

Lt Gen Ferenc Korom:

HUNGARIAN DEFENCE FORCES CAPABILITY TRANSFORMATION: BALANCING ACQUISITION AND INNOVATION

ABSTRACT: *This article is based on the speech held on the conference “Disruptive Technology for Defence Transformation” in London, 24 September 2019 by Lt Gen Ferenc Korom.*

KEYWORDS: *defence capability transformation, military transformation, national defence planning, Z2026*

I took over as the commander of the Hungarian Defence Forces (CHOD) at an auspicious moment – in the very early stage of a top-to-bottom modernization programme of the Hungarian Defence Forces. It is an exciting, but at the same time a very challenging time to transform the HDF.

My job is exciting and rewarding, because I have the opportunity to oversee the creation of a new, more effective and thoroughly modern defence force, one that is capable of guaranteeing Hungary’s sovereignty and contributing in a meaningful way to the common defence of the Alliance as well. But it is challenging at the same time because we do not know, what challenges lie ahead and what is the nature of armed conflicts in 10 or 15 years. Yet we must plan ahead, organize, equip and train our forces today considering these black swan events.¹ Perhaps the most difficult part of my job is making every day decisions about allocating finite resources and managing the myriad of challenges in finding the best available servicemen and women, as well as communicating our transformation efforts to society.

My article is built around three W-s: what defence capability transformation really means for Hungary; why the country decided to launch it; and what is our strategy to reach our desired end state. Our concept of military transformation is a continuous, proactive process with a rolling horizon. It is not necessarily fast, it does not have to cover the full scope of the HDF, and it does not exclude equipment which is already working well. It is not just development, but a fundamental change. Acquiring new equipment to do the same thing better, at longer range and with greater precision is not a transformation. Replacing our AK-47 with the BREN 2 assault rifle is not a transformation, only incremental improvement. But the integration of artificial intelligence into the structure of the armed forces is, and it requires a mind-set change.²

¹ The black swan event is referring to a phrase used in a book by the essayist, scholar, philosopher, and statistician Nassim Nicholas Taleb released on April 17, 2007. The book focuses on the extreme impact of certain kinds of rare and unpredictable events (outliers) and humans’ tendency to find simplistic explanations for these events retrospectively. This theory has since become known as the black swan theory. Taleb, N. N. *The Black Swan: The Impact of the Highly Improbable*. New York: Random House, 2007.

² Porkoláb, I. “Szervezeti adaptáció a Magyar Honvédségben: Küldetés alapú vezetés 2.0 a digitális transzformáció korában”. *Honvédségi Szemle* 147/1. 2019. 3-12.
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Our purpose is to develop and maintain military advantage, by making the HDF adaptive, capable of dealing with the changing security environment, and react faster and more effectively than our adversaries. Adaptability is key,³ and it enables us to respond adequately to new and emerging challenges. To this end we make transformation the driver of future short-, medium- and long-term force development plans.

Hungary is implementing defence capability transformation through the so called “Zrínyi 2026 programme”.⁴ The programme is named after a 17th century Hungarian general, politician and poet, who advocated the replacement of the inadequate mix of local forces and feudal levies with a professional standing army. In all but name this was a fundamental transformation of Hungary’s defence system.

Implementation through the Z2026 in a VUCA environment⁵ is very complex, it means the simultaneous development of the DOTMLPF-I (doctrine, organization, training, materiel, leadership and education, personnel, and facilities) components together, in order to make the HDF more capable of facing new threats and challenges. Our goal is to achieve and keep military advantage through quality advantage, and eliminate shortcomings that are likely to arise in the future, or are likely to be brought about by the changing security environment. We intend to achieve this by turning the armed forces into a learning organization.⁶ The success of the Z2026 is based on a goal-oriented development strategy, which is scheduled for the period between 2018 and 2026, and is supported by the twin pillars of National Defence Programmes and Force Development Programmes.

These programmes cover not only the HDF itself, but also include plans to redevelop the national industrial base. Thus, our transformation programme will not only support capability building, but will also contribute to the retention of a high-quality work force, and the end result I expect is a more capable HDF.

