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From Operational Problems to Capability Development: Institutionalising Military Adaptation in the Indian Army

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Abstract

Military transformation is often associated with new technologies, modern equipment and doctrinal innovation. However, the decisive challenge for military institutions lie not merely in acquiring new capabilities, but in adapting to the changing operational realities faster than potential adversaries. This paper argues that the Indian Army's next phase of transformation should focus on strengthening the institutional processes that convert operational experience into military capability. It proposes an Operational Adaptation Cycle that provides a structured approach for progressing from operational observations to problem definition, prioritisation, experimentation, validation and institutional integration.

The paper further identifies key enablers required to sustain this process, including problem definition, prioritisation, routine experimentation, institutional learning, capability integration and an adaptive organisational culture. Rather than viewing innovation as an isolated initiative, it argues for making adaptation a continuous institutional function embedded within training and capability development. Ultimately, the paper contends that enduring military advantage will depend not only on technological superiority, but on the Army's ability to learn, adapt and institutionalise change faster than its adversaries.

Keywords: Institutional Adaptation, Capability Development, Operational Adaptation Cycle, Innovation, Problem Definition, Research and Development

Introduction

Military history repeatedly reminds us that armies rarely lose because they stop innovating—they lose because they fail to adapt quickly enough (Murray, W. 2011). Superior technology has often provided only temporary advantage. Far more enduring has been the ability to recognise an early change, learn from experience and adjust faster than the enemy. That challenge has become even greater today. Artificial intelligence, autonomous systems, precision weapons and the electromagnetic spectrum are compressing the time between identifying a battlefield problem and exploiting it. In such an environment, the speed of institutional learning may prove as important as the quality of military hardware (CLAWS, 2026).

The Indian Army has rightly placed ‘transformation, technology absorption and doctrinal evolution at the centre of its modernisation efforts’ (Indian Army, 2024). Yet history suggests that

new technology alone rarely changes battlefield outcomes. What matters is how quickly an army identifies the emerging operational problems, tests possible solutions and incorporates successful ideas into doctrine, training and force development. Every exercise, operational deployment and field innovation offers valuable lessons, but too many remain local, are addressed through temporary fixes or fade away as people and priorities change. The challenge is therefore not a shortage of ideas; it is ensuring that good ideas become institutional capability rather than isolated success stories.

This paper argues that the next phase of military transformation should focus as much on how the Army adapts as on what it acquires. It proposes an Operational Adaptation Cycle that provides a practical approach for converting operational observations into enduring military capability. More importantly, it argues that military adaptation should become a routine institutional function rather than an activity associated only with innovation initiatives or technology projects. In future warfare, the decisive advantage may belong not to the army that innovates first, but to the one that learns, adapts and institutionalises change faster than its adversary.

From Problem Solving to Problem Definition

Military organisations rarely suffer from shortage of ideas. Every exercise, operational deployment and training activity generates observations that can improve operational effectiveness. Yet only a few evolve into enduring military capability. The challenge is therefore not generating innovation, but ensuring that right ideas survive beyond individual units and become part of the Army's institutional memory.

Part of the reason lies in the nature of the military profession. We are trained to solve problems quickly. When faced with an operational challenge, our instinct is to look for a better weapon, a new technology or a revised tactical procedure. Rarely do we ask whether the problem itself has been correctly defined. Unless there is a common understanding of the problem, different organisations will often pursue different solutions to what is essentially the same issue. Effective military adaptation therefore begins not with finding better answers, but with defining the right problem (Department of the US Army, 2022).

Distinguishing symptoms from problems is equally important. Delays in decision-making, recurring equipment modifications or increasing manpower requirements may appear to be separate issues, yet they often stem from the same doctrinal, organisational or procedural limitation. Addressing the visible symptom may improve performance temporarily without resolving the underlying cause. Good problem definition therefore demands evidence, context and validation

before institutional effort is committed. Premature solutioning can be just as costly as delayed decision-making.

A second challenge is that operational observations often remain local. A lesson identified by one unit may appear tactical in isolation, but when similar observations emerge across formations they usually point to a broader operational issue. No single formation is likely to see the complete picture. Institutional learning begins only when dispersed observations are brought together, recurring patterns are recognised and priorities are established (NATO Joint Analysis and Lessons Learned Centre [JALLC], 2023). Since institutional attention and resources are finite, deciding which problems deserve attention is often as important as deciding how to solve them.

Military adaptation is therefore less about generating more ideas and more about ensuring that the right problems are identified, understood and acted upon. In future warfare, armies that master this discipline are likely to adapt faster and convert operational experience into enduring military capability more effectively than their adversaries.

