

**CHANGING CONCEPTS OF  
NATIONAL SECURITY IN  
THE POST-COLD WAR ERA AND TURKISH DEFENCE INDUSTRY  
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**DEVELOPMENTS IN THE POST-COLD WAR ERA**

Some argued that the end of the Cold War reduced the threat, so liberating vast funds that could be spent more productively. Developments in the past decade have shown that optimism to be misplaced. Recent tragic events in the United States have shown the sense of security the end of Cold War instilled in many people to be false. With bloc discipline no longer masking local cleavages, the switch to a mono-polar world came with a sudden eruption of conflicts of unprecedented violence around the globe. And, with a nuclear holocaust no longer the prime threat, the positions of the major powers, vis-à-vis local conflagrations, have undergone radical changes. Former allies have fallen out among themselves. Ethnic conflicts, fuelled by clashing, alien interests have caused the fragmentation of whole states accompanied by widespread agony.

We are witnessing momentous changes in the world's 'security architecture', to use a fashionable phrase. Traditional alignments are becoming increasingly fluid. A diminishing regard for the unity of states is raising the spectre of arms or trade embargoes. Even without any such hard lessons, it is clear that an indigenous defence industry tracking changing threat assessments is a wise insurance policy for every state.

Beside these military and political considerations, there are economic factors speaking in favour of military industries. The first and foremost factor the champions of a sophisticated arms industry stress is that military industries create well-paid and highly skilled jobs and reduce unemployment. This argument is generally invoked when the military industrial complexes' share in national wealth is high enough to cause frowns.

A second frequent, if problematic, argument says military industries generate technologies that can be channelled to civilian applications. The critics of this so-called 'spin-off argument' retort that it does not apply to economies beset by stagnation or slow growth, which happen to be a category encompassing the majority of the countries in our day.

Finally, the proponents of national defence industries in developing countries argue that arms exports are a welcome source of cash. Opponents, however, counter that such arms exports may compromise the availability of still needed economic aid or de-stabilise the political situation in that country's region and thus offset any material gain from weapon sales.

But, all the counter-arguments notwithstanding, the defence industry has traditionally enjoyed a privileged status at the expense of other sectors, particularly in developing countries, which are more vulnerable to serious damage from terrorism and local conflicts than are developed countries.

Neither has the end of the Cold War ended the privileged place of defence industries in the West. Governments tried to ensure that military industries retain high levels of technological competence, without necessarily converting it into finished products. Referring to the importance of developing a 'reconstitution capacity' as an element of defence strategy in a speech<sup>1</sup> 11 years ago, Ramsey Clark, the then British minister of defence procurement, suggested, "We might also consider whether to give R&D greater priority within the defence budget". He added that he was not proposing a flood of new money, but rather was wondering whether there should not be work for researching for new technologies and demonstrating them, while not automatically taking them into full development as before.

This position was also consistent with that in the United States. For the past 10 years or so, the turbulence observed in defence policy has obstructed a clear line in R&D policy. But today it seems that the need to adapt to changing threats, particularly those emanating from so-called 'rogue countries' has once more spurred defence spending. Spending more to contain a threat from relatively crude missiles may look paradoxical at first. But the flimsy chance of tying these states to any firm commitment to destroy or limit their nuclear, chemical or biological capabilities has caused the resurrection of costly anti-ballistic missile programmes with controversial new components. According to the influential Jane's Defence Weekly,<sup>2</sup> Washington was to spend some \$6 billion on anti-ballistic missile defence in 2001 alone.

Inadequate statistics, reluctance to make projections public, a lack of information about industrial spending and difficulties of categorising dual-use projects further complicate the task of analysis on our side of the Atlantic. However, one can say with confidence that Western European governments have by-and-large preserved their defence-related R&D activities and expenditure, at least relative to the rate of reduction in defence budgets.

Although this has ensured the retention of an adaptive capacity, the audacity and sophistication the terrorists who struck the heart of the United States displayed has some

sobering lessons for all. Governments and international organisations are, therefore, facing profound challenges in the security field, including the need to redefine national security and strategic priorities, and maintain appropriate levels of capability, nationally and internationally.

One can safely expect that once the dust settles, the latest terrorist attacks will set a new paradigm for defence planning and production, marked by mobility and early response. One can also predict a new emphasis on command, control, communications and intelligence, on space surveillance and communications, and on defences against weapons of mass destruction. In fact, the US's 2001 budget for defence against terrorism was expected to add up to \$12 billion, or twice the sum that was to be spent on anti-ballistic missile research and development. The administration has reportedly sought a similar sum for fiscal 2002.

