"The war is a war of logistics."
Fleet Adm. Ernest J. King, USN

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Competing on Logistics: A Maturity Assessment Tool for the Hungarian Defence Forces

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The article advances three claims. First, military organizations do not simply import civilian logistics; rather, they adapt civilian practices, partnerships, technologies, and analytical tools to military requirements. Second, this literature provides a sufficiently strong basis for a tailored maturity assessment tool that could support logistics development in the Hungarian Defence Forces (HDF). Third, the utility of such tools depends not only on high-level decisions, but also on the organizational routines, skills, and coordination mechanisms that translate strategy into practice. The paper therefore uses the notion of a "Martini Merger" as a warning against endorsing ambitious integration schemes without addressing operational differences and the 'soft factors' that ultimately determine execution.

KEYWORDS: civil-military logistics, maturity assessment, defence logistics, Hungarian Defence Forces, Martini Merger

Logisztikai verseny: érettségértékelő eszköz a Magyar Honvédség számára

A tanulmány három fő állítást fogalmaz meg. Egyrészt rámutat arra, hogy a katonai szervezetek nem egyszerűen átveszik a civil logisztikai megoldásokat, hanem azokat saját működési követelményeikhez igazítják. Másrészt amellett érvel, hogy a szakirodalom elegendő alapot kínál egy, a Magyar Honvédségre szabott logisztikai érettségértékelési eszköz kialakításához. Harmadrészt hangsúlyozza, hogy az ilyen eszközök gyakorlati haszna nem csupán a felső szintű döntéseken múlik, hanem azokon a szervezeti rutinokon, készségeken és koordinációs mechanizmusokon is, amelyek a stratégiát végrehajtható gyakorlattá alakítják. A tanulmány ezért a „Martini Merger" fogalmát figyelmeztetésként használja: a nagyszabású integrációs elképzelések csak akkor lehetnek eredményesek, ha a működési különbségek és a végrehajtást meghatározó „puha tényezők" is megfelelő figyelmet kapnak.

KULCSSZAVAK: civil-katonai logisztika, érettségértékelés, védelmi logisztika, Magyar Honvédség, Martini Merger

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Introduction

This article reviews how military organizations use civilian logistics and inquires how the resulting knowledge can be translated into an assessment instrument for the HDF. The literature review focuses on the paper's central argument: civilian logistics is most valuable to the military when it is selectively adapted, organizationally embedded, and evaluated through a structured maturity framework.

The paper proceeds in three steps. The first section synthesizes four recurring mechanisms of military use of civilian logistics: the adaptation of commercial supply-chain practices, civil-military partnerships, the transfer of civilian technologies, and the use of civilian modelling and decision-support tools. The second section proposes a concise maturity assessment tool for HDF logistics. The conclusion returns to the warning implied by the term "Martini Merger"[1]: strategic agreements and modernization slogans do not produce capability by themselves; implementation depends on organizational fit, discipline, and learning.

Military Applications of Civilian Logistics

Literature suggests that military organizations integrate civilian logistics through four broad mechanisms. These mechanisms overlap in practice, but they provide a useful analytical structure for understanding where civilian inputs matter, and where military adaptation remains indispensable.

Adapting Commercial Supply-Chain Practices

Military organizations have long borrowed from commercial logistics in areas such as procurement, supplier management, inventory visibility, and performance-based support. Studies of the U.S. Department of Defence show the value of barcoding, Radio Frequency Identification (RFID), prime-vendor arrangements, and contractor support methods in improving efficiency and sustainment responsiveness.[2] At conceptual level, lean, agile, and network-centric approaches have also informed expeditionary and high-tempo logistics, although always with modification for security, uncertainty, and surge requirements.[3] More recent work on defence supply chains highlights that commercial governance models can inform buyer-supplier relations, but only when preparedness and wartime resilience are treated as core constraints rather than afterthoughts.[4]

1 Vastag and Whybark 1991, 251.
2 Navas 2001; Beanum 2006; Lippert 2007.
3 Kumar and Chia 2012; Parlier 2004.
4 Ekström et al. 2020; Pedersen et al. 2025.

