



Toward True Agility in Swedish Defense Procurement

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April 19, 2025

SWEDEN'S FMV (Försvarets materielverk) is a rare example of a civilian agency with a legal monopoly on defense procurement. However, despite its modern institutional framework, FMV still relies heavily on traditional project models such as Waterfall and the V-Model—approaches increasingly ill-suited to the fast-paced, iterative nature of contemporary digital and defense innovation. As threats evolve more rapidly than procurement cycles, this structural rigidity risks undermining Sweden's ability to respond effectively to emerging security challenges.

This paper explores how FMV and the broader legal ecosystem must be reformed to support true agility—centered on continuous user feedback, cross-functional delivery teams, and iterative, exploratory development. Current public procurement laws, especially LOU and EU directives, constrain flexibility by enforcing fixed-scope, specification-heavy contracts. Legal reforms enabling capability-driven, modular procurement models are essential to allow for adaptive, mission-focused outcomes rather than rigid deliverables.

Organizationally, FMV must shift from its compliance-heavy, siloed structure toward a product-oriented model, where teams include FMV staff, suppliers, and end-users from the Armed Forces working side by side. This must be supported by a cultural evolution toward blameless learning, experimentation, and direct user collaboration throughout the development process. Additionally, investment in modern digital infrastructure—such as secure DevSecOps platforms and shared development environments—is critical to make agile practices technically feasible at scale.

In a time of mounting geopolitical instability and technological acceleration, agile procurement is no longer an aspirational ideal—it is a strategic necessity. FMV is uniquely positioned to lead this transformation, but doing so will require bold legal, structural, and cultural shifts. If Sweden can seize this opportunity, it could set a new global standard for defense acquisition in the 21st century.

INTRODUCTION

The Swedish Defence Materiel Administration (FMV) occupies a unique position in the Western world: a civilian authority with a legal monopoly on defense procurement for the Swedish Armed Forces. Despite this civilian identity, FMV remains rooted in traditional engineering governance models such as the Waterfall and V-Model, largely at odds with the modern principles of agility, DevOps, and iterative learning that dominate the contemporary IT and engineering landscape. As Sweden's broader tech ecosystem embraces agile methodologies, the disconnect between FMV and the rest of the digital world grows increasingly problematic. This essay explores the legal, organizational, cultural, and technological transformations required to allow FMV and its ecosystem to become truly agile in the deepest, most meaningful sense.

UNDERSTANDING THE CONCEPTS: FROM WATERFALL TO AGILE AND DEVOPS

To appreciate the depth and urgency of the proposed transformation, it is important to clarify the conceptual underpinnings of the methodologies at stake. The difference between traditional approaches like Waterfall and modern paradigms such as Agile and DevOps is not merely one of tools or process, but of worldview. These frameworks embody different assumptions about how complex systems are built, how people collaborate, and how value is delivered over time.

The **Waterfall model** is a linear and sequential project management methodology in which each phase—requirements, design, implementation, testing, and maintenance—must be completed before the next begins. It relies on the assumption that all necessary information can be gathered and specified upfront, and that changes are both rare and costly. While suitable for well-defined, low-uncertainty projects, Waterfall falters in dynamic, uncertain environments like defense technology, where requirements evolve and innovation is continuous.

A close relative of Waterfall is the **V-Model**, particularly common in systems and safety-critical engineering. It emphasizes a clear pairing between development phases and corresponding validation activities. While this improves traceability and quality assurance, it still imposes a rigid structure that limits responsiveness and adaptability—qualities increasingly essential in defense procurement.

By contrast, **Agile** methodologies emphasize iterative development, frequent user feedback, and responsiveness to change. Instead of delivering a fully built product after years of planning and execution, Agile teams deliver working increments in short, time-boxed cycles known as sprints. These cycles include regu-

lar reviews and retrospectives that allow for course correction and learning. Agile encourages close collaboration between developers and end-users, continuous refinement of requirements, and rapid adaptation to unforeseen challenges or opportunities.

DevOps, a complementary movement, expands Agile principles to include operational and infrastructure concerns. It breaks down traditional silos between software development and IT operations, emphasizing automation, continuous integration and delivery (CI/CD), and a shared sense of ownership over the product lifecycle. In a DevOps environment, changes are deployed more frequently, systems are monitored continuously, and resilience is built through rapid feedback loops. This is especially important in defense contexts, where systems must be adaptable, secure, and mission-ready at all times.