Perhaps of more relevance here are the changing security needs of the developing countries faced with aggravating threats from regional instability or separatist terrorism while the threat from the 'common-foe' of the past recedes. In the confused new dynamics of the post-Cold War era, the likelihood of partner assistance against an 'individual foe' not listed as a common threat for the alliance still looks remote. And, since the threat perceptions of the threatened country and its allies may diverge, defence planners may be forced to make room for possible embargoes and sanctions instead of aid. This alone speaks for the rapid establishment of a sophisticated national armaments industry, geared to security needs that do not necessarily conform to – and may even clash with – those of current allies. The central issue here is the correct assessment of the real threat from among a host of lesser or potential ones, and the correct identification of the right technological instruments and strategies to counter it.

## STRATEGIES FOR DEFENCE INDUSTRIES IN DEVELOPING COUNTRIES

In the Western World, military technology is defined as technology produced in accordance with specifications and rules ministries of defence define. The technology base of a defence industry is a combination of the people, institutions, technological know-how and facilities used to design, develop, manufacture and maintain weapons and supporting defence equipment needed to meet national defence and security objectives.

In all countries, regardless of the economic (or political) system, the ultimate goal for military products is 'performance at any cost', or a reliable defence system at any cost; all other determinants, including economic factors, are secondary. For instance, in the US, work from the Department of Defense is acquired not only on the basis of competitive bidding for contracts but, contrary to market principles, also through direct allocation to firms within the military industrial complex. Indeed, more than 65 per cent of all defence contracts are awarded in this way.<sup>3</sup>

There are three legal ways to acquire the technology to meet defence requirements:

- Direct procurement;
- Technology transfer;
- Indigenous development through intensive R&D.

Acquiring military technology is a subtle matter due to several factors. One factor is the rapid ageing of technologies, which triggers the need for newer ones. The urge to acquire them, however, is tempered by their usually prohibitive cost and the additional barrier of the normally protective attitude of the owners. There is, of course, the added need for absolute reliability of the products. Thus, all the three ways have their advantages and disadvantages, depending on specific cases. But the determining factors are the level of technology involved and a country's chosen strategy. Still, some general comments can be made.

#### Direct Procurement

This seems to be the method with lowest risk for the developing country, although that is not always true, especially when long-term risks are concerned. To start with, a country purchasing most of its requirements will never own the technology. In other words, it pays for the use of the technology, but fails to gain its control. Second, efficient use of the product will be highly dependent on the original source. Third, it is not always possible to purchase everything. International limitations protect certain technologies, such as the Missile Technology Control Regime. The purchasing country has also to consider the expenses of training, maintenance, repair, spare parts, etc. Finally and perhaps more importantly than all the others, direct purchases deprive the national industry of the stimuli for defence projects. All these place national defence under major risk in the long term. A country depending on imported arms may face unwelcome surprises during an international crisis, finding systems that were readily available during peacetime harder to procure during war.

#### Technological Transfer

Most of these risks also apply to technology transfers without special planning. For a country with limited resources like Turkey, technology transfer should be considered together with the reverse engineering concept. Together with manufacturing know-how, the capability for incremental and even radical design improvements should also be acquired. But one has to bear in mind that technology transfer may be more expensive than direct purchase. The technology to be transferred should be chosen with great care, with special emphasis on its growth potential as well as the ability of existing human resources to handle it. Transferring a technology merely to manufacture a certain product will be a waste of a country's scant resources. A defence product manufactured with transferred technology is, more often than not, either an outdated system with no (or limited) restrictions imposed on its sale to third parties or, conversely, is modern but comes with heavy marketing restrictions imposed by the technology owner. In either case, it is extremely difficult to export such a product to third countries. Although in theory the user and provider of the technology can jointly export the products to third countries, extremely narrow profit margins make such ventures unfeasible.

## Local Development

So, from the perspectives of reliability, sustainability and economy, it is more desirable for the product to be developed locally; based on the indigenous technological capability, to have an up-to-date design, be of good quality and provided at a low cost. Although it is impossible for a developing country like Turkey to satisfy all the technological needs of its defence sector with products or systems designed and produced at home, the development of a domestic production capacity is very important. First, R&D programmes pay back their cost in the long term and make a significant contribution to the national economy. Second, these types of activities help create an important human resources infrastructure. Finally, it is only through those programmes that the product is acquired together with the technology generation capability. The production of defence systems based on indigenous R&D opens opportunities for private companies to develop exportable products and thereby help improve the foreign trade balance. The process of globalisation offers attractive opportunities in this respect.

