LSE !deas]

BRDO
Better Regulation Delivery Office

From Ukraine's Wartime Adaptation to Europe's Defence Readiness: Learning from Ukraine's Adaptive Governance in the Defence Sector

MATTHEW B. ARNOLD, VIKTORIIA ROLLER AND KHRYSTYNA ZHYVOGLIAD

Research Report
September 2026

The Authors

Matthew B. Arnold is Programme Director of LSE IDEAS' Democratic Resilience in a New Age of War Programme. He holds doctoral and master's degrees from the London School of Economics and Political Science.

Viktoriia Roller is Head of the Analytical Unit, Defence Policy Sector at Better Regulation Delivery Office (BRDO). She holds a doctoral degree in law from Taras Shevchenko National University of Kyiv.

Khrystyna Zhyvogliad is Senior Defence Policy Analyst, Defence Policy Sector at BRDO. She holds a master's degree from Kyiv National University of Trade and Economics.

Acknowledgements

This paper is a co-publication of **LSE IDEAS and BRDO**. The co-authors would like to thank the leadership of both institutions for their support to the collaborative partnership and this report. We are also grateful to those who provided invaluable insights through expert interviews, as well as to the many **BRDO staff** who reviewed drafts and offered thoughtful feedback throughout the process. A deep appreciation goes to the **LSE IDEAS publications team** for their exemplary support. The views expressed in this paper are those of the authors and do not necessarily reflect those of the institutions involved. Final responsibility for the content rests with the authors.

The **Democratic Resilience in a New Age of War (DRNAW)** programme is a three-year, multidisciplinary initiative supporting democracies amid escalating drone-enabled warfare and hybrid conflict. Ukraine is both a core partner and a hub for operational learning and knowledge exchange. Leveraging LSE's global expertise, direct Ukrainian partnerships, and practitioner engagement, the programme delivers real-world solutions for democratic resilience against accelerating authoritarian threats and technological disruption.

September 2026

Editor: **Stuart Austin**
Design, Typeset and Layout: **Indira Endaya**
Cover Design: The cover artwork for this report was generated using ChatGPT (DALL·E) by OpenAI, based on prompts developed by the Publications Designer and subsequently refined for publication.

DOI: 10.21953/researchonline.lse.ac.uk.00140923.

Contents

Contents	
The Authors	2
Acknowledgements	2
Contents	3
Abstract:	4
Section 1. Introduction	5
Section 2. Conceptualising adaptive defence governance	6
2.1. Adaptive governance in public policy	6
2.2. Adaptation in defence governance	7
2.3. Adaptive defence governance	8
Section 3. How Ukraine's adaptive defence governance model emerged	9
3.1. Systemic shock and breakdown (2014–2015)	10
3.2. Phase 1: Incremental adaptation and re-anchoring (2015–2021)	10
3.3. Phase 2: Wartime acceleration and reconfiguration (2022-2023)	12
3.4. Phase 3: Maturation amid ongoing challenges (2024 onwards)	13
Section 4. How Ukraine's wartime adaptive defence governance works	14
4.1. Adaptive institutions	15
4.2. Distributed innovation and learning	18
4.3. Networked state-society co-production	20
4.4. Strategic anchoring	21
Section 5. Why Ukraine's adaptive experience matters for Europe's defence readiness	23
5.1. Ukraine as an early European stress test of adaptive defence governance	24
5.2. Designing adaptive capacity in peacetime	25
Section 6. Policy recommendations	27
Bibliography	29
Interviews	33

From Ukraine's Wartime Adaptation to Europe's Defence Readiness: Learning from Ukraine's Adaptive Governance in the Defence Sector

Abstract:

Europe's defence challenge is more than drones and budgets; it is about whether the defence institutions of states and their wider security apparatuses can keep pace with modern warfare and increasing hybrid threats. This paper uses Ukraine's wartime experience to develop a holistic concept of adaptive defence governance and to test its implications for a largely peacetime Europe. It offers a working definition built around four dimensions – adaptive institutions, distributed innovation and learning, networked state–society co-production, and strategic anchoring – and traces how these developed across Ukraine's defence sector after 2014 as state, military, industrial and societal actors jointly shaped adaptive capacity. Taken together, these dimensions show that adaptive defence governance can transform wartime shocks into more enduring national resilience through a democratically anchored defence ecosystem that systematically mobilises and coordinates state and societal capabilities. The analysis shows how high-intensity war exposes rigidities and unlocks capacities that peacetime reform rarely reaches, pushing Ukraine to adapt its defence governance under continuous pressure rather than through short-lived emergency fixes. It argues that Ukraine's experience constitutes an early European stress test of adaptive defence governance and a usable model for designing peacetime institutional tempo across core defence-management functions. It draws out practical lessons for European allies on how to build latent and active adaptive capacities before crisis hits.

Section 1. Introduction

In a world of rapid technological change and rising geopolitical tension, governments are under pressure to accelerate how they respond to security challenges. For Europe, the weakening of the defensive alliance with the United States and Russia's ongoing war of aggression against Ukraine, together with its campaign of 'hybrid' activities such as cyberattacks, sabotage and drone harassment, has created a markedly harsher and more volatile threat environment. In this context, Europe faces a defence-readiness problem: not only whether it has sufficient forces and the right equipment, but whether its institutions can adjust mandates, processes and coordination mechanisms under pressure. Traditional defence governance is typically hierarchical, slow and siloed and therefore sits uneasily in an era in which defence needs change quickly and unpredictably.

We argue that adaptive governance is a missing link in current debates on European defence readiness. Ukraine's trajectory since 2014 – widespread reforms, digitalisation, decentralisation and wartime institutional reconfiguration – is policy-relevant for Europe, not just exceptional to its own circumstances. Ukraine's wartime performance cannot be explained by military innovation alone; it rests on a broader governance model in which political leaders, public administrations, industry and society adjust their rules, capacities and coordination mechanisms in response to escalating pressure. In this sense, Ukraine functions as an early European stress test of adaptive governance in the defence sector.

> "In many countries, opportunities to bolster defence are missed because governments cannot mobilise capabilities beyond historic bureaucratic hierarchies. The result is predictable innovation at the margins, stagnation at the core."

In Ukraine's case, this adaptation has been driven in part by the urgency of fighting a large-scale, protracted war, but has evolved beyond short-term crisis improvisation towards a more routinised way of governing defence under sustained pressure. As such, Ukraine demonstrates how democracies can translate adaptive governance into operational capability and durable national resilience during wartime. This model emerged incrementally from 2015, accelerated after 2022, and now offers practical insights for NATO and EU states seeking to improve defence readiness through more flexible, feedback-driven governance that remains democratically anchored.

The paper develops a working concept of adaptive defence governance, traces how Ukraine's model evolved after 2014 and analyses how it operates across key institutional and state–society arrangements during high-intensity war. The analysis concentrates on illustrative initiatives and arrangements, chosen for what they reveal about Ukraine's adaptive defence governance rather than attempting an exhaustive institutional inventory. In doing so, it brings together debates on adaptive governance, security-sector reform, wartime transformation and European defence readiness into a single analytic framework. While Ukraine's model should not be mechanically replicated, it offers pragmatic examples of how European states can strengthen latent capacities and build active ones that can be used under stress to sustain defence effectiveness.

Adaptive governance versus innovation

Adaptive governance refers to institutional capacities for continuous learning, coordination and adjustment under conditions of uncertainty, including but not limited to the development and diffusion of novel solutions. By contrast, innovation and related ecosystems are specific constellations of actors and instruments oriented toward generating new technologies and practices; they constitute one subset of the broader adaptive approach rather than an alternative to it.

In this report, a policy or governance action is treated as adaptive governance when it is designed to learn and adjust over time, keeps change within clear legal and strategic rules, brings a wider mix of actors into core governance-related work and turns short-term fixes into lasting improvements in how the system copes with uncertainty. The analysis applies this understanding to defence governance through four interrelated dimensions: adaptive institutions, distributed innovation and learning, networked state–society co-production and strategic anchoring.

Section 2. Conceptualising adaptive defence governance

Adaptive governance is a relatively recent construct in public policy discourses and has rarely been applied to the defence sector. In response, this report sets out an initial conceptualisation of adaptive defence governance grounded in evidence from Ukraine's wartime experience. This section introduces the core definitions and concepts that underpin the analysis in subsequent sections that examine Ukraine's wartime institutions and practices.

2.1. Adaptive governance in public policy

Adaptive governance emerged over the 1990s and 2000s as scholars and practitioners sought better ways to govern complex, fast-changing sectors where traditional linear policy processes struggled to cope (Rijke *et al.*, 2012). It gained traction as governments confronted repeated shocks and deep uncertainty. It is now a prominent, if still loosely defined, framework in public policy debates about how states can remain effective and legitimate under volatile conditions (Oxford Research Encyclopaedia of Climate Science, 2017; Duit and Galaz, 2008). This report builds on the following definition:

> *Adaptive governance is a mode of governing in which public institutions, rules and decision processes are deliberately designed to learn and adjust over time through decentralised decision-making, broad stakeholder participation and continuous feedback, while maintaining basic requirements of stability, legality and accountability. In most sectors, this involves not only government bodies but also wider networks of social and economic actors who participate in decision making and implementation.*
>
> (Karpouzoglou *et al.*, 2016)

In public policy terms, this mode of governing is valued for what it enables (Janssen and van der Voort, 2016). By structuring institutions and decision processes around decentralised initiative, wider participation and continuous feedback, adaptive governance aims to build a governance system's capacity to cope with uncertainty and complexity while still delivering on core public obligations (Chaffin, Gosnell and Cosens, 2014). The following sections apply this general idea of adaptive governance to the defence sector, where adaptation depends on how state, military, industrial and societal actors are configured into a coherent ecosystem.

2.2. Adaptation in defence governance

In policy discourses, defence governance refers to the structures, processes and oversight arrangements through which states direct and control their defence institutions, from ministries and armed forces to intelligence agencies and audit bodies (Ratchev, 2009). We treat Ukraine's wartime defence as a critical test case of adaptive governance under conditions of high-intensity, protracted war.[1] Rather than viewing, for instance, digital tools, new organisational forms and experimental regulations as isolated innovations, we analyse them as components of a wider defence governance approach that must adjust rapidly but remain democratically and legally anchored.

Building on this understanding of defence governance, we define the wider defence sector as the integrated set of military, civilian and industrial institutions that generate, govern and sustain the armed defence effort (Boucher, 2009). Thinking in terms of adaptive governance implies that this sector can be conceived not as a single hierarchy or fixed constellation, but as an ecosystem of actors whose interactions and feedback shape how defence is organised and delivered. In Ukraine, particularly during wartime, this ecosystem encompasses the armed forces, civilian ministries and agencies, and a range of oversight bodies. It also includes defence and technology firms in both public and private ownership, as well as NGOs, volunteer initiatives, think tanks and other civil-society organisations.[2]

In many countries, opportunities to bolster defence are missed because governments cannot mobilise capabilities beyond historic bureaucratic hierarchies. The result is predictable innovation at the margins, stagnation at the core. Adaptive governance addresses this problem by diagnosing and mobilising internal and external capabilities, decentralising some decision-making and creating feedback loops into higher-level decisions. In Ukraine, defence governance is adaptive not simply because it uses new technologies, but because it institutionalises bottom-up feedback and rapid adjustment, while generally doing so with formal accountability.

It is important, finally, to distinguish innovation from adaptive governance. Innovation concerns specific products, processes and technologies; adaptive governance concerns the wider systems that enable them: how mandates are allocated, how coordination works, how information flows and how learning is translated into revised rules and practices. In the Ukrainian case, adaptive defence governance is visible in how state and non-state actors are reconfigured to enable continuous learning and adjustment, sometimes manifesting as technological innovation, while maintaining democratic legitimacy and control.