Civil-Military Partnerships and Dual-Use Logistics

A second mechanism is the deliberate use of civilian industrial and logistics capacity. Civil-military integration is especially visible in works on China and in studies of emergency and humanitarian logistics. This literature shows that civilian firms can be evaluated and incorporated into military supply networks through structured capability criteria, while national policy can encourage spillovers between defence and civilian production.[5] Research on contingency and disaster relief further demonstrates that integrated civil-military networks can increase responsiveness when military command structures and civilian distribution systems are combined effectively.[6] The implication for the HDF is not full dependence on civilian actors but the creation of interoperable arrangements that are able to expand capacity both in crisis and wartime.

Technology Transfer from Civilian Logistics

The third mechanism is the transfer of civilian technologies into military logistics. Additive manufacturing, IoT-based tracking, AI-assisted planning, blockchain-enabled traceability, and autonomous platforms are all being explored for defence applications.[7] The military value of these technologies lies in improved visibility, predictive maintenance, faster decision support, and more resilient distribution. Yet the literature is equally clear that civilian technologies cannot simply be transplanted. They must be hardened for contested environments, integrated into secure military architectures, and aligned with interoperability requirements. This is why digitalization should be assessed as a staged capability rather than as a binary matter of acquisition.[8]

Civilian Modelling and Decision-Support Tools

The fourth mechanism concerns analytical methods. Civilian simulation, operations research, and systems-engineering tools are frequently used in military maintenance, sourcing, transportation planning, and sustainment design.[9] Their appeal lies in their ability to model complex trade-offs under resource constraints. However, military use requires additional assumptions about secrecy, disruption, uncertainty, and adversarial action. In short, the literature does not support a simplistic contrast between ‘civilian’ and ‘military’ logistics; instead, it points to a continuous process of adaptation in which commercial methods provide starting points, but military effectiveness depends on selective translation.

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5 Xu and Zhang 2020; Yang and Zhang 2025.

6 Wang and Yu 2012; Tatham and Rietjens 2016.

7 Dymyt and Wincewicz-Bosy 2023; Stanley-Lockman 2020; Jałowiec and Paliszkiewicz 2025; Dsouza 2025.

8 Tubis et al. 2024; Hamidi et al. 2024; Wringe et al. 2025.

9 Gallimore et al. 2005; Merkurjevs et al. 2009; Davids et al. 2013; Filippi et al. 2015.

Toward a Maturity Assessment Tool for HDF Logistics

If civilian logistics is to contribute systematically to defence capability, the HDF needs a way to assess its current position and sequence further improvement. Maturity models are useful for that purpose because they describe organizational development as a progression across defined levels of capability. In this sense, maturity is not an end state but a structured way of identifying where an organization stands, what routines characterize each stage, and which improvement steps are realistic next moves.[10]

The reviewed literature supports a compact HDF-oriented framework that combines general logistics maturity research with military-specific concerns. Rather than reproducing a long inventory of indicators, the framework below identifies the core domains that should be assessed if the HDF wishes to modernize logistics in a disciplined and comparable way.

Dimension	*Why it matters for HDF logistics*
Process and operations	Captures the standardization, repeatability, and integration of core logistics processes. This is the foundation on which all other improvements depend.[11]
Technology and digitalization	Assesses the adoption of enabling technologies such as automation, digital twins, IoT, and blockchain-ready architectures.[12]
Data and analytics capability	Measures the organization's ability to convert logistics data into forecasting, maintenance, and readiness decisions.[13]
Risk, resilience, and cybersecurity	Evaluates the ability to sustain logistics under disruption, cyberattack, and contested conditions.[14]
Sustainability and circularity	Reflects growing NATO and EU pressures for environmentally responsible and resource-efficient logistics.[15]
Collaboration and network integration	Focuses on cooperation across military units, civilian suppliers, and multinational partners.[16]
Workforce and training	Examines whether personnel possess the skills needed to operate more digital and integrated logistics systems.[17]
Governance, doctrine, and organizational design	Ensures that logistics modernization is anchored in doctrine, force design, and decision rights.[18]