An Approach for Institutional Adaptation

If capability development depends upon the quality of problem definition, the obvious question follows: How should an operational challenge progress from a field observation to an institutional capability? While every operational situation is unique, the underlying approach should remain consistent. Rather than treating innovation as a series of isolated activities, the Army requires a structured process that systematically converts operational experience into combat capability.

The process begins with operational observations generated during exercises, operational deployments, training activities, technology demonstrations and the study of contemporary conflicts. Individually, these observations are simply data points. Collectively, they reveal recurring patterns that may indicate emerging operational challenges. The objective is not merely to collect observations, but to aggregate them across formations and identify common trends.

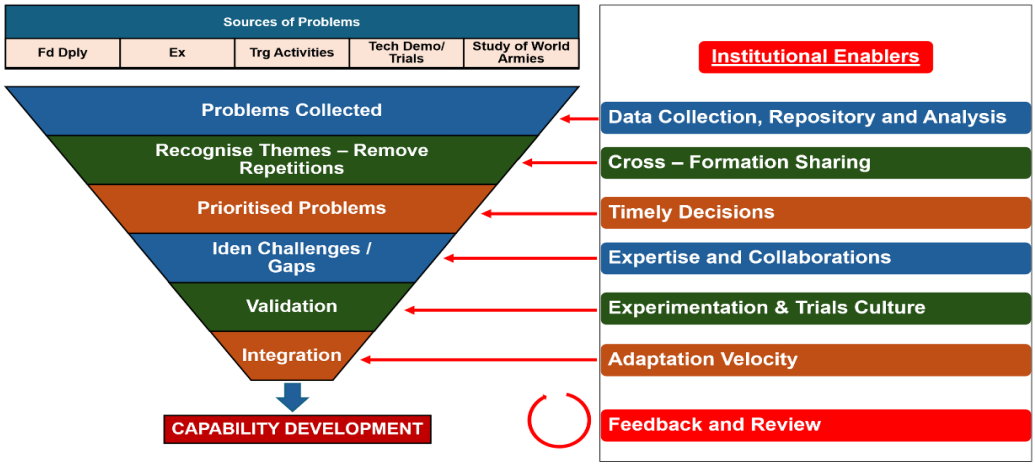
When the same observation repeatedly emerges across exercises and deployments, it is rarely a coincidence. More often, it reflects operational friction that deserves closer examination. Such friction may appear as delays in decision-making, reduced operational tempo, excessive manpower requirements, equipment limitations or procedural constraints. Importantly, friction should not automatically be viewed as a capability gap. Many such issues can be resolved through changes in

doctrine, training, organisation or tactics without introducing new technology. Correctly identifying the source of friction is therefore as important as recognising the friction itself.

Only after systematic analysis should operational friction be recognised as an operational problem. At this stage, it should be supported by evidence, validated across multiple operational contexts and expressed in terms of its operational effect. A sound problem statement should answer four questions: What is happening? Why does it matter? Under what conditions does it occur? What operational effect is desired? Clear problem definition ensures that subsequent effort is directed towards solving a common problem rather than competing interpretations of it.

Not every operational problem should become an institutional priority. Organisational attention, resources and time are finite. Prioritisation should therefore consider operational impact, urgency, scalability, affordability and the maturity of available solutions. Capability development must also remain a 'problem-before-product' (Indian Army Design Bureau & Society of Indian Defence Manufacturers, 2023).

Figure 1: Converting Operational Problems into Priorities: Filtering Operational Problems to Focus Effort on Challenges



Source: Prepared by the Author

The starting point should never be an available technology, but a validated operational requirement (Headquarters Integrated Defence Staff, 2017). Only those challenges that cannot be addressed through existing doctrine, training, organisation or procedures should progress as capability gaps requiring structured experimentation.

Experimentation transforms assumptions into evidence. Rather than debating which solution appears most promising, commanders should compare technological, doctrinal, organisational and

procedural alternatives under realistic conditions and allow evidence to guide decisions. Validation marks the beginning—not the end—of capability development. Successful outcomes must then be incorporated into doctrine, training, organisational practices and future force development, while continuous operational feedback ensures they remain relevant as warfare evolves. In this way, the Operational Adaptation Cycle becomes a continuous process through which operational experience is converted into enduring military capability.

Challenges in Institutional Adaptation

The Operational Adaptation Cycle provides a practical approach for converting operational experience into enduring military capability. Implementing such an approach, however, is rarely straightforward. Military organisations must maintain current operational readiness while preparing for future conflict, standardise procedures while encouraging innovation and make timely decisions despite technological uncertainty and resource constraints. Balancing these competing demands often leaves little time or institutional attention for systematic learning and experimentation.