1 A recent analysis, (Phachulia, 2026), argues that Ukraine represents an 'emerging model of adaptive statehood', in which modern warfare depends on 'the resilience of interconnected digital, industrial, and institutional systems'. Our paper focuses more narrowly on what the authors term adaptive defence governance and sector-specific institutional arrangements

2 Within Ukrainian policy analysis, 'drone ecosystems' – linking military units, public agencies, private firms, volunteer networks and researchers – have reframed defence as a networked ecosystem rather than a closed hierarchy. For instance, see Matlack, Schwartz and Gill (2025).

2.3. Adaptive defence governance

Existing analyses of Ukraine's wartime adaptation primarily concentrate on military innovation and operational learning or on adaptive governance and digitalisation in civilian sectors.[3] Defence governance is itself rarely examined as a cross-sector ecosystem or linked systematically to debates on European defence readiness. Given this, we use adaptive defence governance to refer to a mode of governing in which the defence sector's institutions, rules and practices can be reconfigured quickly under extreme uncertainty, while remaining strategically directed, legally grounded and democratically controlled.

Adaptive defence governance is therefore a missing link between classic security-sector reform and current readiness debates in Europe. The former focuses on legality, civilian control and effectiveness, while the latter emphasises spending, capabilities and force posture. Adaptive defence governance adds the capacity to reconfigure rules, roles and relationships in response to shocks in ways that remain legitimate and accountable. Crucially, this adaptive capacity can be developed in peacetime, not only improvised under fire.

In contrast to crisis improvisation, which relies on temporary workarounds and exceptional authority, adaptive defence governance denotes a deliberately designed capacity to adjust rules, roles and relationships in ways that can be repeated, scaled and held to account. It means there is a clear, demonstrable capacity for adaptation across defence governance, visible in how key parts of the system respond to new conditions, while institutions themselves remain recognisable. Determining how far Ukraine's defence governance has moved towards a demonstrable adaptive capacity, and what that suggests for European states, is one of the key analytical questions this report explores.

In what follows, we highlight four interrelated elements of this mode of governance, derived from Ukraine's experience but framed in general terms, and examine how their wartime expression in Ukraine can yield analytical insights for predominantly peacetime European contexts. As such, these elements are not unique to wartime, but war can bring them into sharper relief than peacetime reform processes typically allow.

1. **Adaptive state institutions:** the structures, rules and operating routines of the defence sector – including organisations, legal frameworks and key policies and procedures – that can be reconfigured at speed without collapsing into arbitrariness or loss of state authority.

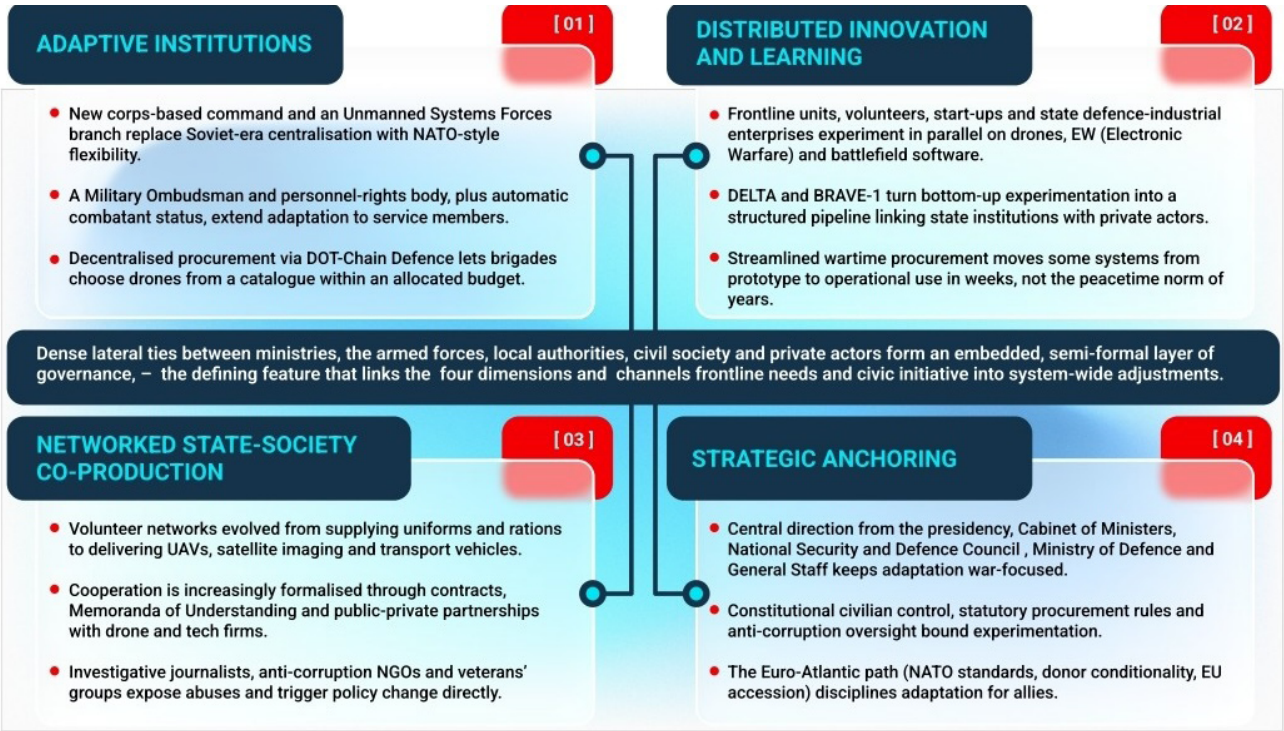
2. **Distributed innovation and learning***:* the capacity for multiple actors to test solutions in parallel within clear legal and strategic parameters, with mechanisms to feed results back into central decision-making and to accelerate and scale successful approaches.

3. **Networked state–society co-production:** the systematic involvement of civil society, private firms and local authorities in core defence functions rather than only in auxiliary support roles.

4. **Strategic anchoring:** political leadership, alliance commitments, and constitutional and statutory norms that give overall direction to adaptation, define lines of authority, and set enforceable boundaries on what is acceptable, even in wartime.

3 See Gustafsson (2025) on adaptive governance, and Diia and Yelagin (2025) on digital adaptability in social protection.

Figure 1: Four interrelated elements of Adaptive Defence Governance



Section 3. How Ukraine's adaptive defence governance model emerged

> *One of the biggest achievements that we had were the horizontal links … between business, government, civil society, and the military.*
>
> (Nayyem, interview, 2026).

Ukraine's wartime effectiveness rests on an accumulated mode of governance in which repeated shocks – above all Russia's military invasions but also, for instance, the COVID-19 pandemic – exposed a broader pattern of state fragility, most visible in institutional weaknesses, including corruption, and operational gaps in the defence sector. Russia's sustained use of hybrid activities, including cyber-attacks, disinformation and the mobilisation of criminal elements, further deepened this fragility. These shocks generated reform pressure and gradually produced new combinations of flexibility and control (OECD, 2022a). Against this backdrop, a set of adaptive governance dynamics emerged through successive phases of crisis, reform and escalation after 2014, which we treat as the foundations of Ukraine's adaptive defence governance model.

These dynamics show that this mode of governance did not arise from state reform alone, but also from the progressive reorganisation of relations between state institutions and a wider field of civic, local and industrial actors. Seen from this perspective, adaptive governance is best understood not as a wartime shortcut around democratic governance, but as a cumulative method for preserving state effectiveness and democratic legitimacy under escalating military pressure. Section 3 therefore offers a contextualised narrative of what Ukraine confronted and how its wider governance situation changed over time by tracing a story of breakdown, incremental adjustment and wartime acceleration.

3.1. Systemic shock and breakdown (2014–2015)

2014–2015 marked a systemic shock to Ukraine's statehood that exposed how fragile existing defence governance arrangements were. Russia's illegal annexation of the Autonomous Republic of Crimea and the partial occupation of Donetsk and Luhansk regions revealed deep institutional vulnerabilities and triggered the first improvised responses by state and society. Ukraine's path towards adaptation began as these events showed how heavily legacy governance systems relied on highly centralised, fragile approaches and, in some cases, pushed them towards outright collapse. Core administrative, security and service-delivery functions came under severe strain, and mobilisation systems, logistics chains and command arrangements stalled or fragmented, so volunteerism and civic initiative often substituted for formal state modalities.

This breakdown unfolded against the backdrop of the 'Revolution of Dignity' (2013–14), which had made visible deep public frustration with corrupt, autocratic control over the state, especially its security institutions. The visible weakness of the state in organising a robust defence to Russian invasion confirmed these doubts and showed that capacity and accountability arrangements were no longer fit for purpose (Oliker *et al*., 2016). This crisis of 2014–15 was therefore not only an operational breakdown but also an accountability and oversight shock (Minakov, 2016). Decisions came too slowly and were weakly operationalised, leaving the state unable to support rapid mobilisation and crisis response at scale. Many urgent functions had to be sustained through improvisation that operated around, rather than through, the state. Ukraine did not just lack capacity; it lacked adequate pathways to use the capacity society was willing to offer (Beliakova and Detzner, 2023).

Hence, from this crisis two strategic imperatives emerged. First, the state could no longer rely on rigid, inherited institutions and had to learn to reconfigure them at speed. Second, it had to find new ways to demonstrate competence, exert control and rebuild defence capacity under crisis conditions. Yet even in this phase of breakdown, the first governance adjustments that foreshadowed a more adaptive approach began to appear. Authorities started to formalise some volunteer battalions within the chain of command, experiment with emergency procurement measures, and work with external partners on basic security-sector reforms (Oliker *et al*., 2016). These were early yet incomplete steps that shifted the state from merely surviving the shock towards reconfiguring institutions and relationships in response to it.

3.2. Phase 1: Incremental adaptation and re-anchoring (2015–2021)

> *I think this [adaptation mindset] really started to pick up from 2015, because many government authorities began to change, and the barriers to entry for people with fresh ideas decreased.*
>
> (Dolintse, interview, 2024)

The years between the first Russian invasion and the full-scale assault of 2022 were shaped by an extended period of unsettled politics and unfinished war: a low-intensity but persistent war in the east, a contested but burgeoning domestic reform agenda, and a gradual deepening of Euro-Atlantic ties (Sullivan, 2022). Critically, Ukrainian public sentiment started to solidify around a national orientation towards Europe and the West more generally. Within this uncertain environment, the state was under simultaneous pressure to rebuild basic capacities, deliver visible reforms, maintain political legitimacy through demonstrable competence, and contain further Russian advances.

It is in this context that distinctive adaptive responses and governance traits first become visible. They did not emerge because all reforms were adaptive in intent or form, but because a sustained effort developed to turn crisis improvisation into a politically mandated reform project, giving the state more flexible and creative ways of operating. Successive competitive elections brought to power governments with stronger popular mandates and clearer reform agendas, allowing them to begin moving beyond *ad hoc* responses toward a more deliberate restructuring of state capacity (Tsvetkova and Polityuk, 2019).

Rather than a single, coherent reform agenda, this period saw a range of initiatives that collectively pushed the state toward more adaptive ways of governing. In the civilian sphere, broader reforms premised on flexibility and wider participation – digital transformation, institutional and civil service reform, anti-corruption measures, decentralisation, and new patterns of state–civil society cooperation – slowly made the Ukrainian state more distributed, more data-driven and more capable of operating under stress. In the defence sector, change was more cautious and uneven, but some of the same adaptive logics began to appear; innovations from 2014–2015 were partially scaled and normalised as volunteer units were integrated into formal chains of command, emergency procurement procedures informed more predictable rules and open-data systems, and NATO-linked reforms started to reshape doctrine, training and force planning.

