**Essay – NATO: maintaining a strategic advantage through cooperative innovation**

In most of NATO’s member states, a generation is now becoming parents who did not experience the Cold War. Many of them grew up in the early two-thousands, when the Washington Treaty seemed almost obsolete – at least within NATO’s heartland. Democracy, individual freedom, and the rule of law had become self-evident facts of life. Why protect something that seemingly could not be challenged?

The recent resurgence of the Taliban, among other examples, shows, that the conflicts which the allies logically focused their resources on still exist, but the situation at home has changed. NATO's founding values are now being challenged noticeably, not only from within societies and through ecological developments but also by revisionism and/or the increasingly affirmative behavior of authoritarian states. The superiority of liberal democracies is being contested for the first time in the lives of some, albeit mostly young people, by systemic rivals.

This change in the perception of its own security puts enormous pressure on the ability of societies to be challenged – a cornerstone of liberal democracy. Without this ability, tensions in the societal architecture can lead to rifts. The arrival of populism in the heart of Europe and North America is one of the most visible examples, nationalism following shortly thereafter.

Just as the perception of security has changed, so has the reality of the global security outlook. NATO now faces two great powers. Russia continues to try to bring its sphere of influence closer to NATO territory through its actions in Ukraine and the Caucasus. China has established itself in a position of economic strength and sees itself as a dominant player in the Indo-Pacific region as well as on the world stage. The impact of external factors on security has also become increasingly evident. Climate change and the COVID-19 pandemic act as both causes and accelerators of social and economic polarisation, drastically changing the geopolitical calculus of all actors – whether or not they are part of NATO.

As these external factors affect all countries, states can only address problems such as climate change and its consequences through continuous dialogue. Even if they are not external factors, human rights issues, migration, and trade must also remain on the common agenda. To give due priority to individual freedoms and responsibilities in the necessary common approach, those countries that are willing to do so need a strong negotiating position. We need to counter arguments backed by military and economic strength. Even if diplomatic and peaceful solutions are the only way forward, we need a strategic advantage over authoritarian approaches if we are to have a say in where the global community is heading.

There are two main components that may contribute to a strategic advantage: deterrence and resilience. NATO is committed to maintaining and strengthening arms control, notably through its continued support for the INF Treaty. Nevertheless, given developments in the global security environment, it seems highly unlikely that the world will be free of nuclear weapons in the foreseeable future. While Allies may aspire to a future in which nuclear power is limited to civilian use only, NATO will remain a nuclear alliance as long as nuclear weapons exist[[1]](#footnote-1).

Even though allies might face a set increase in nuclear weapons capabilities, we cannot significantly increase our own capabilities while maintaining our credibility in the necessary arms control negotiations. To completely rewrite the course of a potential conflict, it could be prima facie sufficient for a single warhead to overcome missile defenses. Thereafter, it would no longer matter how many nuclear weapons a state still possessed. No matter what one's own position is, this line of argument is logical enough to largely influence public opinion against any expansion of nuclear capabilities. Even if not every decision depends solely on public opinion – in countries committed to upholding democracy as a founding value of their alliance, any decision that disregards public opinion altogether would be questionable at best. It should be noted, however, that conversely the same reasoning works in favour of further strengthening NATO’s Air and Missile Defense (AIMD). As Nuclear deterrence will remain the mainstay of NATO’s deterrence posture, allies took a further step in the right direction through strengthening the readiness and responsiveness of NATO IAMD forces, especially through the establishment of the new NATO IAMD centre of excellence in Greece.

Credible deterrence requires resilience. Recent natural disasters in the Alliance area, namely the floods in Germany and the forest fires in Canada, have shown the risk that would be posed by a potential attack during such a disaster. If we are not able to respond quickly in the event of similar emergencies, our deterrence position will be severely compromised. Allies need to work with the mostly nationally organised rescue and crisis response units, as well as with infrastructure providers and the private sector, to ensure that the seven NATO baseline requirements for resilience[[2]](#footnote-2) are met. The framework established by NATO through the NATO Civil Emergency Planning Committee (CEPC) and the NATO Civil Protection Group (CPG) already allows for dialogue on how Allies can enable this cooperation in practice. In this area, the approaches of non-member partners, such as Sweden and Finland, could serve as an adaptable model for implementing a whole-of-government and whole-of-society approach to resilience. Closer cooperation with these geographically important partners could also improve the exchange and compatibility of NATO and EU resilience efforts. Sweden and Finland could act as a link between the EU and, for example, Norway, with which they already cooperate in various bodies such as NORDEFCO and the Nordic Council.

