

## **Defence Day: Drive towards Technology**

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Pakistan's Armed Forces proved themselves during the so-called surprise attack by India on Lahore in the 1965 War. They proved that even with limited manpower and resources, they could inflict humiliating defeat on the enemy. To commemorate their valiant push-back, honour their determination and courage, and pay tribute to the bravery of the country's soldiers, pilots, and sailors on the ground, in air, and the seas, the nation celebrates 6th September.

From the 1965 War against India till [Operation Swift Retort 2019](#), Pakistan's Armed Forces have remained committed to their iron pledge to defend our borders. To achieve this, they have left no stone unturned in adopting improved and upgraded war-fighting capabilities and strategies. However, with modern militaries undertaking Research and Development (R&D) at breakneck speed, Pakistan, too must promote R&D rapidly to improve its readiness and keep pace with technological developments.

It is important, hence, that this Defence Day be celebrated as one where Pakistan's Armed Services vow to undertake new R&D for technological advancements and remain at par with developments in the regional defence sector.

Pakistan has cordial relations for defence procurements with several friendly countries such as China and Turkey. Nevertheless, to stay ahead of regional defence development and acquisitions, the military must invest in indigenous R&D as technology transfer is likely to become more and more difficult in the coming years as well as more expensive.

In order to identify which technologies require R&D, Pakistan Armed Forces must evaluate tech needs. This could be done by being proactive and assessing which technologies are suitable to respond effectively to the strategic threat environment. For instance, autonomous drones with real-time surveillance, Artificial Intelligence (AI), and anti-hacking cyber efficiency, are essential to monitor tensions at the eastern and western fronts. Such assessment would require critical thinking and creative problem-solving approach towards R&D.

In terms of R&D, indigenization suits Pakistan's Armed Forces. The talent and manpower for this purpose can be drawn by utilizing the potential of capable and smart entrepreneurs and academia. Such public-private partnerships could lead to active indigenization and optimal defence and technological solutions. Among other aspects that must also be catered to include aligning policies, legal and financial resources that favour technological development.

Rapid indigenization of technology would also require adopting a research methodology that eliminates delayed processes. One such approach is practiced by Google called the '[hybrid approach](#)'. Under this approach, researchers and engineers work in synergy to find the appropriate balance between R&D. Lengthy processes are compartmentalized into short-term measurable goals. This not only delivers timely outcomes, but also keeps the researchers and engineers motivated.

Under such an approach, technologies such as AI, machine learning, big data, neural networks, cloud computing, and data mining could be adapted to secure the country's land, air, sea and cyber space. Since hardware such as jets, tanks or ships could be upgraded by installing latest software to improve efficiency, R&D in these areas could also prove to be a valuable area to investigate.

If Pakistan's military does not speed up building on such innovative approaches of R&D, operations and strategies could become extinct in future battlefields. Moreover, regional actors, especially neighbouring country India is heavily investing in upgrading and modernizing its technological architecture, therefore, Pakistan must give priority to financial investment in emerging technologies as well. This would require a national level push towards technology as witnessed in Singapore where the state initiated the [National IT Plan](#) and incorporated IT into the lives of pre-schoolers as well as adult citizens, from schools and hospitals to military and defence.

To unlock the technological potential in Pakistan, a realization of the importance of R&D and a culture of manufacturing indigenous technologies instead of only utilization/acquisition, must be adopted.

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