Just as importantly, this period was one of re-anchoring accountability, including some tentative efforts in the defence sector.[4] Reforms in procurement, digital public services and public oversight did not simply make the state faster; they also aimed to make it more transparent and accountable to citizens and external partners – for example through open tender platforms, digitised registers and stronger anti-corruption institutions.[5] New audit trails, more transparent digital procedures, stronger monitoring mechanisms and a more regularised role for civil society and watchdog actors helped reduce the gap between emergency responsiveness and democratic control, even if sensitive areas such as defence procurement remained only partially transparent (NAKO, 2018). Defence planning, programming and budgeting remained the least adaptive part of the system, and the Ministry of Defence first introduced PPBE-style (Planning, Programming, Budgeting and Execution) reforms in 2021 to begin addressing that rigidity.[6]

These changes began to turn adaptation from ad hoc workarounds into a more institutionalised mode of governing, in which mechanisms first used in crisis – digital tools, volunteer formations, emergency procurement – were incrementally converted into more durable structures and procedures. At the same time, some underlying state fragilities, especially systemic corruption, persisted as a major risk for Ukraine (Stockman, 2023). Over time, these reform years gradually inculcated more adaptive institutions, distributed innovation, and networked state–society co-production that later formed the core of Ukraine's wartime defence governance, while also outlining the strategic anchoring and accountability arrangements explored in greater depth in later sections.

4 One illustrative example is the clarification and separation of roles between the Ministry of Defence and the Armed Forces/General Staff: reforms from 2016 to 2020 recast the ministry as a civilian policy-making and oversight body, while limiting the Armed Forces and General Staff to operational command functions (see 'Ukraine Reform Tracker: Governance Reforms').

5 Ukraine's electronic public procurement system, *Prozorro*, emerged from a volunteer–government–business coalition after the Revolution of Dignity and became mandatory nationwide from mid-2016 under a new e-procurement law.

6 PPBE is a cyclical defence management framework that links long-term capability planning to multi-year programming, annual budgeting and expenditure review.

3.3. Phase 2: Wartime acceleration and reconfiguration (2022-2023)

> *It's not only about governance at the government level – a lot of good things came from the very, very bottom, from soldiers themselves, because a lot of gifted people went to the army, and some of them decided to tie a grenade to a civil drone, and that's how it began.*
>
> (Deynega, interview, 2026)

Russia's full-scale invasion in 2022 pushed Ukraine's governance system into a faster, more dynamic mode of decision-making, aimed both at repelling the military offensive and at shifting governance, industry and social protection onto a nationwide wartime footing.[7] Reforms and practices developed in civilian domains after 2015 helped core functions of government, finance and industry to continue operating under attack rather than buckling under systemic shock (OECD, 2025). They also provided the institutional and digital foundations for defence governance that was more decentralised, information-rich and able to adjust under sustained pressure (Ingram and Vora, 2024).

In the first months of 2022, Ukraine fought a sharp, high-stakes campaign to preserve its sovereignty. Civil networks, volunteer formations and improvised logistics were crucial in absorbing the initial Russian assault (Harding, 2022). As they had done since 2014, but at a greater scale, state structures and informal initiatives often operated side by side, with volunteers providing equipment, transport and coordination where formal channels were too slow or fragmented to cope.[8]

As Russia's onslaught on Kyiv and the north receded, the wider Ukrainian state apparatus began to stabilise and organise wartime responses on a more durable basis, drawing in particular on earlier decentralisation and digitalisation reforms (OECD, 2022b). By late-2022 and through 2023, major defence initiatives were increasingly systematised, such as the cloud-based situational-awareness and battlefield management tool DELTA and defence-innovation initiatives like BRAVE1, while earlier reforms such as the *Oberih* military registry were further refined to support mobilisation.[9] These changes did not eliminate improvisation but gave decision-making and mobilisation a clearer information base and more predictable coordination.

In this context, Ukraine's wartime state, including its adaptive defence governance, did not emerge from scratch. It was built by stretching partially reformed institutions and advancing practices that were already more digital and more decentralised, and by deepening practical state–society cooperation around defence tasks. Ministries and the armed forces remained central but increasingly worked with a wider defence ecosystem of private technology firms, drone producers, and volunteer logistics to develop and scale new tools, from strike drones to battlefield apps and data platforms.[10]

---

7 As one official recalled: "… in 2022, when the active phase began, the government held meetings even twice a day. If before it was once a week… there were days when the government made decisions twice a day to respond to the challenges" (Fomenko, interview, 2025).

8 As Oleksiy Honcharuk noted in an interview, Ukrainian society's desire to maintain itself as a democracy was critical: "A great many people decided to fight – not because government gave the order, but because Ukraine is a democracy, and they were defending their own freedom."

9 By late 2022 and through 2023, several key defence tools – DELTA, the BRAVE-1 defence-innovation cluster, and the *Oberih* unified electronic register – were scaled and integrated into routine practice (Ministry of Economy of Ukraine, 2023; Ministry of Defence of Ukraine, 2024a).

10 As explained by Vitaliy Deynega, inputs provided by civil society and increasingly used by field units is an essential dynamic: "At the soldier level, every unit takes the drones it's given by the Ministry of Defence, but they make changes themselves to make them more effective. When enough units make the same change, it can become institutionalised– fibre-optics, for example. Once fibre-optic drones had proven their worth, the Ministry of Defence started supplying fibre-optic drones to units directly... That's a very high level of adaptation, because units themselves choose what gets provided to them" (Interview, 2026).

Over 2022–2023, this mix of formal institutions and improvised initiatives began to settle into more routine patterns of collaboration, at times catalysed by government scandals, with clearer channels for contracting, data-sharing and operational coordination. Accountability in this phase of wartime escalation, that of resisting full-scale invasion, was recalibrated rather than suspended. More transparent procurement mechanisms, including *Prozorro* (except for defence goods and services for security reasons), continued to be used. Despite these measures, corruption cases have persisted, posing an ongoing challenge.

3.4. Phase 3: Maturation amid ongoing challenges (2024 onwards)

By 2024, Ukraine's wartime governance shifted towards more stabilised routines and longer-term planning, marking a phase in which adaptive defence governance moved from emergent response towards a more generalised logic across the defence sector. Preserving this adaptive capacity is now a strategic necessity. The core traits first developed in civilian domains after 2015 are now more clearly embedded across defence institutions.[11] In this sense, Phase 3 deepens adaptive dynamics first observed in civilian governance and accelerated in early wartime responses, extending them across defence institutions rather than leaving them at the periphery.

Under conditions of protracted war, the central question is no longer whether the armed forces have sufficient equipment or funding, but whether the defence sector can continuously adjust its rules, structures and relationships in ways that sustain manpower, tech innovation and political legitimacy over time. The risk of falling behind Russian advances in technology and manpower turns this need for continuous adaptation into persistent pressure across Ukraine's governance systems (Hakmeh, 2025). Governance arrangements for mobilisation and personnel management must absorb losses and mounting social demands without breaking. Procurement and industrial policy must incorporate new technologies and production models at pace. Coordination with local authorities, civil society and defence industries must remain flexible yet legally bound.

By mid-2026, the maturation of adaptive defence governance is visible in the defence sector's improved ability to absorb shocks and coordinate change. This maturation is reflected in more routine patterns of decision-making and collaboration that channel wartime adaptation through regular, repeatable procedures rather than exceptional workarounds. Digitalisation and industrial innovation are central. For example, complex systems such as battlefield management, administrative services and the digital layer of mobilisation increasingly operate through more direct 'policy-to-user' channels that accelerate implementation, feedback and adjustment. BRAVE-1, DELTA and Army+ exemplify this pattern, not as finished systems but as evolving platforms that can be refined, extended and re-configured, allowing adaptive approaches themselves to remain dynamic and flexible rather than locked into a single design.[12]

These advances have not resolved deeper governance challenges. Wartime mobilisation remains politically and socially contentious, with repeated scandals in recruitment offices and persistent incentives to evade service undermining perceptions of fairness (Helme, 2026). Efforts to clean up defence procurement have continued to expose large-scale embezzlement – from food and fuel to, more recently, drone contracts – reminding domestic and external audiences that adaptive

11 One illustration is Army+, a state mobile app created by Ukraine's Ministry of Defence as a '*Diia*-style' digital assistant for service personnel. It lets soldiers file electronic reports, manage routine service requests and access basic administrative services from their phones (Ministry of Defence of Ukraine, 2024b).

12 DELTA's origins exemplify this. As Oleksiy Honcharuk noted: "Delta was created by the Center of Innovation at the Ministry of Defence, itself established as a result of sustained pressure from the NGO Aerorozvidka." For a detailed review of DELTA's origins, see Soesanto (2024).

> "Under prolonged strain, volunteer networks show signs of exhaustion, and the expectation that civil society can indefinitely substitute for state capacity has itself become a source of tension."

mechanisms coexist with entrenched corruption risks. Under prolonged strain, volunteer networks show signs of exhaustion, and the expectation that civil society can indefinitely substitute for state capacity has itself become a source of tension. Political and command-level tensions have also surfaced over the direction and pace of adaptation itself; pressure to rapidly push technology forward, together with the wider systems and reorganisation this requires, has sat uneasily with a military leadership that is institutionally more reserved and prioritises sufficient consistency to accomplish operational objectives.

Phase 3 therefore marks a qualified maturation of adaptive defence governance relative to earlier phases: the defence sector has absorbed and generalised adaptive logics into a more structured, sector-wide capacity that is better able to manage a long war while seeking to keep manpower, innovation and democratic legitimacy in balance. Yet this capacity remains uneven and incomplete, and significant challenges persist around corruption, mobilisation and social consent that will shape whether Ukraine can sustain adaptation over the longer term.

Section 4. How Ukraine's wartime adaptive defence governance works

The previous section showed how wartime pressures and earlier reforms in Ukraine generated a set of adaptive governance dynamics, including in the defence sector. This section builds on that phased trajectory and details how those dynamics have begun to cohere into a distinct, if uneven, Ukrainian model of adaptive defence governance and how it operates in practice. It examines how institutions, information flows, procedures and coordination have been reshaped so that defence governance has a demonstrable adaptive capacity to adjust under fire while remaining within legal and democratic constraints. It does not treat Ukraine as a complete or perfect model, but as a case with sufficiently documented practices to examine how adaptive defence governance works in wartime.

The analysis is organised around the four dimensions introduced in Section 2 and traces them through concrete wartime practices. It looks at how adaptive institutions and legal frameworks are reconfigured at speed, how distributed innovation and learning are dispersed across frontline units and defence-tech ecosystems, how networked state–society co-production is built into core defence tasks, and how strategic anchoring gives direction to adaptation while preserving accountability despite accelerated decision-making. Rather than attempting a complete mapping of Ukraine's wartime defence governance, the section uses illustrative practices that most clearly reveal how adaptive defence governance functions.

Beyond these four dimensions, a defining cross-cutting feature of Ukraine's configuration is the depth of horizontal collaboration that links them, and specifically the empowered role of civic actors in catalysing innovation for the wider national defence effort.[13] Adaptive institutions, innovation processes, co-production arrangements and anchoring mechanisms are linked through dense lateral ties between ministries, armed forces, local authorities, civil society and private actors. In practice, these horizontal networks and collaborative relationships form an embedded, semi-formal layer of

13 This bottom-up dynamic emerged as a consistent theme across interviews for this study. As Oleksiy Honcharuk noted: "I think that the role of grassroots initiatives is a key difference between what I have seen in Ukraine and what I have seen in many other countries. The critical and main difference is the number of grassroots initiatives from businesses, from civil societies, from different communities."

defence governance that cuts across the four dimensions above. They are interwoven with the official hierarchy and can translate frontline needs, digital capabilities and societal initiative into timelier, system-wide adjustments.[14]

4.1. Adaptive institutions

> *One of the biggest lessons we can draw from the war is based on Ukraine's army's remarkable ability to adapt successfully while resisting one of the world's largest armies.*
> (Borrell, 2023)

Ukraine's wartime defence governance rests on institutions and legal frameworks that can be reconfigured at speed without collapsing into arbitrariness or losing civilian control. In this context, adaptive institutions are defence organisations, rules and operating routines that can be stretched, recombined and temporarily augmented to meet wartime demands, while remaining recognisably part of the state and subject to democratic oversight. This capacity is visible in current institutional configurations across command, personnel governance, procurement and digital administration (Bondar, 2025).