³ NATO Secretary General Jens Stoltenberg said that “one of our greatest strengths is our ability to adapt.” Stoltenberg, J. “Keynote speech at the 2015 Chiefs of Transformation Conference”. 11 December 2015. Norfolk, VA.; Stoltenberg, J. “Keynote speech by NATO Secretary General Jens Stoltenberg at the opening of the NATO Transformation Seminar”. NATO. 25 March 2015. http://www.nato.int/cps/en/natohq/opinions_118435.htm

⁴ The Hungarian government launched the most significant development programme since the end of the cold war. It affects all segments of the Hungarian Defence Forces – even the defence industry sector. It entails a plan for robust acquisition projects in order to modernize the Hungarian Defence Forces and revive the defence industry through the transfer of knowledge, technology and establishment of defence industrial capacities.

⁵ VUCA is short for *volatility, uncertainty, complexity, and ambiguity*. It is meant to describe the highly dynamic chaotic environment. VUCA also conflates four distinct types of challenges that demand four distinct types of responses. The notion of VUCA was introduced by the U.S. Army War College in the 1990s. The deeper meaning of each element of VUCA: (1) Volatility. The nature and dynamics of change, and the nature and speed of change forces and change catalysts. (2) Uncertainty. The lack of predictability, the prospects for surprise, and the sense of awareness and understanding of issues and events. (3) Complexity (or variety) is measured by the number of distinguishable states it is capable of having and is beyond the control of any individual. The multiplex of forces, the confounding of issues, no cause-and-effect chain and confusion that surround an organization creates an entangled web of complexity. (4) Ambiguity occurs when there is no clear interpretation of a phenomenon or set of events. It can never be eliminated altogether and the haziness of reality, the potential for misreads, and the mixed meanings of conditions always cause-and-effect confusion. For a better understanding see: Berinato, S. “A Framework for Understanding VUCA”. *Harvard Business Review* 59/9. 2014. <https://hbr.org/2014/09/a-framework-for-understanding-vuca>; Bennett, N. and Lemoine, G. J. “What VUCA Really means for You”. *Harvard Business Review* 59/1. 2014. <https://hbr.org/2014/01/what-vuca-really-means-for-you>

⁶ Porkoláb, I. “Szervezeti innováció a Magyar Honvédségben: Az ember-gép szimbiózisa a stratégiaelméletek tükrében”. *Haditechnika* 53/1. 2019. 2-8. DOI: [10.23713/HT.53.1.01](https://doi.org/10.23713/HT.53.1.01)

As part of the adaptation to the new situation, Hungary is planning to establish two multinational commands (MND-C, SOCC-R) and we have initiated the reform of the C2 structure of the HDF as well. The bottom-line is that we are all aware of the current, deteriorating security environment, increasing complexity of threats and challenges which act as a trigger for the transformation of the defence sector. This proves the need for adapting to the new environment.

The lessons learned from current operations and the transformational pressure from NATO does not allow us to base our defence on our current capabilities, as a reliable ally we need to increase our defence capabilities through the acquisition of the most modern equipment in order to improve our responsiveness and status, but at the same time we need to build innovation to create an adaptive and resilient organizational culture.

The objectives are clear: we need to create an agile, responsive and modern defence force which can contribute to operations and ensure the safety and prosperity of Hungary; but at the same time we also need to support the improvement of our national economy.

The four main drivers behind our capability transformation are:

- Changing security environment – as we must continuously adapt to keep up with the rapidly changing security environment.
- NATO summit decisions – as we also have our commitments and obligations stemming from our NATO membership.
- National defence ambitions – as our aim is to develop the HDF to become a leading, state-of-the-art military force in the region.
- New trends and opportunities – because it is essential to keep ahead of the threats and challenges we face and to make use of all new opportunities.

