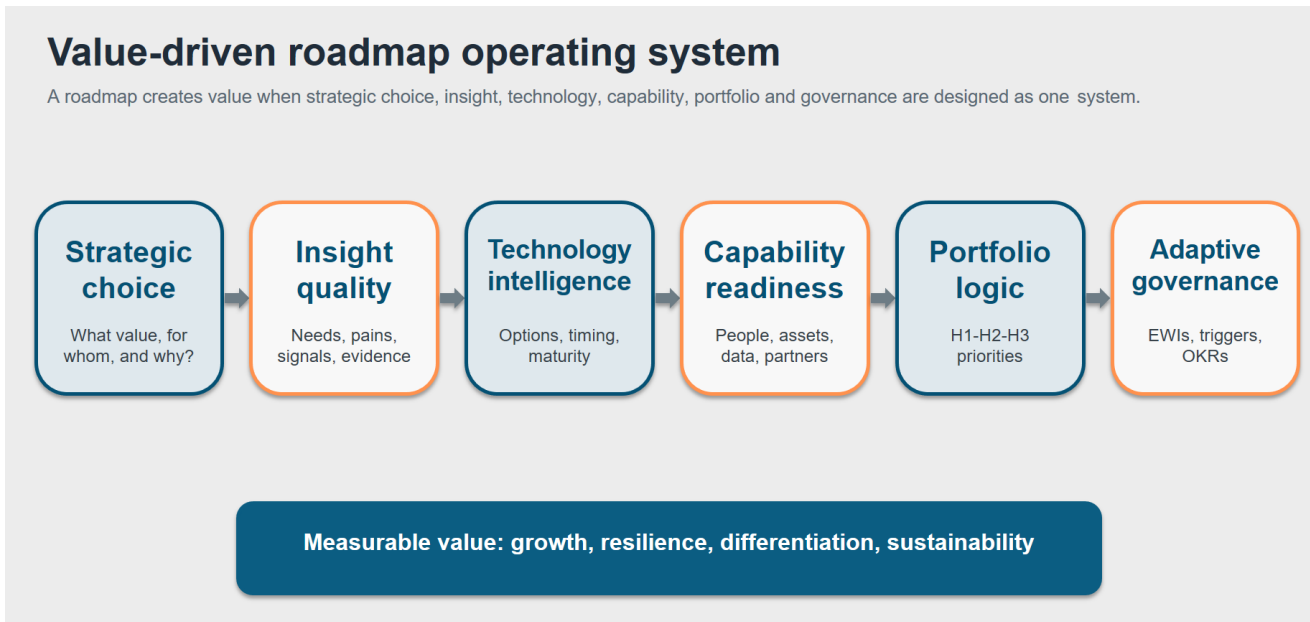


Figure 3. Value-driven roadmap operating system.

Six design principles

Start with value pathways

Define the specific customer, market, operational, sustainability or strategic value the roadmap must create.

Map technology to value

Each technology initiative should trace to a value pathway and a capability requirement.

Build portfolio discipline

Balance near-term competitiveness, medium-term capability building and long-term strategic options.

Use evidence-backed insights

Convert stakeholder knowledge into structured insight before converting insight into initiatives.

Confront capability gaps early

Assess skills, infrastructure, data, partners, funding and decision capacity before approval.

Govern adaptively

Define early warning indicators, thresholds, decision rights, OKR owners and review rhythms before launch.

INNODARE perspective: from roadmap document to value architecture

INNODARE's Vision to Value Framework is positioned as a strategic consultancy methodology, not as a standard platform module. Its purpose is to structure the roadmapping process so that strategic vision, stakeholder insight, technology intelligence, capability assessment, portfolio design, OKR/KPI logic and adaptive governance are connected from the beginning. INNODARE's specifically designed 5 multi-AI agent systems support the insight and knowledge of the experts in the area.