The armed forces have moved towards a more modular command system organised around corps and have created a dedicated Unmanned Systems Forces branch to reflect the growing centrality of drones and autonomous platforms to contemporary warfare.[15] These changes institutionalise a shift away from rigid, Soviet-style centralisation towards a more flexible NATO-style command architecture (Parfonov, 2025). Training has adapted in parallel, with instruction increasingly shaped by frontline experience and delivered through updated programmes and digital courses that keep pace with rapidly changing battlefield conditions.[16] These developments illustrate how institutional form is being adjusted in response to operational pressures rather than treated as fixed.

Adaptation is also visible in institutions created to respond to wartime pressures on personnel and military administration. To strengthen the protection of rights and social guarantees for service personnel, Ukraine has established dedicated bodies for complaints and oversight over issues such as pay, benefits and mobilisation practices. These included both a Military Ombudsman position and a military personnel rights protection department.[17] These additions show that institutional adaptation is not confined to battlefield effectiveness alone but also extends to the management of the force's internal legitimacy — that is, whether service personnel experience the system governing their rights, status and obligations as fair and lawful. For example, combatant status is now assigned automatically to those who serve in areas of active hostilities, removing a significant documentary burden from service personnel.[18]

---

14 This embedded layer is a governance 'hive mind': a semi-formal web in which ministries, commands, local authorities, volunteers, defence-tech communities and other civic actors share information and coordinate decisions laterally, rather than only through formal chains of command (Dorogan, interview, 2026).

15 As of December 2025, sixteen corps had been established within Ukraine's defence forces, reflecting the shift to a corps-based command structure. In June 2024, a separate Unmanned Systems Forces branch was created in recognition of the centrality of drones and autonomous platforms to contemporary warfare.

16 Since 2022, Ukraine has progressively standardised and extended basic general military training for mobilised personnel, lengthening the initial course in training centres beyond the pre-war 30-day model and tightening rules against sending untrained recruits straight to the front (The New Voice of Ukraine, 2024).

17 The military personnel rights protection department was established in April 2024, followed in January 2025 by the creation of a military ombudsman position.

18 Automatic assignment of combatant status was introduced in September 2024, which established a procedure for granting combatant status automatically without requiring the individual to submit extensive supporting documentation.

Small legal tweaks, big adaptation

Some of the most consequential shifts in Ukraine's wartime adaptive defence governance have come from small regulatory changes rather than major institutional overhauls. Two examples are illustrative. First, adjustments to profit-margin rules for domestic defence firms have made it more viable for private producers (especially SMEs) to invest in rapid development and scaling of systems such as drones and electronic-warfare tools, while keeping contracts within auditable legal frameworks. Second, revised regulations allowing frontline units to procure equipment directly within defined financial and legal limits have shortened supply chains and enabled faster adoption of combat-proven technologies, while also spurring greater innovation by shortening feedback loops between users and producers. Together, such changes show how narrowly targeted legal tweaks can unlock existing capacities and support wider adaptive initiatives in procurement and innovation under wartime conditions.

Logistics and procurement have been reorganised to accelerate supply, reduce fragmentation and encourage innovation. For example, drone and other equipment procurement is increasingly routed through the DOT-Chain Defence marketplace, with contracted volumes rising sharply in 2025–26.[19] Combat brigades now choose drones from a catalogue within an allocated budget, while the Defence Procurement Agency manages contracting, payment and logistics. This represents a decentralised model of decision-making inside procurement that illustrates institutional adaptiveness.[20]

More broadly, wartime rule-making has supported this institutional adaptation by simplifying procurement procedures for key categories such as unmanned systems and electronic warfare equipment and by accelerating codification and supply processes for defence products.[21] Ukraine's logistics system has been progressively reconfigured from centralised depots and predictable routes into a more decentralised, mobile distribution network. The state digital platform *Shliakh* ('Way'), launched in 2022 at the onset of full-scale invasion, accelerated border crossings and permit processing for truck drivers delivering cargo into Ukraine, supporting more flexible wartime road logistics.

The Ministry of Defence has also used specialised project teams, for instance around systems such as DELTA, Army+, Reserve+ and *Oberih*, to concentrate authority on critical capability areas and to link technical development directly to organisational routines and legal responsibilities. This kind of augmentation suggests that adaptation often occurs not through wholesale redesign but through the addition, recombination and later removal of specific institutional components.[22]

---

19 The DOT-Chain Defence marketplace, run by Ukraine's Defence Procurement Agency, allows frontline units to order drones, weapons and other equipment directly through a secure digital platform, with the agency handling contracts, payments and logistics. (Miroshnychenko and Volynskyi, 2026).

20 In July 2022, the Defence Procurement Agency was established and, from early 2026, merged with the State Rear Operator. The DOT-Chain system was introduced to manage procurement needs.

21 In 2023, simplified rules for procurement of domestically produced unmanned systems, electronic warfare equipment and technical reconnaissance countermeasures.

22 Conversely, there are cautionary examples, notably the liquidation of the Ministry of Strategic Industries in July 2025 and the transfer of its functions to the Ministry of Defence, undoing the buyer–regulator separation built since 2023. Adaptive removal is only genuinely adaptive when the functional redesign is coherent, so this case is a reminder that recombination is not automatically positive.

Legal frameworks have likewise been opened for experimentation within defined statutory limits while retaining a clear statutory core.[23] Wartime legislation and Cabinet resolutions have authorised exceptional and accelerated procurement procedures, simplified certain budget reallocations and expanded emergency powers in areas such as mobilisation. These derogations interact with civilian innovations such as *ProZorro*, *DoZorro* and other e-tender platforms, open-data laws and anti-corruption statutes, so that defence procurement still passes through digital systems and ex post publication.[24]

Constitutional provisions on civilian control and parliamentary oversight remain in force, with specialised committees and investigative commissions scrutinising high-profile scandals in defence procurement and mobilisation policy. These arrangements differ from one-off crisis fixes in that they are embedded in statutory frameworks and organisational routines and can be scaled or withdrawn without abandoning legality or civilian control. This is clearest where wartime innovations have been written into law rather than left as emergency expedients. By example, the Reserve+ and Army+ systems, though driven by wartime imperatives, have been given a statutory basis and are intended to remain valid and usable after the war, embedding what was learned under pressure into durable, legally grounded practice (Arnold, Roller and Zhyvogliad, 2026).

Digitalisation has re-wired how institutions operate and coordinate across both civilian and defence domains. Building on earlier experiences with civilian platforms, digital defence systems digitise registries, mobilisation records, personnel management and battlefield information, while logistics and payroll systems connect the General Staff, the Ministry of Defence, the Ministry of Economy and local administrations (Berladyniuk, 2026). These systems are being designed and progressively rolled out on a pan-services basis, creating more unified digital architectures for the Armed Forces of Ukraine.

These systems allow mobilisation, benefits administration and inter-agency coordination to continue under bombardment and displacement, and they enable policy decisions to be implemented rapidly through software updates and linked registries rather than slow paper orders. For instance, the Reserve+ system now processes the majority of mobilisation deferments automatically through linked registries, replacing the in-person handling of hundreds of thousands of cases and saving tens of millions of hours of administrative time (Arnold, Roller and Zhyvogliad, 2026). The significance of these systems lies not simply in digitisation itself, but in their capacity to translate policy changes into administrative action at scale through integrated registries and software-based workflows.

Yet adaptive institutions in Ukraine remain uneven and fragile. Some ministries still rely heavily on legacy procedures and paper-based chains that slow reconfiguration and create gaps between formal mandates and wartime practice, particularly at lower administrative and regional levels (Zeldi, 2024). Temporary institutional solutions and experimental legal regulations, while effective, can generate coordination problems, overlapping authorities and staff fatigue, and risk becoming semi-permanent exceptions rather than feeding back into more coherent institutional design.[25] Digitalisation has also advanced faster in high-visibility areas associated with flagship reforms than in back-office

23 Ukraine has increasingly governed defence innovation and procurement through time-limited 'experimental projects' adopted by Cabinet resolution under martial law. For example, simplified procurement procedures for drone and electronic warfare systems were established by Resolution No. 256 of March 2023, and subsequently revised and extended.

24 *DoZorro* is a civil-society platform that analyses contracting data and flags high-risk deals for the authorities (Germashev, 2022).

25 As one interviewee noted, temporary institutional and legal solutions are 'not something you want to get habituated to… use sparingly' (Osadcha, interview 2026).

functions; this has produced a patchwork in which flagship systems coexist with opaque, manually-driven processes that constrain whole-of-government agility and leave room for corruption and bureaucratic blockage.

Taken together, these developments show two things: how far the Ukrainian state has moved from rigid hierarchies rooted in Soviet-era legacies towards a more configurable wartime architecture of organisations, laws and digital systems; and how much that architecture still depends on selectively modernised islands rather than fully-integrated, sector-wide reform. Adaptive institutions now constitute a discernible pattern in Ukraine's defence governance, yet this pattern has not fully consolidated into a coherent, sector-wide system.

4.2. Distributed innovation and learning

> *Civil society is a good R&D source for government. Of course, civil society can't buy you a Gripen or an F-16, but it can deliver a great many smaller innovations.*
>
> (Deynega, interview, 2026)

A second defining dimension of Ukraine's adaptive defence governance is the systematic use of distributed innovation and learning across the defence ecosystem (Phachulia, 2026). Rather than relying on centralised direction alone, wartime adaptation has involved frontline units, volunteer formations, start-ups, state defence-industrial enterprises and state agencies experimenting in parallel in areas such as drone warfare, electronic warfare, battlefield software and defence-tech development.[26] This dispersed pattern is central to how new tools, tactics and organisational forms emerge and are tested under fire.

At the operational layer, artillery batteries, special-forces teams, drone squads and cyber-volunteer groups have adapted cutting-edge tactics and tools. Low-cost drones, tablet-based mapping tools linked to DELTA, encrypted communication channels and unit-level logistics trackers have all been trialled in combat and, where effective, replicated more widely.[27] Elements of 'gamification' are also increasingly present in training and battlefield-support applications, which use game-like interfaces and points or rewards that soldiers and units can spend to procure equipment, helping to accelerate learning and keep personnel engaged under pressure.[28]

To channel these bottom-up adaptations, command structures have standardised some configurations, codified battlefield software usage and integrated successful unit-level innovations into training and doctrine, so that learning generated locally is selectively pulled into the centre rather than remaining purely *ad hoc*. Ukraine has developed near-real-time intelligence fusion mechanisms that bring together civilian and military inputs into shared operational pictures, enabling faster and

26 Examples include *Aerorozvidka,* the Army of Drones, multiple drone manufacturers, BRAVE-1, electronic-warfare collectives, battlefield applications for fire control and logistics, and iterative upgrades to DELTA and other command-and-control tools.

27 Examples include low-cost FPV drones with improvised warheads, tablet-based mapping tools linked to DELTA, encrypted communication channels using commercially available applications and unit-level logistics trackers.