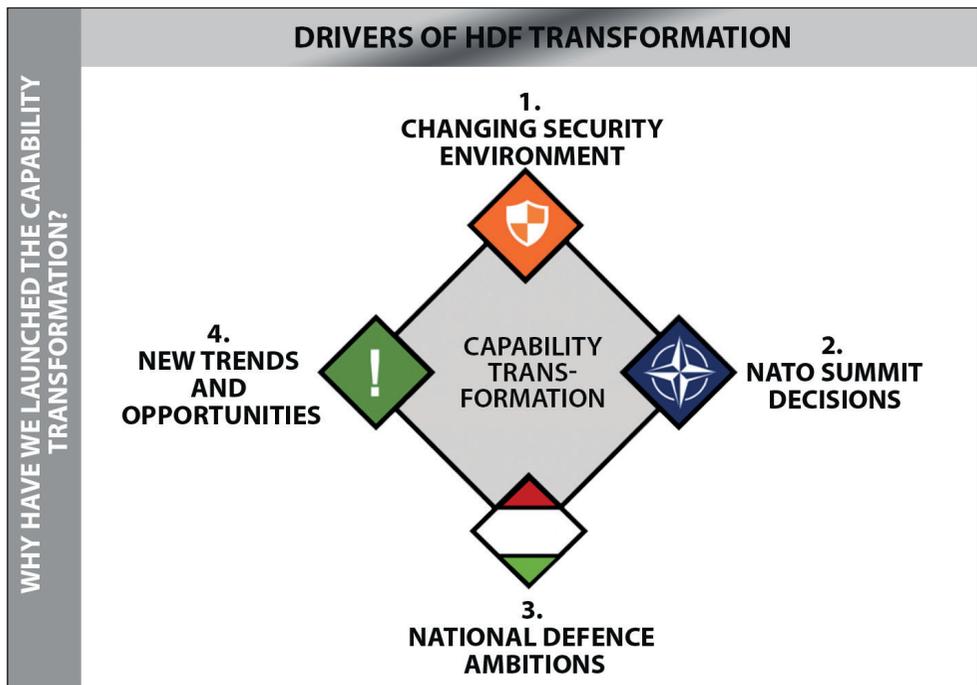


Figure 1: Drivers of HDF transformation

One of the drivers for transformation has been the changing security environment. I am quite certain that by looking at the trajectory of events of the past three decades, we can conclude that we are moving away from a relatively simple Cold War period (when the enemy was clearly defined) towards an era of complex conflicts – which has many names: hybrid war, cyber war, unrestricted war. I am sure we can realise the enormous differences between the capabilities that needed during the Cold War, and those that are required today to prevail in expeditionary operations, and those of the future uncertain battlefield. In the 1980s artificial intelligence was still mostly considered to be science fiction – today it is becoming reality, and changes the very essence we fight modern wars.

The sequence of the NATO summit decisions responding to the challenges, especially those in the last decade or so, has reflected on this complexity, and provided a clear guidance on how to proceed. Hungary, as a member of the Alliance is determined to keep up with its Allies. We do our share of responding to the deterioration in the security environment; from upgrading our capabilities, through adapting our mind-set, to building cutting edge capabilities, like the ones able to deter adversaries in the evolving cyber domain.⁷ Hungary cannot become a security freeloader and rely on others to provide its defence. We want to remain a relevant actor in the common defence of the Alliance, so we must make a relevant and valuable contribution. That is possible only if our capabilities are equal or superior to those of the potential adversaries of the Alliance.

Obviously, there are other motivating factors as well. Hungary is a sovereign nation. Its interests and ambitions may be closely parallel to those of our Allies, but they do not coincide in every case. A capable military force is an essential element of a nation's existence. A nation that cannot defend its sovereignty by force of arms will remain sovereign only as long as it is convenient for other nations. Meanwhile, it will have to be careful not to offend its potential adversaries, and defer to allies that defend it. But the armed forces are also a symbol of national unity and an instrument of realizing our national ambitions.

A very real problem the HDF has been facing for some time is the legacy equipment from our membership in the Warsaw Pact. We still use a significant number of Russian made equipment that is quite obsolete by today's standards and must be replaced. However, resource constraints in the past forced us to postpone the acquisition of modern western equipment. It has all changed, as now we have not only the urgent need, but also the opportunity to make it happen, as significant funds for the foreseeable next couple of years were made available by the government to the Ministry of Defence. But buying modern equipment in and of itself is not enough, we have to enable the warfighter, and just about every component of DOTMLPF-I has to be re-assessed, modified, and brought up to date. Our domestic industrial capacity needs serious improvement, and initially may impose some constraints, but I am confident that we can overcome these challenges as well in time. We expect that a collateral benefit of the transformation process will be the revival of the Hungarian defence industry and the birth of a defence innovation ecosystem.