10 Mirihagalla 2022; Mirihagalla and Vastag 2022.
11 Zoubek and Šimon (2021); Baglio et al. (2025).
12 Machado and Rodríguez (2025); Tubis et al. (2024); Wringe et al. (2025).
13 Korsten et al. (2024); Birbasov et al. (2025).
14 Tubis and Werbińska-Wojciechowska (2021); Plevnik and Rupnik (2026).
15 Ferraro et al. (2023); Ferraro et al. (2026).
16 El Asri et al. (2025); Vasiliauskas et al. (2024).
17 Grala and Ja³owiec (2024); Sinko et al. (2026).
18 Antai et al. (2024); Ekström and Skoglund (2026).

The framework can be operationalized through a five-level scale that balances simplicity with discriminating power.

Level	*Typical characteristics*
1. Initial / ad hoc	Processes are fragmented, digital support is limited, and logistics remains predominantly reactive.
2. Repeatable / basic	Basic procedures exist and some standardization is visible, but integration and data use remain narrow.
3. Defined / integrated	Processes are formally defined across functions, automation begins to scale, and risk management becomes systematic.
4. Managed / smart	Decision-making is increasingly data-driven; visibility, analytics, and interoperability support proactive logistics management.
5. Optimized / adaptive	Logistics is resilient, continuously improved, digitally integrated, and capable of operating in contested and multinational environments.

Application Logic

In practical use, the tool should proceed in four steps. First, each dimension should be translated into a small set of observable indicators. For example, process maturity may be assessed through workflow standardization and handover discipline, whereas technology maturity may focus on telemetry, automation, and digital visibility. Second, indicators should be weighted, whether through expert judgement, AHP-based methods, or a simpler scoring approach suited to the HDF's institutional capacity.[19] Third, the results should generate both dimension scores and an overall maturity profile. Fourth, the profile should be linked to an improvement roadmap that specifies not only desired end states but also sequenced, feasible next steps.[20]

HDF-Specific Considerations

Three considerations deserve particular attention in an HDF application. First, contested logistics readiness must be visible in the framework, because digitalization without resilience can create new vulnerabilities rather than operational advantage.[21] Second, the tool should assess the HDF's ability to mobilize civilian capacity in crisis, including reverse logistics and outsourced support arrangements where appropriate.[22] Third, logistics maturity must be connected to doctrine and force structure. Without that linkage, assessment remains a technical exercise instead of becoming a lever of military transformation.[23]

19 Uraipan et al. 2021; AbdelAziz et al. 2025.

20 Facchini et al. 2020; Rahadian et al. 2024.

21 Reddy et al. 2024; Plevnik and Rupnik 2026.

22 Vasiliauskas et al. 2024.

23 Antai et al. 2024; Ekström and Skoglund 2026.

Conclusions

The literature reviewed here supports three conclusions. First, military organizations benefit from civilian logistics not by copying it wholesale, but by adapting commercial practices, partnership models, technologies, and analytical tools to the demands of defence. Second, this accumulated knowledge is mature enough to justify a structured HDF logistics maturity assessment tool. Such a tool would help move debate away from isolated modernization projects toward a broader and more disciplined view of logistics capability.

Third, and most importantly, capability development is vulnerable to what might be called the logic of the "Martini Merger": ambitious agreements are approved at the top, but the difficult work of reconciling routines, incentives, skills, and operating practices is left unresolved. In logistics, these so-called soft factors are not secondary. They are often the decisive conditions of sustainable advantage. Mature logistics systems therefore depend not only on technology and formal structure but also on training, coordination, doctrine, and organizational learning. For the HDF, the main value of a maturity tool lies precisely in making those less visible conditions assessable and actionable.

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