28 Gamification refers to the use of game-design elements such as points, levels, rewards and competitive feedback in non-game contexts like military training, battlefield-support applications and logistics tools (Khomenko, 2025).

more precise decisions at several levels of command.[29] Dedicated lessons-learned and doctrinal units have been tasked with capturing, codifying and disseminating these adaptations, even if their capacity remains uneven and constrained by wartime tempo.[30] Starlink satellite communications have also been a critical enabler, providing resilient, rapidly-deployable connectivity that underpins digital systems and communications networks (Kumari, 2026).

At the industrial and technological layer, dedicated defence-tech programmes link core state institutions with a widening field of private-sector actors.[31] Grant schemes have supported projects ranging from strike drones and loitering munitions to counter-EW tools, autonomous ground vehicles and battlefield sensor networks, while public campaigns have channelled crowd-funding and donor money into procurement and testing of new platforms.[32] This ecosystem is not merely informal; experimentation has increasingly been organised as a structured innovation pipeline rather than left solely to frontline improvisation. The defence sector has institutionalised unusually rapid cycles for testing and deploying new technologies, with streamlined wartime procurement and frontline feedback loops enabling some systems to move from prototype to operational use in weeks or months rather than the multi-year timelines typical of peacetime acquisition processes (Hoagland, 2026).

At the governance layer, digital systems and registries turn experimentation into broader learning. DELTA integrates battlefield inputs into a shared map and is being adapted with AI-based modules to prioritise targets and coordinate swarms. *Oberih*, Army+ and Reserve+ provide real-time visibility on personnel and mobilisation flows, while procurement platforms expose parts of defence purchasing to commercial and public feedback. Analytic units within ministries and the General Staff use these datasets to adjust mobilisation, logistics and industrial policy. The fact that systems such as DELTA are tested for interoperability with allied infrastructure is significant because it shows that wartime experimentation is being pulled towards institutionalisation and external compatibility rather than remaining a purely local workaround.

Distributed innovation and learning nonetheless face constraints. Not all frontline experimentation is captured or evaluated systematically, so some successful practices remain local or are scaled only slowly, while other untested ideas proliferate without clear assessment, creating noise and duplication. The defence-tech ecosystem – centred on BRAVE-1 and an ever-burgeoning number of start-ups – is vibrant but exposed to coordination failures, uneven access to funding and testing environments, and tensions between rapid battlefield needs and slower procedures for certification, export-control and procurement. Data quality, interoperability and analytical capacity remain

29 Platforms such as DELTA integrate data from drones, satellite imagery, ground sensors, unit reports and selected civilian inputs into a common digital map, while chatbots and mobile applications standardise crowd-sourced reporting for urban missile warning and enemy tracking.

30 The Armed Forces have introduced a formal Lessons Learned system based on NATO methodology, coordinated through the General Staff's doctrine and training structures, that standardises how combat experience is collected, analysed and applied (Odessa Journal, 2025).

31 As one interviewee noted: "One of the biggest reforms that started in Ukraine after 2022 was in the defence-tech sector. In 2023–2024, our government simplified the legislative framework for defence-tech, opening opportunities for many small and medium-sized businesses. Since 2023, the number of private defence-tech companies in Ukraine has grown from around 100–200 to as many as 800, and perhaps closer to 1,000" (Dolintse, 2026).

32 BRAVE-1 is a state defence-tech cluster that has awarded over 540 grants worth about UAH 2.2 billion (around US$50–57 million) and now works with more than 1,500 companies across roughly 3,600 defence-tech developments (Hubina, 2025).

inconsistent across institutions, limiting the extent to which information flows support rigorous learning rather than reproducing existing biases or fragmented decision-making.[33]

Taken together, this dimension shows how wartime Ukraine has turned diverse actors and data systems into a continuous engine of experimentation – exemplified by platforms such as DELTA and BRAVE-1 and linked mobilisation registries. Distributed innovation is now a well-established feature of Ukraine's defence effort; systematic learning — the reliable capture, evaluation and feedback of that experimentation into doctrine and policy — is less mature, and gaps in capture, coordination and analysis still restrict the translation of local successes into stable, system-wide change.

4.3. Networked state-society co-production

A third dimension is networked state-society co-production. Ukraine's defence ecosystem now routinely involves large volunteer foundations, grassroots initiatives, tech communities and local authorities alongside the armed forces, ministries and state-owned enterprises, moving beyond *ad hoc* volunteerism towards more structured and continuous cooperation (Synhaievska, 2023).

Volunteer logistics and support networks that initially supplied basic equipment and protective gear have, over time, expanded the scope of what they provide. What began as the supply of uniforms, rations and night-vision devices has evolved into the regular supply of unmanned aerial vehicles, satellite imaging, transport vehicles and other battlefield assets to combat zones. This illustrates how societal contributions have shifted from emergency gap-filling to sustained, increasingly sophisticated support for core defence functions.

Between 2015 and 2021, decentralisation and participation reforms brought local authorities and NGOs more directly into defence-relevant governance. Municipal councils and regional administrations took more responsibility for infrastructure, shelters and support services in frontline areas, while NGOs monitored security-sector reform, procurement and mobilisation practices and expert groups developed proposals on reserve systems, conscription policy and defence-industrial restructuring. Civil-society organisations were embedded in consultative councils and oversight bodies, giving them more direct influence over how reforms were designed and implemented.

Under full-scale war, co-production has intensified and become more structured.[34] Private drone and tech firms work with military units and ministries through programme frameworks and direct contracting; large foundations and platforms equip brigades with vehicles, optics, communications gear and drones; and tech-volunteer communities provide cyber defence, open-source intelligence and data analysis (Kirichenko, 2025). Many of these relationships are now mediated through formal contracts, memoranda of understanding and public–private partnership arrangements rather than purely informal personal ties, indicating that state–society cooperation is increasingly institutionalised.

---

33 As one interviewee noted: "If we're talking about what wasn't successful, I would point to information exchange between government authorities. During the war, the level of information security has increased, which makes information exchange more sophisticated and complicated, and this reduces some of the opportunities available to government. Controlled, open data can give an additional push to innovation, but we need to control this information, because our enemy, Russia, can use it against us" (Dolintse, interview, 3 May 2025).

34 Key to this is the willingness of government ministries to engage and some have played particularly significant roles. As Oleksiy Honcharuk noted: "It is an interesting anomaly that, in the war years from 2022 to 2025, it was not the Ministry of Defence but the Ministry of Digital Transformation that became the real champion of defence-sector reform – not because that ministry was by design more powerful but because the Ministry of Digital Transformation became the entry point through which grassroots initiatives reached government."

Networked co-production has not replaced the state but has expanded the set of actors contributing to mobilisation, logistics, industrial development and innovation (Litra, 2025). Oversight organisations – investigative journalists, anti-corruption NGOs, veterans groups, human-rights organisations – play a dual role, both supporting defence efforts and exposing abuses in areas such as mobilisation enforcement, battlefield procurement and the treatment of vulnerable groups. Ukrainian think tanks are also significant to helping assess old policies and backstop preparation of new ones, including directly for the Ministry of Defence.[35] Crucially, these state–society linkages do not only supplement capacity; they also generate corrective pressure, as investigative reporting and watchdog interventions have repeatedly forced official responses in procurement and mobilisation, triggering parliamentary debates, policy changes and criminal investigations.

At the same time, co-production carries dilemmas and unresolved tensions. Reliance on philanthropic funds and volunteer logistics platforms to supply protective gear, vehicles and surveillance equipment for entire brigades can blur lines of responsibility, create dependence on donors whose priorities and capacity may change, and expose critical tasks to governance gaps when informal networks weaken or shift focus. Involving non-state actors in sensitive domains such as procurement, mobilisation or intelligence raises risks of profiteering, leaks and uneven influence, especially where formal oversight mechanisms lag behind practice.

Local authorities and civil-society organisations vary sharply in capacity and political alignment, producing territorial variation in how effective co-production is and sometimes deepening existing inequalities between regions. The same dense networks that enabled Ukraine to survive the initial invasion now carry some vulnerabilities. Reliance on volunteer fundraising, informal logistics and civic mediation to compensate for state weaknesses becomes harder to sustain as the war lengthens, and expectations that citizens will continue to fill structural gaps indefinitely can generate quiet strains when fatigue and unequal burdens of effort become more visible.

Overall, this dimension captures how Ukraine has turned societal energy and private capacity into a structured extension of the defence sector – visible in the interplay between volunteer networks, municipal defence hubs, large philanthropic foundations and defence-tech firms – while revealing how dependence on uneven, partly informal networks continues to pose risks for legality, equity and long-term sustainability. The same openness that powers adaptation can also widen fault-lines if not carefully managed and cannot indefinitely compensate for unresolved weaknesses in core state institutions.

4.4. Strategic anchoring

> *Sometimes a decision must be made in a week or two. An experimental decree allows you to make a decision and provide a legal basis within a week or two so as not to wait a year; later parliament can ratify or legalise it. In my view this experimental measure is a breakthrough and a necessity to respond quickly to particular challenges.*
>
> (Fomenko, interview, 2026)

The fourth dimension of Ukraine's wartime adaptive defence governance is strategic anchoring. Adaptive systems can easily drift into fragmentation, mission creep or arbitrary decision-making unless they are tied to clear strategic direction and enforceable limits. In Ukraine, this anchoring

35 Ukrainian defence-focused think tanks contribute to the policy cycle by evaluating existing legislation and doctrine, developing reform proposals and directly providing analytical support and expertise to state institutions, including the Ministry of Defence (Istomina *et al*., 2025).

comes from the interaction of political leadership, constitutional rules, wartime legislation, parliamentary oversight, anti-corruption institutions and the wider Euro-Atlantic orientation of the state (Democracy Reporting International, 2025).

At the strategic level, the presidency, the Cabinet of Ministers, the National Security and Defence Council, the Ministry of Defence and the General Staff provide the central direction within which adaptation takes place. Wartime adaptation is not unconstrained experimentation: new bodies, digital tools, procurement channels and co-production arrangements are expected to serve the overriding national objective of sustaining the war effort while preserving state legitimacy and alliance credibility.

At the legal and institutional level, adaptive governance remains bounded by: constitutional commitments to civilian control; statutory procurement and budget frameworks; and the continuing role of parliament, courts, anti-corruption agencies and audit institutions. Investigative commissions, media inquiries, NGO monitoring and interventions by accountability bodies have exposed wrongdoing or generated scrutiny in sensitive areas including military procurement, abuses within mobilisation systems and misuse of public office (Stern and Korolchuk, 2025). At the same time, these accountability mechanisms remain uneven in practice: prominent corruption scandals show that, although legal oversight has continued under wartime conditions and retained the capacity to detect and expose wrongdoing, it has not always prevented serious failures or abuse.

Ukraine's Euro-Atlantic trajectory is central to how its adaptation is strategically anchored. NATO standards, donor conditionality, interoperability requirements and the political objective of eventual EU accession and greater NATO integration help define what kinds of adaptation are acceptable and legitimate.[36] Ukraine has adapted its external defence cooperation, developing coordination mechanisms with NATO and EU partners that support dynamic intelligence sharing and the rapid integration of Western-supplied equipment and training into national operations.[37] The ongoing provision of a diverse range of Western weaponry also inherently pushes Ukraine to maintain adaptiveness (Ukraine War Analytics, 2026). Key digital and organisational reforms are designed to be compatible with allied standards, while anti-corruption and transparency reforms are judged not only domestically but against external benchmarks. This creates an external anchoring effect: adaptation is encouraged, but it is also disciplined by the need to remain legible and credible to partners. However, in places this risks Ukraine's dependence on external political will and conditionality, which themselves have become more uncertain over time.