The fourth driving factor of transformation is the realisation that the changing security environment brought not only challenges, but opportunities as well. I believe that in our current situation the challenges and the opportunities are two sides of the same coin. If we meet a challenge head on, analyse it, seek to resolve it, and identify the appropriate solution,

⁷ Cyber has been declared as a domain at NATO's Warsaw Summit in July 2016. "Warsaw Summit Communiqué". NATO. 9 July 2016. http://www.nato.int/cps/en/natohq/official_texts_133169.htm

we can now identify the appropriate direction for future improvement, because we have significant foresight regarding our resources. We must also realize that our potential opponents face very similar challenges.

Taking into account the characteristics of a future war, although there are plenty of buzzwords out there, from agnostic fires platform to semiautonomous wingman teaming, we really do not have a clear idea what a conflict will look like in ten or fifteen years from now. Is it going to be a hybrid war full of ambiguity? A nuclear Armageddon? Fast moving manoeuvre covering entire continents and all domains? Protracted, low intensity war of attrition? Or bits and pieces of all four? We really have no idea, and we do not have any clue who our adversaries will be. Will they be nation states and their alliances? How resilient and strong will they be? How will they fight? These are all relevant questions for strategic decision makers and force planners alike, yet they are mostly unanswered these days.

Still the fact remains, we must make long-reaching decision today, acquire and field complete warfighting systems that best fulfil our requirements, and we also need to train our forces, while we fully realize two things. First, when we deploy our forces in combat, their training and equipment may prove less than perfect in an operational environment that is substantially different from what we had planned for. Second, due to the very rapid pace of development in the technology sector, better systems will be available in the near future, since the technology disruption cycles, especially in autonomy, and digital technology are becoming shorter and shorter.

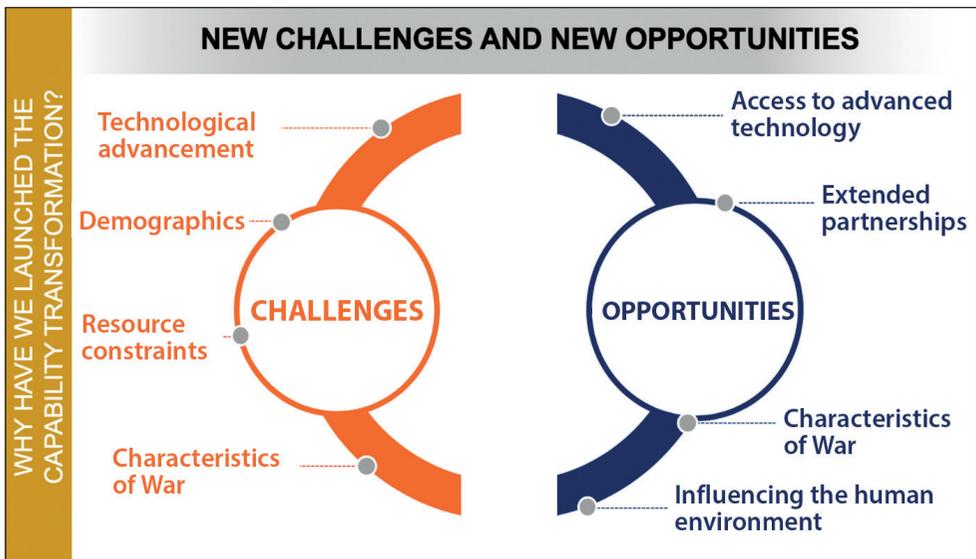


Figure 2: *New challenges and new opportunities*

Much the same applies to the other challenges and opportunities. Resource constraints like the supply of and access to water, natural resources and rare-earth minerals, the population explosion in the Global South and population decline in the Global North, the rapid pace of technology development, raise questions like: how to translate into capabilities within the armed forces, and how to deal with ethical questions like hunter-killer autonomous systems. One thing seems to be certain: with superior situational awareness (which requires robust

intelligence, solid analysis, and an agile organizational learning system using AI and modern technology) we can allocate adequate resources to defence, and face present and future challenges.

