Examining the US Defence Acquisition Apparatus
What can India Learn?

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The United States (US) defence acquisition apparatus, arguably the biggest in the world, has undergone several reforms in the past 100 years. The reforms, which have focused on both structural and procedural aspects of acquisition, have led to establishment of authority and accountability in acquisition; articulation of a detailed regulatory mechanism; a dedicated university to impart training to acquisition workforce; and a clear incentive structure for the domestic industry. Some of the US reforms could be of use for India that has been struggling in its efforts to streamline its own acquisition system. India could learn from the US system of an acquisition czar dealing with all aspects of acquisition, besides imbibing the good practices pertaining to programme management, joint capability planning, human resource management and domestic industry's greater participation in acquisition.

The US acquisition apparatus is known for churning out a vast range of advanced weapon systems that are widely recognised as the best in the business. At the same time, the apparatus also faces constant criticisms for failing to deliver the promised weapon systems as per the initially agreed cost, time and technical performance criteria. The criticism has, in turn, led to many reform initiatives, bringing changes in the regulations, organisational structure and decision-making process, besides focusing on improving both the quality and quantity of workforce involved in the acquisition. The article explores the US defence acquisition system as it exists today, with the intention of drawing certain best practices for

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a country like India which has made some determined efforts in recent years to reform its own acquisition structure and processes. In so doing, the article primarily focuses on some key reforms undertaken by the US, the role and functioning of the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics (USD[AT&L]), various human resource improvement programmes, the regulatory framework for acquisition, the incentives for the local industry and the acquisition process. The article, however, begins with a definitional aspect of acquisition as understood in the American context, followed by a brief statistical survey of the US defence acquisition.

Defining Defence Acquisition

Defence acquisition is often confused with procurement, though there is a vast difference between the two. A clear distinction between them is provided by the Defense Acquisition University (DAU) of the US Department of Defense (DoD), which maintains an official glossary of acquisition-related acronyms and terms. The DAU defines procurement as the 'act of buying goods and services for the government', whereas acquisition is defined as 'the conceptualization, initiation, design, development, test, contracting, production, deployment, integrated product support (IPS), modification, and disposal of weapons and other systems, supplies, or services (including construction) to satisfy DoD needs, intended for use in, or in support of, military missions.'[1] It is thus clear that procurement, as a mere contracting function, is a small component subsumed under the wider acquisition functions.

The US Defence Acquisition: A Statistical Perspective

The US is by far the biggest spender on defence acquisition, supported by a massive defence budget estimated at $617 billion for the financial year 2017.[2] With an annual outlay of over $100 billion, its procurement budget alone is bigger than the official defence budget of any other country in the world except China. Spending such a staggering amount involves a vast machinery that includes an acquisition workforce of over 150,000 personal, a plethora of regulations running into thousands of pages and a large industry comprising nearly 20,000 contractors. The Defense Contract Management Agency (DCMA), which is responsible for all 'contracting aspects from pre-award to closeout', manages, at any given time, more than 340,000 active contracts. The value of these

contracts totals over $1.8 trillion[3]—a sum that exceeds the gross domestic product (GDP) of all but eight largest countries in the world (the US, China, Japan, Germany, France, the United Kingdom [UK], India and Italy). Every day, the Agency authorises over half-a-billion dollars worth of payments to the contractors.

Acquisition Reforms: A Snapshot

The acquisition apparatus that exists today in the US is the result of more than 100 years of continuous reforms by the American authorities, who have particularly been frustrated by corruption, mismanagement and inefficiency in defence acquisition. The malpractice in defence acquisition goes as far back as the early 1860s when President Abraham Lincoln asked his Secretary of War, Simon Cameron, to resign largely due to the corruption allegations in the war department.[4] More than a century after Simon's removal, a major corruption scandal again haunted the defence department in 1988 when the Federal Bureau of Investigation (FBI) searched several defence companies and investigated a number of high-ranking DoD officials over corruption allegations. The investigation led to more than 60 convictions.[5] As recently as in 2004, a top US Air Force procurement official along with senior officials of a defence company, Boeing, pleaded guilty for inflating a tanker aircraft deal that would have costed $6 billion more to the taxpayers if the contract had been awarded unchecked.[6]