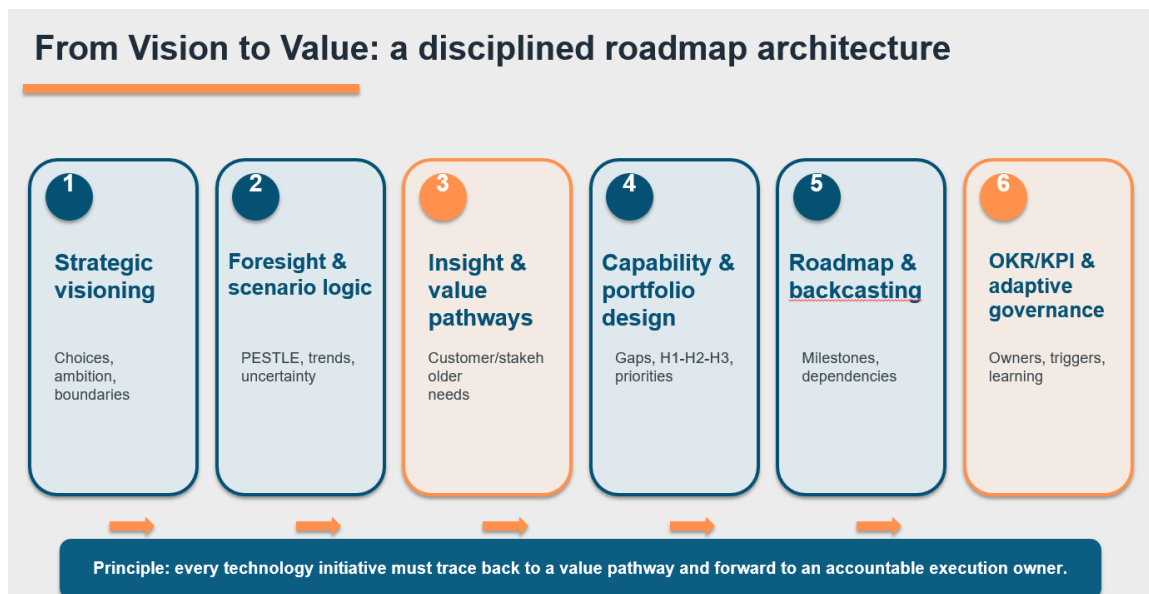


Figure 4. Simplified Vision to Value roadmap architecture.

Important distinction

The platform can support knowledge, insight, ideation, expert collaboration and secure innovation workflows. Vision to Value is the consultancy framework used when a company needs a deeper strategy, technology, R&D or innovation roadmap.

Practitioner tool: Roadmap Readiness Diagnostic

Use the following diagnostic before approving a strategy, technology, R&D or innovation roadmap. Scoring suggestion: 0 = absent, 1 = weak, 2 = adequate, 3 = strong. Any item scored 0 or 1 is a structural risk.

Dimension	Diagnostic question	Score	Evidence required
Strategic choice	Does the roadmap define what we will not do?		Clear trade-offs, priority logic
Insight quality	Are initiatives based on structured stakeholder insight?		Customer, user, employee, supplier and expert inputs
Value linkage	Can every initiative be traced to measurable value?		Value pathway map
Technology logic	Are technologies linked to timing, maturity and advantage? Are the emerging technologies covered?		TRL, market, IP and capability assessment
Capability readiness	Are people, data, infrastructure and partners sufficient?		Capability gap analysis
Portfolio balance	Are H1-H2-H3 investments balanced?		Portfolio matrix and resource envelope
Execution ownership	Are owners and OKRs assigned?		OKR cascade, P&L linkage
Adaptive governance	Are early warning indicators and triggers defined?		Review rhythm, decision rights, trigger thresholds

How to interpret the score

<p style="text-align: center;">0-10</p> <p>High risk: roadmap likely to remain a planning artefact.</p>	<p style="text-align: center;">11-18</p> <p>Moderate risk: execution will depend heavily on leadership attention.</p>	<p style="text-align: center;">19-24</p> <p>Stronger basis: roadmap has the minimum architecture for execution.</p>
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From knowledge to value: what readers can do now

This issue deliberately focuses more on the management problem than on platform description. The implication for executives is direct: before commissioning or approving another roadmap, redesign the process that produces and governs the roadmap.

<p>1. Audit the current roadmap</p> <p>Use the diagnostic on page 7 and identify the weakest dimension before updating the document.</p>	<p>2. Rebuild around value pathways</p> <p>Shift the first workshop from “technology themes” to “where value will be created and captured.”</p>	<p>3. Add adaptive governance</p> <p>Define early warning indicators, triggers and OKR owners before the roadmap is approved.</p>
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Next issue

How Multi-AI-Agent Systems Can Transform Innovation and Strategy Development - from trend scanning and scenario logic to insight development, capability analysis and strategic option generation.

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