Together, Agile and DevOps offer a model for high-performance, user-centered system development. They prioritize learning over prediction, iteration over rigid sequencing, and collaboration over command-and-control hierarchies. For FMV and the wider defense ecosystem, these approaches offer not just efficiency, but a pathway to more resilient, adaptive, and mission-aligned outcomes.

LEGAL AND PROCUREMENT SYSTEM REFORM

The most foundational obstacle to agility in FMV lies in the structure of Swedish and EU procurement law. The Swedish Public Procurement Act (LOU) and EU directives enforce fixed-scope, fixed-price, and heavily specified contracts that naturally lend themselves to Waterfall models. These frameworks prioritize compliance, documentation, and risk elimination over flexibility, exploration, and user-centric iteration.

To enable agile procurement, Sweden must adopt legal structures that allow for outcome-based, capability-driven contracts. Rather than specifying exact technical details upfront, contracts should define the mission objective or capability (e.g., “detect and track small UAVs in low-visibility environments”) and allow contractors and product teams to explore the best technical path forward through iterative cycles.

FMV and its legal overseers must also explore new contractual instruments such as modular procurement frameworks, agile task orders, and innovation partnerships that allow scope to evolve during project lifecycles. Legal support for the formation of cross-functional teams composed of FMV personnel, suppliers, and end-users should be built into contracts, ensuring that agile teaming is not just encouraged but institutionally supported.

ORGANIZATIONAL REFORM WITHIN FMV

FMV's current structure is optimized for control, compliance, and top-down project management. To operate in an agile manner, FMV must pivot from a control-tower model to a collaborative, delivery-focused organization.

This entails creating cross-functional, long-lived product teams responsible for entire capability domains rather than isolated project deliveries. These teams should include a product owner from FMV, embedded engineers from industry partners, user representatives from the Swedish Armed Forces, and enabling roles such as UX designers and DevOps engineers. Their mandate should be to deliver iteratively, continuously validate outcomes with users, and adjust course as needed.

Further, FMV must invest in growing its internal technical competence—not just in terms of defense engineering, but also in digital development. A robust technical spine inside FMV is essential for meaningful participation in agile processes, enabling the agency to co-create and not merely supervise.

CULTURAL AND INSTITUTIONAL SHIFTS ACROSS THE DEFENSE ECOSYSTEM

Agility is as much a cultural challenge as it is a procedural one. FMV, and the defense sector more broadly, operate in a high-stakes environment with significant aversion to risk and failure. Agile, by contrast, is built on experimentation, fast feedback, and blameless retrospectives.

For FMV to embody agility, it must shift toward a learning-oriented culture. This includes normalizing failure as part of innovation, embracing blameless post-mortems, and structuring programs to learn rapidly rather than attempting to predict every contingency up front. Organizational and political leadership must protect teams from blame-based oversight when working in experimental and iterative modes.

The feedback loop between FMV, industry, and actual end-users (soldiers, pilots, analysts) must be radically tightened. Continuous user feedback should guide development from the earliest stages through deployment. User representatives should be embedded in development teams or have a standing presence via digital collaboration tools.

TECHNOLOGICAL INFRASTRUCTURE FOR AGILITY

While DevOps and Agile are often associated with a suite of cutting-edge tools—automation pipelines, container platforms, continuous integration environments—it is critical to understand that tools alone do not constitute DevOps or Agile. These tools are not the origin of agility; they are a reflection of it. They have been developed in response to the needs and principles of agile ways of working: rapid feedback, continuous delivery, cross-functional collaboration, and the breaking down of silos between development, operations, and users. Without those principles in place, the tools cannot deliver their intended value. Misapplied in traditional or pseudo-agile environments, they may even hinder progress by introducing complexity without clarity or results.