Apart from the above-mentioned examples, defence acquisition has often captured public imagination over the sheer lack of imagination in dealing with procurement of mundane items. The military specifications of 18 pages detailing what ingredients constitute a fruitcake and overpriced wrenches, electrical cables and lamp sockets are few of the examples that have angered the public about the rigidity and undue complexity of the acquisition system.[7]

Of late, however, much of the focus on defence acquisition has been on recurring cost and time overruns and performance shortfalls of the weapon systems. To overcome these recurring problems, it has been the endeavour of every administration and virtually every head of the defence department to undertake some reform efforts. The Congress, on its part, has been quite active in undertaking reforms either through the annual National Defense Authorization Act (NDAA) or through standalone legislations. The NDAA for the financial year 2017 has, for

instance, suggested a division of the present job of USD(AT&L) between the Under Secretary of Defence (Acquisition and Sustainment) and the Under Secretary of Defense (Research and Engineering) (USD[R&E]).[8] The division, which is likely to be completed by February 2018, will essentially take the existing acquisition structure to the one that existed prior to the 1980s reforms.

Since World War II, nearly 150 studies have been undertaken to streamline various aspects of defence acquisition. Some of the major changes effected through these studies include:[9]

1.. Creating Federal Acquisition Regulation (FAR) to develop uniform acquisition regulations.
2. Establishing the DAU to improve the quality and performance of the acquisition workforce.
3. Instituting a streamlined management chain (programme manager [PM]–programme executive officer–service acquisition executive–under secretary of defence) to foster accountability and authority.
4. Implementing a milestone decision process to improve oversight.
5. Using multi-year procurement to promote cost efficiency (with Congressional approval).
6. Requiring independent cost estimates to improve budgeting forecasting.
7. Establishing a joint requirements board to improve requirements development and eliminate duplicative programme.
8. Moving away from military standards and specifications to promote the use of commercial technologies.

Centralised Policymaking, Decentralised Execution

The basic principle of the US defence acquisition apparatus is the centralised policymaking and decentralised execution. On the ground, this means that while the USD(AT&L) is responsible for policymaking and oversight, the real execution of weapons programmes is the responsibility of the concerned DoD component. The principle came into existence in the late 1980s after the implementation of the recommendations of the Blue Ribbon Commission, which was set up by the President Regan under the chairmanship of former Deputy Secretary of Defense and noted industrialist, David Packard. The recommendations of the Packard Commission resulted in the creation of a post of acquisition czar

in the DoD in the form of Under Secretary of Defense for Acquisition or USD(A) (the title was changed to its present name of USD[AT&L] in 1999) and a streamlined chain of command that runs from the PMs to programme executive officer to service acquisition executive and finally, to the USD(AT&L).

The post of USD(A) was created by replacing the post of USD(R&E). With the creation of new post, the DoD's acquisition czar was given the primacy to take precedence in all acquisition matters after the Secretary of Defense and the Deputy Secretary of Defense, thereby creating a single point of authority and accountability in the DoD as far as management of weapons programme is concerned. This marked a major change from the earlier era of the 1950s when the DoD had very little influence over the weapons programme with 'each service buying weapon systems suitable for the kind of conflict it envisioned.'[10] Presently, the role of the USD(AT&L) is broadly divided into four major areas:

1. Supervising DoD acquisition.
2. Establishing policies for acquisition (including procurement of goods and services, research and development [R&D], developmental testing and contract administration) for all elements of the DoD.
3. Establishing policies for logistics, maintenance and sustainment support for all elements of the DoD.
4. Establishing policies of the DoD for maintenance of the defence industrial base of the US.[11]

In discharging its responsibility, the USD(AT&L) is supported by more than a dozen assistant secretaries and directors who are responsible for various aspects of policy and oversight. It is important to note that the much-acclaimed Defense Advanced Research Projects Agency (DARPA), which is at the centre of many cutting-edge technology, is headed by a director who reports to an assistant secretary responsible for defence research and engineering, who, in turn, reports to the USD(AT&L).