## THE NEED FOR TECHNOLOGICAL SELF-RELIANCE:

### LESSONS FROM TURKISH HISTORY

The recent dramatic attacks that devastated the heart of the business world and cost thousands of lives were hard lessons for industrialised Western nations. They were treated to the sobering shock that they were not immune to terrorism, which until then had seemed to be at a comfortable distance, allowing it to be ignored, tolerated or even supported to varying degrees. Sad to say, tragic events are always needed to drive home the importance of national security. Hopefully, they will serve as a reminder that we can never afford to relax.

Unlike the US, we have a long history of combat against terrorism. This does not mean, however, that we are now exempt from the damage it can inflict and can scale down our efforts to possess the right weapon, the potent weapon to counter the scourge. In the past, Turkey had to put up with camouflaged or open arms embargoes to defend its unity. Self-sufficiency in defence, then, is not a remote problem only concerning the industrialised countries possessing ample resources and cutting-edge technology. For reasons I have listed, attaining self-sufficiency is even more vital for developing countries. So, it is essential for Turkey to reduce its dependency on external sources to meet its defence needs, to beef up its arms industry and for that industry to gain enough sophistication and versatility to produce the right weapon at the right time.

Why do I put so much emphasis on home production and correct choice of weapons for our armed forces? A brief look at history shows the cost our forebears had to pay for failing to adapt to events that wrought great changes in economic organisation, social and cultural life in the civilised world, and reshaped its military doctrine.

While full of tactical successes and expansion, the Turks' military history is also a typical example of strategic retreat. The Ottoman decline was set rolling and was accelerated by those great leaps in Europe that became known as the 'Scientific Revolution', 'Military Revolution' and, finally, the 'Industrial Revolution'. All of these have their roots in that gross accumulation of capital called mercantilism that reigned supreme in Europe for three hundred years from the mid-fifteenth century to the mid-eighteenth. As the West progressed in science and technology, those societies left out rapidly regressed, losing their sovereignty, territory and even any remaining pretensions to be states. To design the correct strategies to avoid similar problems in future, Turkey has to make a correct assessment of past mistakes. In this context, I think a brief review of military history will be useful.

The relative ease with which the Turks entered the Balkans demonstrated the superiority of light cavalry tactics over those of armoured cavalry and infantry that dominated European military doctrine at that time. And, with the arrival of gunpowder in Asia Minor and Europe, a new and strategic factor emerged: firearms, with cannon at centre stage.

The Turks use of heavy cannon gave them a relative advantage in sieges. A critical point here is that the cannon is a weapon brought in from the West to be used against the West. The Turks, of course, made their own contributions to cannon technology, like scaling up their calibre and casting them at the battlefield instead of carrying them all the way from home. Perhaps this was a lesson learned in the fifteenth century when Ottoman Sultan Mehmet II had to drag his heavy siege guns, cast at Edirne, several hundred kilometres east to breach the walls of Istanbul. A brief look at a map to compare the distance between Edirne and Istanbul with the one from Edirne to Vienna must have dictated the novel logistic solution. Heavy, large-calibre guns had always been a fad for the Ottomans. But this obsession with size prevented its use as a swift tactical battlefield weapon.

As the seventeenth century Military Revolution swept across Europe, the decline of the Turks stemmed from three main reasons, according to the military historian G. Parker.<sup>4</sup> I will quote only two of those, both of which concern the fatal disregard of keeping up with technology.

- The Turks kept producing big guns in limited numbers instead of opting for rapid-firing and mobile field guns. Armies equipped with guns and shells mass produced in special foundries and boasting professional artillery officers well versed in trigonometry began getting the upper hand against an Ottoman army burdened by its antique weapons.
- The Ottoman's lag in metallurgy was causing the guns to disintegrate while shoddy casting and boring reduced accuracy.

An example the famed historian Bernard Lewis<sup>5</sup> cites about the recoil from novelty outlines the general social and political attitude. According to Lewis, master shipbuilders who inspected a Venetian galleon that ran aground in Ottoman waters had to extract permission from the Sheikh-ul-Islam, the supreme religious authority, to carry away the guns and other innovative equipment to their own vessels under construction because they did not want to commit the sin of transgressing the Prophet's edict that whoever emulates others, would become one of them. In the end, the top cleric had to cook up some novelty himself to decree that taking something from the Christians was permissible on condition that it was used to defeat them. From then on, that key would be used to open the doors to further innovation. The catch, however, was that it would permit the adoption of only military innovations from the infidels, but this meant that the first institutional innovations would appear in this area (Lewis, pp. 223-24). This example alone may explain why the Ottoman Empire could not attain its grand strategic ambitions. Carlo Cipolla<sup>6</sup> also makes a similar observation for the decline of the Ottomans: Turks had never grasped the importance of innovation and followed developments (Cipolla, p. 77).