Strategic anchoring and accountability, however, are not complete solutions. Political centralisation in wartime can narrow deliberation, and some oversight mechanisms struggle to keep pace with the speed and secrecy of defence decisions, while the need to reassure external partners can sit uneasily with the urgency of battlefield adaptation, creating trade-offs between speed, transparency and procedural control. These tensions do not invalidate Ukraine's model; they show that adaptive defence governance remains a balancing act rather than a settled institutional formula, in which the boundaries of acceptable discretion and control are constantly contested.

36 An interviewee stressed that partner demands for long-term planning documents and multi-year reform commitments can sit awkwardly with wartime improvisation but also impose a longer-horizon discipline that helps counter short-term drift (Osadcha, 2026).

37 Interoperability testing for systems such as DELTA in NATO environments, licensing arrangements for alliance coordination software, and dedicated liaison and planning structures allow Ukraine to align Western aircraft, air-defence assets and training programmes with evolving battlefield requirements. Information-sharing arrangements are designed to balance operational utility with security and compartmentalisation, so that external support can be absorbed quickly without wholesale redesign of existing command arrangements (Rozouvan, 2025).

Over time, the tension between accelerated wartime decision-making and the need to preserve democratic contestation has intensified. Anti-corruption purges in the defence sector, controversies over mobilisation law, and public debates on territorial concessions have shown that strategic anchoring can fray when citizens perceive that sacrifices are not fairly shared or transparently governed, and that formal checks alone cannot guarantee legitimacy. Adaptive defence governance in Ukraine thus depends not only on legal frameworks and alliance commitments, but also on continuously renegotiated political consent for an open-ended war, which must be maintained even as the material and human costs mount.

Overall, this dimension shows that Ukraine's wartime adaptability is not simply a story of improvisation or technological dynamism. It depends on adaptation being anchored within recognisable structures of political authority, law, oversight and alliance orientation, even when those structures are under strain and do not always function evenly in practice.

Section 5. Why Ukraine's adaptive experience matters for Europe's defence readiness

> *Democracy is an enabler of a great deal of latent strength within a society when a large-scale war comes.*
>
> (Honcharuk, interview, 2026).

Europe's defence readiness increasingly depends on whether defence institutions and their partners can keep pace with intensifying pressures from conventional combat and hybrid tactics.[38] In practice, modern warfare as practised by Russia now combines covert hybrid operations in nominal peacetime with deliberate, large-scale targeting of civilian and especially energy infrastructure once war is underway, creating a form of sustained pressure for which many European defence systems were not designed. These conditions impose sustained demands on ministries, commands, industries and oversight bodies, forcing them to adjust under continuous pressure without eroding democratic control.

In this context, adaptive defence governance matters because readiness now hinges on institutional tempo: the capacity of defence institutions to adjust quickly and continuously while preserving legality, accountability and civilian control. Whether conflict is brief or prolonged, institutions that cannot adapt at sufficient pace will struggle to respond coherently as pressures accumulate. Defence governance models designed only for short, conventional crises are unlikely to cope with shortening technology development cycles, the saturation effects of relatively cheap systems, hybrid tactics and the rise of AI.

The preceding analysis shows that Ukraine offers a concrete example of how adaptive defence governance can emerge and operate under full-scale war. The four dimensions of Ukraine's model indicate that wartime governance is adaptive not because hierarchy, legality or accountability have been abandoned, but because they have been reworked into a more flexible, feedback-driven configuration under prolonged military pressure. Ukraine's model is uneven and still evolving, but it is sufficiently coherent to treat it as a serious case of adaptive defence governance rather than as

38 The European defence readiness roadmap 2030 frames readiness primarily as closing critical capability gaps by 2030 and launching flagship projects to strengthen the EU's ability to respond to intensifying conventional and hybrid threats (European Parliamentary Research Service, 2026).

a collection of disconnected wartime improvisations. This report characterises how that adaptive capacity operates rather than evaluating its outcomes, with the aim of making the governance logic legible enough for other states to assess its relevance.

On that basis, this section uses Ukraine's wartime configuration of adaptive defence governance to inform Europe's defence readiness. It argues that Ukraine's experience offers a usable model for strengthening European defence governance by showing how latent adaptive capacities can be identified and mobilised, and how active adaptive capacities can be deliberately built to sustain institutional tempo. It then applies these insights across standard defence-management functions to show how both forms of adaptive capacity can be embedded in European defence systems before war.

> "[Ukraine's] value for Europe lies less in preparing for a replication of Ukraine's war than in showing how contemporary defence can be governed under continuous, pressure-driven change."

5.1. Ukraine as an early European stress test of adaptive defence governance

Ukraine's wartime formulation of adaptive defence governance can serve as a model because it shows how a defence system that shares many features with European counterparts adapts under continuous, intensifying pressure. It illustrates how institutions can be reconfigured by drawing on existing latent capacities and developing clearer active ones to sustain adaptation at higher tempos while still operating within democratic and legal constraints.

At the same time, Ukraine is not a clean benchmark of successful adaptation. Ukraine's experience remains a rough, contested process rather than a polished success story; it is marked by serious policy mistakes, unfinished reforms, enduring corruption problems and disputed mobilisation processes, as well as unresolved questions such as how to manage demobilisation during a protracted war. For European allies, the relevant lesson is therefore not to idealise Ukraine's wartime governance, but to understand how adaptive capacities have emerged within, and sometimes despite, these structural constraints.

Ukraine should therefore not be understood as an exceptional wartime case lying beyond serious comparative study. Rather, it offers an early, 'real-world' European stress test of how defence governance is forced to evolve when institutions are exposed to prolonged military, technological and political pressure. Its value for Europe lies less in preparing for a replication of Ukraine's war than in showing how contemporary defence can be governed under continuous, pressure-driven change. Viewed through this lens, Ukraine's wartime experience points to an emerging systemic adaptive capacity in its defence governance—still uneven and contested, but sufficiently visible to offer European states a first, concrete sense of what such capacity can look like under sustained pressure.

Seen in this way, Ukraine matters because its wartime adaptability did not arise from a blank slate. Ukraine is structurally similar to many European middle powers: constrained resources, alliance dependence, legacy institutions and strong civil society. It entered 2022 with a decade of uneven reform, but the full-scale invasion still imposed system-wide pressure on governance, not only on battlefield operations. The capacities that proved distinctly useful, indeed imperative, under conditions of full-scale war were, in many cases, either latent within the defence sector or already emergent in broader state and society before 2022: decentralisation reforms, digital tools, industrial

assets and networked state–society linkages that could be refined, mobilised and expanded under deepening pressure. Most significantly perhaps is Ukraine's capacity as a democracy to widen participation well beyond the formal defence sector. War did not create all these resources from nothing; rather, it revealed which inherited capacities could be activated, recombined and scaled when older routines no longer suited operational needs.

At the same time, latent capacity alone was not enough. As pressure intensified, capacities that had previously existed only in partial, uneven or dormant form had to be converted into clearer active capacities: more modular institutional arrangements, faster coordination mechanisms, legal and administrative flexibilities and governance structures able to function at sustained tempo under democratic constraint. This is the deeper significance of the Ukrainian case. It shows not merely adaptation under fire, but the interaction between pre-existing latent capacities and actively constructed capacities that together make prolonged adaptation possible and governable. This is also what makes the case relevant beyond Ukraine itself. Protracted high-intensity war does not only consume materiel and manpower; it continuously stresses the institutions that allocate, regulate, mobilise, learn and maintain legitimacy.

That is why Ukraine must not be treated as an exception. To do so would be to misread it as a story of unusual national resilience rather than as a prototype for the direction of European defence governance more broadly.[39] Ukraine demonstrates that when institutions face continuous, intensifying pressure, the question is not whether adaptation will occur, but whether it will occur through governable structures that preserve accountability and democratic control, or through fragmented improvisation that gradually undermines both. It is directly relevant to Europe because it is not an exotic case outside the European experience: it is a large European state fighting a continental war while relying on alliances, legacy institutions, civil-society mobilisation and ongoing reform under pressure. The question, then, is how the interaction between latent and active adaptive capacity that Ukraine has demonstrated can be translated into a peacetime agenda.

5.2. Designing adaptive capacity in peacetime

> *But you cannot act the same way when you have crisis. You think that you know how to act when you have crisis. We also thought that we knew.*
>
> (Nayyem, interview, 2026).

If Ukraine's wartime experience functions as an early European stress test of emerging systemic adaptive capacity in defence governance, the corresponding peacetime task for other states is to design latent and active adaptive capacities deliberately rather than waiting for war to expose them. Both can be cultivated in peacetime through institutional design, legal preparation, digital systems, industrial arrangements and oversight mechanisms that allow defence governance to both adjust and accelerate without becoming arbitrary. For instance, in peacetime, the strategic task is not simply to prepare mobilisation plans; it is to identify which adaptive capacities already exist in latent form and to build the active capacities needed to use them coherently under pressure. Waiting for war to reveal and drive those capacities is itself a choice, and a costly one.

39 As one interviewee put it, a critical lesson from Ukraine's experience: "[T]he biggest mistake is thinking you know what to expect. If you do, you'll never be adaptive." She noted that pre-war assumptions – from 'Putin won't invade' to 'drones are not structurally significant to modern warfare' – illustrate how fixed mindsets can block timely adaptation (Osadcha, interview, 2026).

This can be framed using a conventional understanding of defence management.[40] Standard frameworks encompass policy and strategy, planning and capability development, resource allocation and budgeting, procurement and logistics, personnel and mobilisation, support systems and infrastructure, and the governance and oversight arrangements that connect these functions to political authority. Under contemporary conditions, adaptive pressure does not fall only on operational command or designated innovation units; it cuts across the entire defence management system, from how decisions are made and implemented to how data, industrial capacity and societal resources are brought into defence governance.

> "If adaptive capacity is left to emerge only after conflict begins, institutions will be forced to improvise under the worst possible conditions."

Within each of these functions, both latent and active dimensions of adaptive capacity can be distinguished. In planning and capability development, latent capacity may exist in doctrines, analytical staffs, alliance habits and prior reform experience, while active capacity depends on shorter feedback loops, modular planning processes and the institutional ability to reprioritise quickly. In procurement and logistics, latent capacity may reside in industrial depth, supplier networks and digital tools, whereas active capacity requires pre-designed emergency procedures, accelerated but auditable contracting mechanisms, and coordination structures capable of absorbing rapidly changing operational demand without losing traceability.

Personnel, mobilisation and oversight follow a similar pattern. Personnel systems may hold latent capacity in reserve pools, registries, administrative data and social traditions of service, but active capacity depends on procedures that can translate these resources into deployable manpower at speed and within law. Mobilisation systems can be designed so that changes in threat assessments, social conditions or alliance obligations can be reflected quickly in rules and practice rather than requiring complete reconstruction under fire. Oversight bodies possess latent capacity in existing legal authorities, audit institutions and parliamentary mechanisms, yet active capacity requires these instruments to function effectively at higher tempo so that rapid adaptation does not come at the expense of accountability and public trust.

Designing adaptive capacity in peacetime therefore means more than making institutions 'flexible' in an abstract sense. It means organising defence governance so that latent capacities can be recognised, maintained and mobilised under stress; active capacities are meanwhile deliberately built to operate under conditions of urgency, uncertainty and democratic constraint across the full spectrum of defence management. This is a central policy lesson from Ukraine for Europe. If adaptive capacity is left to emerge only after conflict begins, institutions will be forced to improvise under the worst possible conditions. If it is designed in advance, with attention to how each core function can learn, adjust and remain accountable, defence readiness becomes more durable, more governable and more credible.

Several questions lie beyond this report's scope and warrant dedicated study: whether specific adaptations improved measurable military or administrative outcomes; how these mechanisms behave once wartime pressure recedes; and which depend on enabling conditions, such as an existential threat or a pre-existing digital base, that may not be reproducible elsewhere. Identifying these boundaries is itself part of the contribution: it specifies what a peacetime adaptive-governance agenda can borrow from Ukraine, and what it cannot.