Our national defence planning is in harmony with the NATO Defence Planning Process (NDPP). Although the Z2026 programme is – first and foremost – based on national interest, we have ensured that it is also in line with the NDPP. We incorporated our obligations from the Capability Target Package 2017 in the national force development plans in order to fulfil our commitments in the Alliance. We also continuously enhance our forces offered to NATO, and review our short-term plans in order to keep up with the rapidly changing security environment.

At the Wales NATO Summit the presidents and prime ministers of NATO member states approved that they will raise their defence expenditures to 2% of GDP, and 20% of this will be used for research & development and the acquisition of new military equipment.⁸ In line with the above commitment the Government's decision to allocate the necessary funds for a 7 year time period is unprecedented, and provides us with an opportunity to plan ahead and make the necessary strategic decisions.

As a part of this transformation process, we made structural changes as well, separated the Ministry of Defence and the Hungarian Defence Forces Command, in order to clarify the lines of authority and responsibility. We also created some new organisational elements. The HDF Transformation Command and the HDFC Inspectorates are recently established within the HDF. The Modernisation Institute is also a new HDF entity focusing on bringing in new technology and building defence innovation. As it scouts out new ways to innovate, it manages R&D projects and acts as a bridge between the HDF's defence capability building effort, links up the MoD with an innovation ecosystem, and makes suggestions for technology development focus areas. The Cyber Academy is responsible for the training and education of personnel working in the field of cyber defence. We established a new officer and non-commissioned officer training system as well to support capability transformation with well-trained NCO personnel.

There can be no question that technology was a very important enabler in Russia's seizure of Crimea. Cleverly designed algorithms and bot farms are certainly essential for spreading fake news in order to influence international public opinion. We (the Alliance as a whole and each member state) must find the human and financial resources to match our potential adversaries – and not only match, but surpass them in the military application of cutting-edge technology. But we must not be dazzled by the possibilities inherent in technology. Acquisition of new whizz-bang equipment in and of itself does not lead to enhanced capability. New equipment must become an integral part of the armed forces through doctrines, training, and capable operators, before it can contribute to success.

I believe that in our current quest for transformation technology is just one of the drivers. And perhaps not even the most important one. If you look at Hungary's reasons for launching its force modernization project, you will note that they are really the outcomes of political, societal and economic developments in the country's immediate vicinity, and in some cases further away.

⁸ "Wales Summit Declaration". NATO. 5 September 2014. http://www.europarl.europa.eu/meetdocs/2014_2019/documents/sede/dv/sede240914walessummit/_sede240914walessummit_en.pdf

For us it is imperative that we think in complete capability packages which cover all the aspects of the DOTMLPF-I spectrum. The thorough reform of the HDF will cover all areas: organization, doctrine and training must all be changed to enable the warfighter to use the brand new up-to-date equipment and materiel acquired through the Z2026 Programme. Perhaps the most crucial aspect of the transformation effort will be the recruitment and retention of educated personnel who are capable to operate the new equipment.

Still, we must not forget that an armed conflict, whether low intensity expeditionary operations or high intensity conventional war, is still a very dangerous business that requires us to close with and destroy the enemy by fire and manoeuvre, or repel his assault by fire and close combat. Thus the very basic nature of war has not changed: it still demands young, skilled, well-trained, physically fit, strong and brave men and women and commanding officers with exceptional leadership skills. Also, in order to support the new equipment we need new facilities and a robust defence industrial complex. Developing the national industrial base supports not only defence capacity building, but also retains the quality workforce we are so proud of, generates opportunities for the younger generation, and supports local companies to scale up defence related businesses in the region or globally.

We also have to realize, that the defence sector needs allies in capability development. While in the past, defence related research and development has been the main driver to create new technology, today a lot of military innovations come from the civil sector, and the armed forces become aware of them only when they are manifested in commercial-purpose drones, cyber-attacks against their information networks, or in jammed communications. These technologies are becoming more and more accessible to non-state actors, their development cycles are shortening, and the attacks using this equipment are extremely low-cost.

On the other hand, the majority of new military equipment takes several years to develop, is extremely complex and expensive, and contains critical electrical components sourced through long and fragile supply chains.