The challenge, therefore, is not the absence of ideas but embedding adaptation within the Army's routine way of working. Rather than creating additional organisations or parallel processes, the focus should be on strengthening existing systems of training, planning, experimentation and capability development. This requires adaptation to become a shared command responsibility, supported by processes that identify operational problems early, validate solutions objectively and rapidly incorporate successful outcomes into doctrine, training and organisational practice. The following enablers provide one possible approach to achieving this.

Enablers for Adaptation

Defining the Right Problem. Capability development rarely fails because we lack solutions. More often, it fails because we solve the wrong problem. Every exercise, operational deployment and training activity throws up valuable observations, but only a few point to challenges with wider operational significance. Before searching for solutions, we must first agree on what the problem really is. That calls for evidence, collective analysis and validation across formations. The objective is simple: keep capability development problem-led, not technology-led.

Prioritising Institutional Effort. Every operational problem deserves attention, but not every problem deserves the Army's immediate attention. Time, resources and organisational bandwidth are always limited. Choosing one priority means another will have to wait. The real challenge is deciding

where institutional effort will deliver the greatest operational payoff. Good prioritisation is therefore not about doing more—it is about focusing on what matters most.

Making Experimentation Routine. Ideas should prove themselves in the field, not in conference rooms. Experimentation must become part of routine military business rather than an occasional innovation campaign (US Army, 2023). Every major exercise should test current procedures and answer at least one question about future warfare. When different approaches are tried under realistic conditions, evidence replaces opinion and better decisions follow.

Accelerating Capability Validation. A good idea has little value if it takes years to validate. Operational needs evolve quickly and capability development must keep pace. Faster administrative support, rapid prototyping, access to specialist expertise and objective evaluation can significantly shorten the journey from observation to implementation (US Army, 2023). In future warfare, the speed of validation may be as important as the quality of the idea itself.

Preserving Institutional Learning. The Army gains experience every day. The real question is how much of that experience it actually retains. Valuable lessons are often rediscovered because people move, appointments change and institutional memory fades. Formal lessons-learnt systems are important, but they are not enough. Professional reading, military writing, discussion forums and networks of officers working on similar problems are equally important if knowledge is to survive beyond individual tenures (ARTRAC, 2018).

Integrating Capability Development. A successful experiment is only the beginning. Its real value lies in changing the way the Army fights. Validated ideas must quickly find their way into doctrine, training, standard operating procedures, organisational structures and future acquisitions (Headquarters Integrated Defence Staff, 2017). That also demands closer collaboration between operational formations, training establishments, scientists, industry and academia. Capability development succeeds only when all these stakeholders work towards the same operational outcome.

Reviewing Institutional Capability. No capability remains relevant forever. Every capability is created to solve a particular problem and both the problem and the battlefield continue to evolve. Periodic reviews should therefore examine whether existing capabilities still meet operational needs or whether they require refinement, replacement or retirement. An adaptive Army is one that is willing to question yesterday's solutions before the battlefield does.

Building Shared Ownership. Adaptation cannot be left to innovation cells or specialised organisations. A platoon commander may identify a problem, a brigade may validate it and a doctrine organisation may institutionalise the solution. Every level therefore has a role to play. When commanders see adaptation as part of command responsibility rather than an additional task, institutional learning becomes faster and far more effective.

Building an Adaptive Culture. Processes and structures can support adaptation, but they cannot create it. People do. Leaders set the tone by encouraging curiosity, rewarding thoughtful experimentation and creating an environment where questioning accepted practices is seen as professional rather than disruptive. In the end, the greatest military advantage may belong not to the army that acquires new technology first, but to the one that learns faster, adapts quicker and turns experience into enduring capability.

Conclusion

The Indian Army's transformation is already well underway. New technologies, modern equipment and revised doctrines will undoubtedly strengthen future capability, but they are only part of the answer. The greater challenge is building an institution that can recognise change early, define operational problems correctly, test solutions objectively and rapidly convert successful ideas into Army-wide capability. The Operational Adaptation Cycle proposed in this paper offers one way of achieving that objective. More importantly, it shifts the focus from innovation as a series of isolated activities to adaptation as a continuous institutional process. Every exercise, operational deployment and field innovation should become an opportunity not only to improve current performance but also to strengthen the Army's future capability.

Ultimately, the decisive advantage in future conflict may not belong to the army with the most advanced technology or the largest number of innovative ideas. It is more likely to belong to the army that learns faster than its adversary, adapts more quickly and systematically turns operational experience into enduring military capability.

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