Thus, the historians see the principal reason for the Ottomans' decline in their disregard for technological innovation although they had otherwise proven their military prowess by conquering extensive swathes of territory in the West and the East, and had strategic objectives matching those of Spain and Portugal in ambition and scope.

The motive for institutional innovation came from military setbacks, particularly those suffered against Russia. The Ottomans did not even regard Russia as a serious adversary until the eighteenth century, and left the conduct of relations with Moscow (or St. Petersburg) to the Khanate of Crimea. Particularly educating was the humiliation in 1770, when the strong-willed matriarch, Catherine II, keeping to Peter the Great's course of rapid modernisation, sent the Baltic Fleet through the Gibraltar Strait to set fire to the Ottoman warships lying at anchor off Çeşme.

These new institutions were, the Royal School of Naval Engineering, its army equivalent, the Military College, School of Military Medicine, and modern armies and navies. The Turks' encounter with modern technology dates back to the establishment of the Naval Engineering School in 1774. At last, about a hundred years after the catastrophic second siege of Vienna, the Ottomans understood that recurring defeats on the battlefield stemmed from their lag in technology.

The lag in science, too, would be admitted towards the end of the nineteenth century, although a serious effort to address the problem would wait until the proclamation of the Turkish Republic in 1923. It should not be forgotten, however, that establishing the link between science and technology and even understanding it had not been easy in the West either. But, in our day, if you cannot establish the link between science and technology, you cannot realise technological innovation in any field.

Without finding a satisfactory answer to why the Ottomans never entered a period of mercantilist capital accumulation, or participated in the Scientific Revolution, the Military Revolution and the Industrial Revolution, it will be difficult to explain why modern Turkish society needs to improve its innovative dynamism. Is another type of person, or a different social structure the necessary prerequisite for such inter-linked factors as scientific revolution, mercantilism and industrialisation? Such questions have diverse and complex dimensions, and cannot be shrunk and simplified into a brief discussion. So, I am not going to elaborate further on these here.

Military technologies have been starting blocs for technological progress in the industrialised Western world. One can even say that the West owes its ability to convert its economic lead into military superiority to the support military and civilian technologies lend each other. Strong navies have enabled military-political expansion and new markets have spurred economic development.

Societies that have industrialised relatively late or are still on the road to industrialisation and Westernisation also use military technologies as a propellant.

Some of the late modernisers, such as Russia and Japan, have managed to join the ranks of major political-military powers. The Soviet Union used its technological prowess to become a superpower and challenge the United States. Because it neglected civilian technologies, or, in other words, economic innovations, it could not bear the burden and collapsed. Pre-atom bomb Japan had the same experience. Seeking to dominate the Pacific and challenge the United States, which barred its way, it steered itself into a shattering defeat. Post-war Japan,



with its constitution barring militarisation, could channel all its technological power into becoming the number two economic power in the world, although it could not still attain a similar standing in the political-military sense. The United States, on the other hand, has mobilised its industry for defence when necessary and has been able to develop advanced technologies with its own resources and expand its economy. The US economy has always been able to adapt to war and peace without difficulty. More importantly, even in peacetime it has allowed large scale military spending to stimulate sectors, while in wartime an economy adjusted to military needs has paved the way for the subsequent growth of civilian sectors.

But, as countries like Turkey are not planning for economies of scale, we have to overcome technological as well as mental hurdles at the outset. Of course, any economy can make some major mistakes while developing its technology and cannot afford to discriminate against any technological assistance. The initial products do not at first please the military, which, even if satisfied with the provided hardware, will understandably continue looking for systems that are more effective. Because of the nature of military technologies, these mistakes often remain secret, or become public much later. Naturally, it is the successful examples that are highlighted. Nobody remembers, or cares about, how many German or American rockets exploded in their ramps, or how many planes could not make it beyond the drawing board. Were not the Germans opening the US Sherman tanks like tin cans in the Second World War with their 88mm guns? Did not the Japanese Imperial Airforce's Zero fighters blast the first generation of US fighter planes out of the skies? How many men and how much money did the Russians waste before they finally developed nuclear weapons? How many Chinese rockets exploded on the ground before China became a space power? Then, did not everyone take something from someone else? How much does the United States rocket industry owe to the deadly V-2s and von Braun, their designer? How many European physicists had to put up with prison camp conditions in the New Mexico desert to carry the Manhattan Project to its fruition? One can multiply these examples by the hundreds.