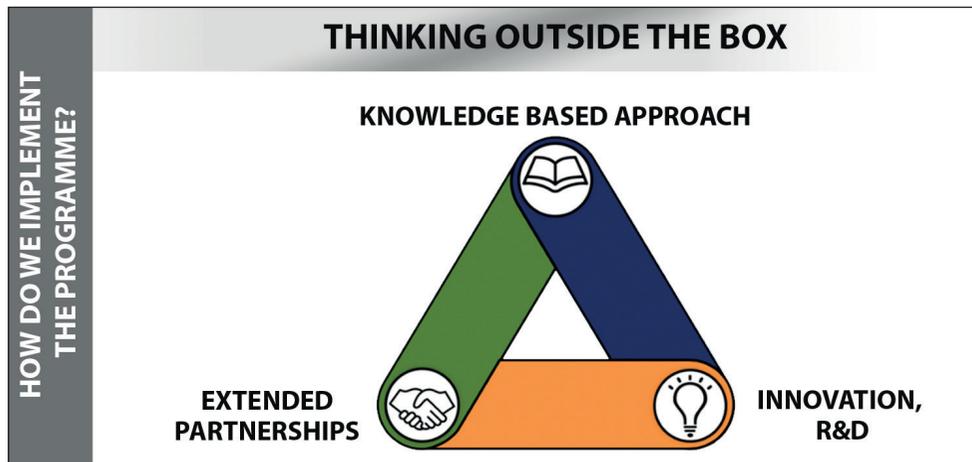


Figure 3: *Thinking outside the box*

The answer to this challenge is clear: quick and effective adaption and integration of the most promising civil technologies in military equipment, development of modular and scalable systems, use of open architecture design, avoidance of over-engineering in new

systems, shortening of development cycles, and development of the national industrial base in order to decrease supply risks. However, the military cannot do all this alone, therefore we need to build an innovation interface organization to be able to connect to the already existing ecosystem.

Innovative, new defence solutions are only guaranteed by partnering with specific talent and knowledge base, agile research facilities. Since the armed forces do not have the necessary scientific and technical knowledge at the moment, and our research and development capabilities are cumbersome, we need to articulate our capability needs and operational and technical requirements in order to foster academic thinking and focus the industry (especially SMEs and start-ups) on specific problem areas we need to solve. At the same time, the validation and certification of the solutions and their integration into larger capability building projects must remain a function of the armed forces.

Innovation is about new ideas merging, creating options, and finally as prototypes being tested by operators. Dedicated military centres with typical military mind-set and procedures alone and in isolation cannot guarantee the cross-pollination of innovative ideas. Therefore, we also need the involvement of a large number of civil researchers in defence innovation. Moreover, the civil sector is the leader in a number of key technology areas, and the civil and defence research sectors are integral parts of national economic and science systems in all developed countries. Decision makers in the defence sector, who disregard the fact that there is no real innovation without building a strategic innovation ecosystem approach with civil research institutes, universities, think tanks and industry, put the competitiveness of their national defence industrial and technological base, and take a strategic risk.

Hungary has a robust academic system, including a network of academic research institutes and polytechnic institutes. The innovation potential of the academic system is a solid basis for the development of cutting-edge defence technologies. Moreover, our start-up ecosystem is blooming and it is a talent base that must be tapped into in order to generate solutions for defence problems. On the basis of this particular innovation ecosystem the Hungarian defence R&D projects are starting to take shape. We are particularly interested in developing autonomous off-road vehicles, energy systems supported by hybrid sources like hydrogen fuel cells, artificial intelligence based dynamic route planning, quantum cryptography algorithms, Artificial Reality/Virtual Reality-based simulation systems, and aeronautic capabilities as well.

To sum up and answer my original question, I believe that a structured transformation approach that is based on a solid innovation strategy is crucial for the future force development of the HDF, and in order to establish capable, agile, and ready HDF which can respond to new threats and challenges effectively we should not only focus on the acquisition of the best available platforms and technology, but also on changing the culture of the force through innovation, and on the organizational learning processes like design thinking,⁹ which will enable our warfighters to use the technology and guarantee the sovereignty of the country as well as to contribute to operations carried out by our Allies.

⁹ Porkoláb, I. and Zweibelson, B. "Designing a NATO that thinks differently for 21st century complex challenges". *Defence Review* 146/1. 2018. 196-212.

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