40 This summary draws on standard defence-management literature, notably DCAF's *Defence Management: An Introduction* (Bucur-Marcu, Furi and Tagarev, 2010).

Section 6. Policy recommendations

The core implication of this report is that European states' defence readiness problem is not only about military capabilities, force posture or spending levels. It is also about whether defence governance has sufficient adaptive capacity to adjust quickly and continuously under pressure while preserving legality, accountability and democratic control. Ukraine's wartime experience shows that adaptive defence governance is not a narrow wartime improvisation but a broader way of organising institutions, coordination mechanisms, digital systems and state–society relationships so that defence governance can sustain institutional tempo under intensifying pressure. The policy task for Europe is therefore to treat adaptive capacity as something to be identified, organised and built before crisis – across the core functions of defence governance rather than at its margins – while recognising that Ukraine's model is instructive precisely because it shows how constrained resources, legacy institutions, alliance dependence and strong societal mobilisation can be made to adapt, not because it can be copied mechanically.

Building on Section 5's distinction between latent and active adaptive capacities — and its mapping of these across the four dimensions of adaptive defence governance — the recommendations below are addressed primarily to national defence ministries, with NATO and EU bodies acting as conveners where cross-national coordination is needed. This does not mean European states should attempt to copy Ukraine mechanically. Ukraine's experience is valuable because it shows how a now familiar kind of defence governance system, shaped by constrained resources, legacy institutions, and alliance dependence, can adapt when peacetime routines no longer match operational reality.

It is important to be practical about what European ministries can actually do with these findings. The steps below are deliberately limited and concrete. Read together, they are designed to diagnose where latent capacities already exist, to build limited but traceable active mechanisms for using them, and to test whether defence governance can operate at higher tempo without abandoning legality or democratic control. Because this report characterises how adaptive mechanisms operate rather than proving their outcomes, these steps are framed as diagnostics and tests rather than confident prescriptions.

1. **Run an adaptive governance audit of one core defence function.**
   Select a single core area (e.g.,, mobilisation, procurement of drones, or battlefield information systems) and map where rules, data flows and responsibilities are too rigid or fragmented to allow rapid adjustment under pressure, and where useful latent capacities are currently under-used as potential sources of adaptation.

2. **Establish a small cross-functional 'wartime procedures' working group.**
   Bring together planners, legal staff, procurement officers and operational representatives to draft a limited set of pre-approved crisis procedures for that same function (e.g., mobilisation age changes or emergency drone purchases), including how decisions are documented and reviewed so that adaptive responses are faster but remain legally grounded and auditable.

3. **Create a singular and focused emergency procurement lane.**
   Introduce a constrained fast-track procurement process for a narrow category of items directly linked to adaptation (digital tools, critical communications gear), with clear thresholds, simple documentation, and automatic post-hoc review by an internal audit unit – turning latent industrial and technological capacity into an active, traceable channel for accelerated supply.

4. **Upgrade and stress-test a single personnel or mobilisation database.**
   Choose the system that is most critical in the first weeks of a crisis and ensure it can be securely accessed, updated and analysed rapidly (including basic dashboards), then run a table-top exercise to test how quickly policy changes – such as mobilisation criteria – can be implemented through it, treating this as a test of whether legal decisions can translate into adaptive administrative action at higher tempo.

5. **Set up a start-up defence-tech liaison mechanism.**
   Assign a small team to maintain regular contact with domestic start-ups and industrial actors working on drones, EW or battlefield software, collect proposals – feeding a limited number of promising ideas into existing testing pipelines, so that distributed innovation is systematically connected to defence needs rather than left to *ad hoc* opportunity.

6. **Formalise two–three specific state–society cooperation roles.**
   Identify a few tasks where local authorities, NGOs or volunteer groups already contribute (for example, shelters, local logistics, support to returning veterans); sign simple memoranda of understanding that clarify responsibilities, minimum standards and communication channels in crisis, turning existing societal initiative into predictable, adaptive capacity rather than entirely informal support.

7. **Define an 'adaptive oversight' protocol for the sensitive fast-track needs.**
   Agree with parliamentary committees or internal inspectors on how accelerated decisions in the targeted area (e.g., emergency procurement or mobilisation changes) will be reviewed – what data will be shared, on what timeline, and what triggers deeper investigation – so that faster decision-making is matched by oversight routines capable of operating at similar tempo.

8. **Integrate Ukraine-based scenarios into one regular planning exercise.**
   Adapt an existing national or NATO/EU exercise so that it includes at least one scenario explicitly modelled on Ukraine's governance challenges (e.g., sudden mobilisation under bombardment, rapid confrontation with new tech), with a debrief that focuses on where your systems could or could not adapt and what latent capacities were visible but unused.

Bibliography

Arnold, M., Roller, V. and Zhyvogliad, K. (2026) *Apps at War: Army+, Reserve+ and the rise of digital defence governance in Ukraine*. LSE IDEAS and Better Regulation Delivery Office (BRDO). Available at: 2026_05_02_NAW_AppsWar_02_WEB.

Beliakova, P. and Detzner, S. (2023) *Security sector governance and reform in Ukraine*. PeaceRep: The Peace and Conflict Resolution Evidence Platform, University of Edinburgh. Available at: https://peacerep.org/wp-content/uploads/2023/11/SSG-Report-v3-FINAL-.pdf.

Berladyniuk, Y. (2026) 'The impact of Ukraine's digitalization in war conditions on state administration in security dimensions', *Coordinates of Public Administration*, 1, pp. 53–67. Available at: https://kpu-journal.com.ua/index.php/journal/article/view/142.

Berndtsson, J., Kruck, A., and Weiss, M. (2026) 'Bringing society (back) in? Defence transformations across Europe in the *Zeitenwende*', *West European Politics*, pp. 1–28. https://doi.org/10.1080/01402382.2026.2669961.

Bondar, K. (2025) 'How and why Ukraine's military is going digital', *Center for Strategic and International Studies*, 6 October. Available at: https://www.csis.org/analysis/how-and-why-ukraines-military-going-digital.

Borrell, J. (2023) 'Lessons from the war in Ukraine for the future of EU defence', *European External Action Service – HR/VP Blog*, 29 May. Available at: https://www.eeas.europa.eu/eeas/lessons-war-ukraine-future-eu-defence_en

Boucher, A. (2009) *Defence sector reform: Policy note*. Henry L. Stimson Center. Available at: https://www.files.ethz.ch/isn/104501/Stimson_Defence_Sector_Reform_Note_Boucher7July09.pdf.

Bucur-Marcu, H., Furi, P. and Tagarev, T. (eds.) (2010) *Defence management: an introduction*. DCAF (Geneva Centre for the Democratic Control of Armed Forces). Available at: https://www.dcaf.ch/sites/default/files/publications/documents/Defence_Management_Intro.pdf.

Chaffin, B.C., Gosnell, H. and Cosens, B.A. (2014) 'A decade of adaptive governance scholarship: synthesis and future directions', *Ecology and Society*, 19(3), art. 56. Available at: A decade of adaptive governance scholarship: synthesis and future directions.

DCAF (Geneva Centre for the Democratic Control of Armed Forces) (2015) *Security sector governance: applying the principles of good governance to the security sector*. Available at: https://www.dcaf.ch/sites/default/files/publications/documents/DCAF_BG_1_Security_Sector_Governance_EN.pdf.

Democracy Reporting International (2025) *Ukrainian Democratic Institutions During Wartime: Annual Report 2025*. Available at: https://democracyreporting.s3.eu-central-1.amazonaws.com/images/6a157ad2c3db7.pdf.

Duit, A. and Galaz, V. (2008) 'Governance and complexity: Emerging issues for governance theory', *Governance*, 21(3), pp. 311–335. Available at: Governance and Complexity—Emerging Issues for Governance Theory.

European Parliamentary Research Service (2026) *European defence readiness roadmap 2030*. European Parliament. Available at: https://www.europarl.europa.eu/RegData/etudes/BRIE/2026/782589/EPRS_BRI(2026)782589_EN.pdf.

Gustafsson, M. (2025) 'Adaptive governance amidst the war: Overcoming challenges and strengthening collaborative digital service provision in Ukraine', *Government Information Quarterly*, 42(2). Available at: https://www.sciencedirect.com/science/article/pii/S0740624X25000504.

Hakmeh, J. (2025) 'What Ukraine can teach Europe and the world about innovation in modern warfare', *Chatham House*, 5 March. Available at: https://www.chathamhouse.org/2025/03/what-ukraine-can-teach-europe-and-world-about-innovation-modern-warfare.

Harding, L. (2022) '"We are a huge amount of ants": The united front of Ukrainian volunteers', *The Guardian*, 2 March. Available at: https://www.theguardian.com/world/2022/mar/02/ukrainian-volunteers-united-front-against-russia-invasion.

Helme, P. (2026) 'Lviv mobilization riot exposes the draft system Ukraine's government has refused to fix', *Euromaidan Press*, 10 July. Available at: https://euromaidanpress.com/2026/07/10/lviv-draft-car-overturned-mobilization-reform/.

Hoagland, R. (2026) 'Build at Scale, Innovate at the Edge, Close the Feedback Loop Fast: Transforming Acquisition for the Drone Age', *Modern War Institute at West Point*, 19 July. Available at: https://mwi.westpoint.edu/build-at-scale-innovate-at-the-edge-close-the-feedback-loop-fast-transforming-acquisition-for-the-drone-age/.

Hubina, Y. (2025) 'Brave1 defence tech cluster to issue grants for production of explosives', *Ukrainska Pravda*, 24 July. Available at: https://www.pravda.com.ua/eng/news/2025/07/24/7523191/.

Ingram, G. and Vora, P. (2024) *Ukraine: Digital resilience in a time of war*. Brookings Institution. Available at: https://www.brookings.edu/wp-content/uploads/2024/01/Digital-resilience-in-a-time-of-war-Final.pdf.

Istomina, P., Ogryzko, L. and Haievska, A. (2025) *Civil society role in Ukrainian defence*. Sahaidachnyi Security Center. Available at: https://sahasec.org/wp-content/uploads/2025/06/Civil-Society-Role_web-1.pdf.

Janssen, M. and van der Voort, H. (2016) 'Adaptive governance: towards a stable, accountable and responsive government', *Government Information Quarterly*, 33(1), pp. 1–5. Available at: https://www.sciencedirect.com/science/article/abs/pii/S0740624X16300156.

Karpouzoglou, T., Dewulf, A., Clark, J. and van Koppen, K. (2016) 'Advancing adaptive governance of socialecological systems through theoretical multiplicity', *Environmental Science & Policy*, 57, pp. 1–9. Available at: (PDF) Advancing adaptive governance of social-ecological systems through theoretical multiplicity.

Khomenko, I. (2025) 'Ukraine launches pointbased rewards for drone operators', *United24 Media*, 30 April. Available at: https://united24media.com/latest-news/ukraines-launches-point-based-rewards-for-drone-operators-8002.

Kirichenko, D. (2025) 'Ukraine's IT Army is a Persistent Thorn in Moscow's Side', *Kyiv Post*, 14 April. Available at: https://www.kyivpost.com/post/50436.

Kutsenko, O. (2025) 'Resilience under fire: navigating societal challenges, agency, and innovation in times of war', *Innovation: The European Journal of Social Science Research*, 38(1), pp. 1–10. https://doi.org/10.1080/13511610.2025.2465177.

Litra, L. (2025) *Defence co-production of Ukraine: from wartime necessity to strategic industry*. New Europe Center, 5 September. Available at: https://neweurope.org.ua/en/analytics/spilne-vyrobnytstvo-v-oboronnij-sferi-ukrayiny-vid-voyennoyi-neobhidnosti-do-strategichnoyi-industriyi/.