## TURKISH DEFENCE INDUSTRY: ADAPTING TO NEW CHALLENGES

To enhance the technological capabilities of a defence system, one has to have resources in terms of researchers and cash as well as the resolve to push the project through. A military chief who makes the right decision about the development of a new technology to safeguard national security should not, after consulting with all the players in the system, feel under pressure or guilty of squandering his country's scant resources. For, a correct decision will not only reinforce the defence capability but also make great contributions to the economy, technology and, under present conditions, the science of the country. While creating employment and revenue, it will also contribute to the development of national scientific and technological capability.

One cannot come to possess advanced technology through continuous technology transfer. Even the most advanced technologies purchased are not advanced enough. Turkey is not very

rich, but rich enough to make technological investments in those sectors with ready demand, namely defence and its sub-sectors, to develop its own resources. This is said in an economy whose real sectors are in a crisis, in other words, in an economy with a diminished production capacity. The economic crisis manifests itself as plunging demand and shrinking production. The funds to be expended for technological development projects will boost our country's technology-production capability, beside providing employment and motivation for the rare talents to decline attractive offers from abroad and stay at home. Otherwise every dollar we spend on every new weapon or system we buy will flow into the economies, universities and laboratories of the countries that have enriched themselves through the sale of technology, and it will help them to develop yet more advanced technologies. Then, we will have to pay even more to acquire these technologies, unable to free ourselves from the clutches of this vicious circle.

The end of the Cold War confronted Turkey with different but no less substantial threats to its security and the need to adapt to changing threat profiles with matching speed. The country found itself surrounded by conflicts in the Balkans to the west, the Caucasus to the east and the tumultuous Middle East to the south, while at home it had to wage a protracted fight against separatist terrorism. Beside these, it had to fight against exclusion from the new defence apparatus being fashioned for Western Europe although it gained pre-accession status for membership of the EU. The Turkish armed forces, adapting to the demands of unconventional warfare, have dealt with the threat and reduced it to manageable dimensions. However, no one doubts the need for constant vigil against dangers within and without borders. The dual task of responding to terrorist tactics while bolstering the country's defence capabilities against sophisticated weapons of mass destruction makes the armed forces possession of the right weapons all the more important. At the same time, it makes versatility a key target for a Turkish defence industry that has already proven its ability to rise to technological challenges.

In this respect, the acquisition of a missile defence capability has become a vital priority for our country in view of the important strides taken by some of our neighbours in developing ballistic missiles with increasing range, payload capacity and accuracy. While negotiating with its allies for the acquisition of technology to counter the growing missile threat in its immediate vicinity, Turkey has been developing its own technology for the production of rockets to increase the firepower of its modernising army. TÜBİTAK has been contributing to this.

Beside air defence, Turkey has covered important ground in gaining added mobility for its ground forces through wide scale utilisation of helicopters. In view of the experience of nearly 15 years of combat against separatist terrorism, home production of both utility and combat helicopters again loom as an important priority. It appears that the production of unmanned reconnaissance aircraft, fast becoming top items in the shopping list of the American and European military, should be given due priority in Turkey as well. The production of these reconnaissance drones and the upgrading of existing ones is certainly within the technological range of the Turkish defence industry. It gives me pride to note that the Turkish defence

industry has already proven itself as a precision industry with ever-increasing indigenous intellectual impact, building sophisticated combat jets, modern submarines and frigates.

Besides being a stimulant for the economy, an indigenous defence industry is a major security asset for any country; all the more so for Turkey. A sophisticated and diversified Turkish defence industry will, naturally, be an added security bonus for its allies as well. Not only because it means a better equipped member guarding NATO's southern wing, but also because another technologically progressed ally means a qualified new partner for European mega projects in the defence sector.

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1 Speech on 'Defence and High Technology Industries', at the World Economic Forum, 4 September 1991.

2 Michail Sirak, 'USA Weighs Outlays for Asymmetric Threats', *Jane's Defence Weekly*, 30 October 2001, p. 3.

3 The Pentagon's procurement regulations not only indicate product specifications, but also in detail the production organisation and product development process, which their own agents strictly monitor. The Pentagon also retains the property rights, i.e. the rights to transfer knowledge and know-how to competing firms.

4 Geoffrey Parker, *The Military Revolution*, Cambridge University Press, 1998.

5 Bernard Lewis, *The Muslim Discovery of Europe*, Phoenix, 1982.

6 Carlo Cipolla, *Guns and Sails*, Penguin, 1971.