In a traditional Waterfall or V-Model setting, where rigid planning, delayed feedback, and stage-gated delivery dominate, the use of DevOps tooling tends to produce frustration rather than speed. Pipelines stall under bureaucratic approval chains, automation is limited to superficial tasks, and telemetry data is gathered without being meaningfully used. The core assumption of DevOps—that value is delivered continuously through empowered teams operating with autonomy and shared responsibility—cannot be fulfilled in a structure that insists on hierarchical control, rigid scope definition, and infrequent user interaction.

Therefore, FMV's investment in technological infrastructure must be deeply integrated with cultural and procedural reform. Tools must be deployed not for their own sake, or because they are modern, but because they serve a specific worldview—a worldview centered on learning, collaboration, and adaptability. Within this worldview, development environments are not isolated from production realities; instead, they mirror and integrate with them through shared pipelines, observability, and automated compliance. Infrastructure is no longer static and manually provisioned, but defined as code, reproducible, and version-controlled like software itself.

That said, the technological foundation remains essential. For FMV to support true agility, it must enable secure, defense-compliant development platforms that accommodate the realities of sensitive data and classified environments, while still allowing for rapid iteration. These platforms should support continuous integration and delivery (CI/CD), automated testing, containerized deployments, and robust telemetry. A modern, unified **DevSecOps** platform—co-owned by FMV, industry partners, and the Armed Forces—would allow development teams to move quickly and safely, with real-time insights into performance, security, and user engagement.

Moreover, these platforms must enable and encourage architectural modularity. Agile delivery is signifi-

cantly hampered when systems are built as monolithic blocks that can only be tested or deployed in full. By contrast, modular, service-oriented architectures allow individual components to evolve independently, reducing risk and enabling parallel development. These architectural decisions must be baked into procurement strategies, not retrofitted as technical afterthoughts.

In sum, the tools of Agile and DevOps are not neutral enablers—they are tightly coupled with the values, practices, and structures that define an agile organization. Their successful implementation depends not just on procurement or installation, but on alignment with a deeper transformation in how FMV thinks, collaborates, and delivers. Trying to graft DevOps tools onto a Waterfall-style bureaucracy is like putting a jet engine on a wagon: technically impressive, but misaligned with the vehicle's design. To achieve agility, FMV must change the vehicle—not just the parts.

A REALISTIC ROADMAP: STARTING WITH AGILE SKUNKWORKS

The path to full agility does not begin with total reform. Instead, FMV should create a dedicated Agile Procurement Lab or Skunkworks unit. This team would handle selected digital or low-risk systems (e.g., battlefield apps, training tools) using true agile delivery models. It would work with flexible suppliers, end-users, and regulators to test what is possible under current law and identify what legal constraints must change.

These pilot programs should operate with co-located, empowered teams; short sprint cycles; continuous demos to stakeholders; and open retrospectives. Lessons learned can be formalized and used to gradually influence procurement policy, team structures, and even legislation.

CONCLUSION

Agility in defense procurement is not a contradiction in terms — it is an imperative for operational relevance in an age defined by complexity, rapid change, and technological disruption. In its current form, FMV operates with outdated assumptions: that requirements can be fully known upfront, that linear planning reduces risk, and that control ensures success. These beliefs no longer hold in a world where threats are asymmetric, technologies are evolving faster than procurement cycles, and user needs shift in real time.

True agility demands more than surface-level change. It requires rethinking the very legal scaffolding of procurement, enabling contracts that evolve with knowledge rather than freeze it in place. It necessitates breaking down rigid hierarchies and building

multidisciplinary, empowered teams capable of delivering end-to-end capabilities, not just components. It calls for a culture of experimentation, psychological safety, and relentless focus on user outcomes. And it depends on a digital infrastructure that can support secure, fast, and continuous development.

FMV has a rare opportunity: to lead not only Sweden's transition toward modern defense acquisition but to serve as a model internationally for what a truly agile, digitally native public procurement agency can become. The challenges are real, but so are the capabilities and momentum within Sweden's broader tech ecosystem. With bold vision, thoughtful pilots, and systemic reform, FMV can bridge the gap between its legacy processes and the agile future required to meet the demands of modern defense.

In doing so, FMV will not merely modernize its processes — it will redefine its purpose. It will shift from being a gatekeeper of procurement to a catalyst of innovation, from a controller of projects to a steward of capabilities. And in that transformation lies not just organizational evolution, but a national strategic advantage.

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