Resilience and deterrence are both goals that can only be achieved through a common path: Innovation. Successfully finding the most humane and effective solutions to multi-faceted security challenges would not only be the best way to prove the superiority of liberal, rights-based democracies, but may also be the only way to achieve strategic advantage. Allies therefore need creative solutions to technological problems arising from emerging and disruptive technologies (EDT). They also require comprehensive ways to address the political and administrative challenges involved in finding these solutions. NATO could provide sufficient incentives for developing new solutions or leveraging the strategic potential of already developed technologies. At the same time, NATO must ensure that the benefits of innovation can be shared in solidarity for the strategic benefit of all Allies.

While liberal democracies rely on innovation to maintain their strategic advantage, innovation can also be their greatest strength. Unlike authoritarian regimes, the freedom of thought required for creative solutions poses no threat to liberal democracies. Examples such as the "space race"[[3]](#footnote-3) show that when states set clear goals and allocate sufficient resources to achieve them, solutions can be found to seemingly insolvable problems. When President John F. Kennedy announced that the U.S. would aim for a manned return flight to the moon in 1961, the U.S. government had tremendous ground to make up. But by dividing the challenge into sub-goals and ticking them off in a coordinated but not restrictive manner, Edwin Aldrin put the U.S. flag on the lunar soil just eight years later in 1969.

The technological challenges today are much more complex and diverse. For example, increasingly harsh climatic conditions require much more resilient infrastructure, the artificial intelligence capabilities of potential adversaries necessitate new developments in, e.g. precision long range targeting, and the advent of quantum computing requires ground-breaking new encryption methods – these are just some of the possible consequences of technological developments NATO sums up under EDT[[4]](#footnote-4). Individual nations may not have the resources to achieve the necessary excellence in all these important areas.

NATO is the only forum that brings together a large number of countries that are both major centres of innovation and can provide conventional and nuclear deterrence, all based on the same core values. Most of the key epicentres for EDTs are spread transatlantically. The majority of influential semiconductor technology is now developed in North America, while some of today's most important biotechnology breakthroughs are made in European laboratories. Through its Centres of Excellence (COE), NATO is already doing influential conceptual work in providing basic research to allies and partners in areas with innovation potential, such as civil-military cooperation in The Hague, strategic communications in Berlin or resilience in Bucharest. The joint findings of these centres could be used more widely to provide the necessary background for policymakers setting coherent innovation targets.

The Defence Innovation Accelerator for the North Atlantic (DIANA), which is expected to be operational in 2023, could provide an incentive for the private sector to get involved[[5]](#footnote-5). Modelled on the U.S. Defense Advanced Research Projects Agency (DARPA), it is intended to give its proven concept a broader reach. A capital market will provide start-ups with trusted investments while ensuring that intellectual property remains protected. The structure will also allow companies without previous ties to the defence sector to explore the strategic potential of their ideas.

Allowing willing countries to count research investments towards meeting the two per cent commitment, if the strategic benefits of the research can be used to the strategic advantage of the Alliance, could provide much-needed political motivation to overcome resistance to cooperation on EDTs.

NATO needs to take care of both sides- of defence, resilience, and deterrence. But the most important goal is to focus on what matters most: preserving its core values by maintaining a strategic advantage over systemic rivals. Nuclear and conventional deterrence will inevitably remain important components of our security architecture. As the challenges in an interdependent society become ever greater, security cannot be achieved without resilience in all its forms. However, not only do these challenges require innovative solutions, but innovation is also central to maintaining a credible deterrence posture. Until 2030, NATO does not have to be a technological innovator itself, but it should provide an innovative and comprehensive framework that enables Allies to use their innovative potential to defend and strengthen the Alliance's strategic advantage.

1. Cox, J., Director of Nuclear Policy, NATO, 2021. Retrieved from <https://www.nato.int/cps/en/natohq/topics_50068.htm> on July 31st 2021 [↑](#footnote-ref-1)
2. assured continuity of government and critical government services; resilient energy supplies; ability to deal effectively with uncontrolled movement of people; resilient food and water resources; ability to deal with mass casualties; resilient civil communications systems; resilient civil transportation systems. [↑](#footnote-ref-2)
3. NATO’s Innovation Challenge; Aronhime, L.; Cocron, A.; NATO Review, July 19th 2021 [↑](#footnote-ref-3)
4. Emerging and Dispruptive Technologies, June 18th 2021. Retrieved from <https://www.nato.int/cps/en/natohq/topics_184303.htm> on July 31st 2021 [↑](#footnote-ref-4)
5. NATO hopes to launch new defense tech accelerator by 2023; Marchi, V.; Defense News, June 22nd 2021 [↑](#footnote-ref-5)