Matlack, S., Schwartz, J. and Gill, O. (2025) *Ukraine's drone ecosystem and the defence of Europe: Lessons lost can't be learned*. LSE IDEAS. Available at: https://www.lse.ac.uk/ideas/Assets/Documents/Research-Reports/2025-04-05-DRONES-MatlackSchwartzGill-FINAL-WEB.pdf.

Minakov, M. (2016) 'A decisive turn? Risks for Ukrainian democracy after the Euromaidan', *Carnegie Endowment for International Peace*, 2 February. Available at: https://carnegieendowment.org/research/2016/02/a-decisive-turn-risks-for-ukrainian-democracy-after-the-euromaidan.

Ministry of Defence of Ukraine (2024a) *Ministry of Defence explains what Oberih register is and what it is for*, 18 March. Available at: https://www.kmu.gov.ua/en/news/minoborony-poiasnylo-shcho-take-reiestr-oberih-i-dlia-choho-vin-potriben.

Ministry of Defence of Ukraine (2024b) *MOD introduced a novel mobile app for the military*, 8 August. Available at: https://mod.gov.ua/en/news/army-the-ministry-of-defence-introduced-a-novel-mobile-app.

Ministry of Economy of Ukraine (2023) *Defense tech to become one of the rapid economic growth drivers – Yuliia Svyrydenko*, 27 April. Available at: https://me.gov.ua/News/Print/b009bb4e-e002-47b0-b2b8-214a96eba23e?lang=en-GB.

Miroshnychenko, B. and Volynskyi, I. (2026) 'Less corruption, more competition: how Ukraine is building a digital arms procurement system now being adopted by NATO, *Ukrainska Pravda*, 1 May. Available at: https://www.pravda.com.ua/eng/articles/2026/05/01/8032647/.

NAKO (Independent Defence Anti-Corruption Committee) (2018) *Six Red Flags: The Most Frequent Corruption Risks in Ukraine's Defence Procurement*. Transparency International Defence and Security and Transparency International Ukraine. Available at: https://ti-defence.org/wp-content/uploads/2018/09/Ukraine_Six_Red_Flags_Eng.pdf.

National Anti-Corruption Bureau of Ukraine (2026) *Operation Midas: new suspect*, 9 July. Available at: https://nabu.gov.ua/en/news/operatciia-midas-nova-pidozra/.

National Security and Defence Council of Ukraine (2017) *Greetings of Secretary of the NSDC of Ukraine Oleksandr Turchynov on the occasion of the Day of the Ukrainian Volunteer Fighter*. Available at: https://www.rnbo.gov.ua/en/Diialnist/3227.html.

The New Voice of Ukraine (2024) *Military training period in Ukraine to extend to two months — Syrskyi*, 27 December. Available at: https://english.nv.ua/nation/military-training-period-in-ukraine-to-extend-to-two-months-syrskyi-50477325.html.

Odessa Journal (2025) *NATOUkraine develops Lesson Learned Data Exploitation Platform*, 18 June. Available at: https://odessa-journal.com/compatibility-of-ukraine-and-nato-jatec-and-partners-create-a-joint-lessons-learned-platform.

OECD (2025) *OECD integrity and anticorruption review of Ukraine*. OECD Publishing. Available at: https://www.oecd.org/en/publications/oecd-integrity-and-anti-corruption-review-of-ukraine_7dbe965b-en.html.

OECD (2022a) *Public governance in Ukraine: Implications of Russia's war*. OECD Publishing. Available at: https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/07/public-governance-in-ukraine_7a1de7cf/c8cbf0f4-en.pdf.

OECD (2022b) *Rebuilding Ukraine by reinforcing regional and municipal governance*. OECD Publishing. Available at: https://www.oecd.org/en/publications/rebuilding-ukraine-by-reinforcing-regional-and-municipal-governance_63a6b479-en.html.

Oliker, O., Davis, L. E., Crane, K., Radin, A., Gventer, C. W., Sondergaard, S., Quinlivan, J. T., Seabrook, S. B., *et al.* (2016) *Security sector reform in Ukraine*. RAND Corporation. Available at: https://www.rand.org/content/dam/rand/pubs/research_reports/RR1400/RR1475-1/RAND_RR1475-1.pdf.

Oxford Research Encyclopedia of Climate Science (2017) *Adaptive governance*. Oxford University Press. Available at: https://academic.oup.com/edited-volume/61804/chapter-abstract/546644744.

Parfonov, H. (2025) *Ukraine's military transitioning to corps-based command structure*. The Jamestown Foundation. Available at: https://jamestown.org/ukraines-military-transitioning-to-corps-based-command-structure/.

Phachulia, M. (2026) *Innovation under fire: Ukraine's wartime adaptation and the future of European security*. Institute for Security and Development Policy. Available at: https://www.isdp.eu/publication/innovation-under-fire-ukraines-wartime-adaptation-and-the-future-of-european-security/.

Pomerleau, M. (2024) 'Army taking new, modular approach to command posts', *DefenseScoop*, 11 December. Available at: https://defensescoop.com/2024/12/11/army-new-modular-approach-command-posts-configurable-c2/.

Ratchev, V. (2009) 'Governance, management, command, leadership: setting the context for studies of defence management', in Born, H. and Fluri, P. (eds.), *Defence management: An introduction*. Geneva Centre for the Democratic Control of Armed Forces (DCAF), pp. 15–44. Available at: https://www.isij.eu/system/files/download-count/2023-02/defense_management_chapter_1_0.pdf.

Rijke, J., Brown, R. R., Zevenbergen, C., Ashley, R. M., Farrelly, M., Morison, P. J. and van Herk, S. (2012) 'Fit-for-purpose governance: a framework to make adaptive governance operational', *Environmental Science and Policy*, 22, pp. 73–84. Available at: https://www.sciencedirect.com/science/article/abs/pii/S1462901112000901?via%3Dihub.

Rozouvan, T. (2025) 'Ukraine's Delta battlespace management system may be used in NATO joint planning', *Janes*, 24 January. Available at: https://www.janes.com/defence-intelligence-insights/defence-news/c4isr/ukraines-delta-battlespace-management-system-may-be-used-in-nato-joint-planning.

Soesanto, S. (2024) *The Ukrainian Way of Digital Warfighting: Volunteers, Applications, and Intelligence Platforms*. Center for Security Studies, ETH Zürich. Available at: https://doi.org/10.3929/ethz-b-000685245.

Stern, D.L. and Korolchuk, S. (2025) 'Ukrainian anti-graft bodies say they found huge energy kickback scheme', *The Washington Post*, 11 November. Available at: https://www.washingtonpost.com/world/2025/11/11/ukraine-corruption-investigation-energoatom/.

Stockman, F. (2023) 'Corruption is an existential threat to Ukraine, and Ukrainians know it', *The New York Times*, 10 September. Available at: https://www.nytimes.com/2023/09/10/opinion/ukraine-war-corruption.html.

Sullivan, B. (2022) 'Russia's at war with Ukraine. Here's how we got here', *NPR*, 24 February. Available at: https://www.npr.org/2022/02/12/1080205477/history-ukraine-russia.

Synhaievska, D. (2023) 'Ukrainian Volunteers: How Has 24.02 Challenged Ukraine's Civil Society', *UkraineWorld*, 23 February. Available at: https://ukraineworld.org/en/articles/stories/ukrainian-volunteers.

Germashev, Y. (2022) *War and Prozorro: How the public procurement system works during fullscale war in Ukraine*. Transparency International Ukraine. Available at: https://ti-ukraine.org/wp-content/uploads/2022/11/War-and-Prozorro_eng.pdf.

Tsvetkova, M. and Polityuk, P. (2019) 'Ukraine president on course for unprecedented majority after election win', *Reuters*, 22 July. Available at: Ukraine president on course for unprecedented majority after election win | Reuters.

Ukraine Reforms (2020) *Ukraine Reform Tracker: Governance reforms*. Reanimation Package of Reforms Coalition and partners. Available at: https://cdn.vev.design/private/BCwBc9ZFZy-Vz8yQQKr9VeLxSnjf1/u2YD4NpVRg_EI_SDC_Ukraine%20Reforms_Governance.pdf.pdf.

Ukraine War Analytics (2026) *Western Weapons Deliveries to Ukraine 2026: Systems, volumes, trends*, 20 April. Available at: https://ukraine-war-analytics.com/weapons/western-weapons-deliveries-tracker-2026.html.

Yelagin, V. (2025) 'Digital adaptability of the social protection system under military aggression: has the path from imbalance to institutional resilience been traversed?', *Pressing Problems of Public Administration*, 1(66), pp. 383–400. Available at: https://periodicals.karazin.ua/apdu/article/view/26520.

Zeldi, R. (2024) 'Ukraine is developing the Army+ app for the military: What are the problems with it and how to solve them', *ZN.ua*, 27 February. Available at: https://zn.ua/eng/army-on-paper-digitalisation-without-prior-optimisation-of-bureaucracy-will-not-improve-military-management.html.

Interviews

Deynega, Vitaliy. Founder, NGO Come Back Alive; former Deputy Minister of Defence (2023), 6 July 2026.

Dolintse, Bogdan, PhD. expert at Ukrainian Startup Fund and Brave1 (2021-2026), 2 July 2026.

Dorogan, Oleksii. CEO, BRDO, 18 June 2026.

Fomenko, Ihor. Former Deputy Minister of Economy (2022–2024), 13 July 2026.

Honcharuk, Oleksiy. Ukraine's 17th Prime Minister (2019-2020), 4 July 2026.

Nayyem, Mustafa. Former Head, State Agency for Restoration and Infrastructure Development (2023-2024), 17 July 2026.

Osadcha, Oksana. former Advisor to the Deputy Prime Minister on European and Euro-Atlantic Integration (2023–2025), 26 June 2026.

Yemchura, Taras. Defence Policy Sector Head, BRDO, 18 June 2026.

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

A Unique Programme in Strategy Designed for Decision Makers

LSE IDEAS, a centre for the study of international affairs, brings together academics and policy-makers to think strategically about world events.

This one-year **EXECUTIVE MASTERS PROGRAMME** is at the heart of that endeavour. While studying in a world-leading university you will be able to learn from top LSE academics and senior policy practitioners.

The programme will sharpen your ability to challenge conventional thinking, explore new techniques for addressing risk and threats, and coach you in devising effective strategies to address them.

Residential and non-residential options allow students to learn while holding demanding positions in the public, private and non-governmental sectors.

'Right from the first week I was able to apply the lessons I had learnt to our operational and policy work and to coach my teams to look at issues differently.'

–**Dame Karen Pierce DCMG**
UK Special Envoy to the Western Balkans, Former UK Ambassador to the United States

CONTACT US

ideas.strategy@lse.ac.uk

+44 (0)20 7955 6526
lse.ac.uk/ideas/exec

LSE IDEAS is the LSE's foreign policy think tank. Through sustained engagement with policymakers and opinion-formers, IDEAS provides a forum that informs policy debate and connects academic research with the practice of diplomacy and strategy.

The views and opinions expressed in this publication are those of the author(s) and do not represent those of the London School of Economics and Political Science (LSE) or LSE IDEAS. This publication is issued on the understanding that if any extract is used, the author(s) and LSE IDEAS should be credited, with the date of the publication. While every effort has been made to ensure the accuracy of the material therein, the author(s) and/or LSE IDEAS will not be liable for any loss or damages incurred through the use of this publication..

LSE IDEAS
Floor 9, Pankhurst House
1 Clement's Inn, London
WC2A 2AZ+44 (0)20 7107 5619
ideas@lse.ac.uk
lse.ac.uk/ideas