As part of the decentralisation policy following the implementation of Packard Commission's recommendations, the responsibility of managing programmes is that of the individual programme office located within the concerned military department. The programmes office is headed by the PM who is either a civilian or a military officer. The PM is responsible for all facets of the programme and is supported by a diversified staff consisting of engineers, logisticians, contracting specialists, budget and

financial experts and test and evaluation personnel. The PM usually reports to the programme executive officer, who like the PM can be either from the military or a civilian federal government employee. The programme executive officer, who can have a number of PMs under him, reports to the service acquisition executive, who is a presidential appointee in the rank of assistance secretary. The service acquisition executives report to their respective service secretary and the USD(AT&L).[12]

Split of USD(AT&L): Causes, Pros And Cons

The US Congress's decision to enact a law to reorganise the DoD acquisition office and create a dedicated USD(R&E) was largely driven by some of the influential members' view that the Office of the USD(AT&L) has 'structurally grown too large to focus on both delivering "game changing" technology and management of defense acquisition system processes.'[13] Some of them were particularly concerned about the US's ability to maintain technological superiority over their adversaries. They, in turn, wanted dedicated focus on innovation to retain the US' monopoly in critical defence technology. The members spoke of the 1980s when the USD(R&E) led the development of path-breaking technologies, including stealth, precision strike and command, control, communication and intelligence (C3I). In other words, by creating a dedicated Under Secretary for R&D, the US Congress was hopeful of replicating the technological successes that were achieved in the earlier era.

However, the critics of the new arrangement did not agree with the Congress's rationale. Immediately after the Congress put up its proposal, the Obama administration made its opposition clear by stating that the Congress's proposition would reverse the reforms undertaken in the previous two decades and bring the DoD to:

> [an]era in which overly optimistic cost estimates, inadequate system engineering and developmental testing, inappropriate reliance on immature technologies, ineffective contractor management, and lack of focus on life-cycle costs by the military departments led to explosive cost growth and the failure of multiple major defence acquisition programs.[14]

Despite the opposition, the Obama administration did not block the Congress's move; and this is a line also taken by its successor. In fact, the Trump administration has already submitted a plan to split the Office

of the USD(AT&L). Given the sharp divergence of views, only time will reveal the efficacy of the new proposal to split the existing arrangement.

Acquisition Workforce

The US defence workforce totals over 156,000 people, of which nearly 90 per cent are civilians, with the rest being uniformed. The predominantly civilian workforce is organised along 14 different career fields, of which four—engineering, contracting, life cycle logistics and programme management—account for nearly the bulk of the workforce (69 per cent in 2015; see Table 1).

Notwithstanding such a huge workforce, the quality of manpower has been a key concern for the US authorities. Lack of education and training and poor incentive to retain talent have been identified as the principal causes for the suboptimal performance of the workforce. It has been widely acknowledged that 'successive waves of acquisition reforms have generally yielded limited results, due in large part to poor management by the acquisition workforce.'[15] It has therefore been

Table 1 Acquisition Workforce, FY 2015

Career Field	*Workforce Size*	*% of Total*
Engineering	41,050	26.26
Contracting	30,230	19.34
Life Cycle Logistics	19,222	12.30
Programme Management	16,585	10.61
Production, Quality and Manufacturing	9,822	6.28
Test and Evaluation	8,692	5.56
Facilities Engineering	6,986	4.47
Information Technology	6,402	4.10
Business (Financial Management)	6,205	3.97
Auditing	4,316	2.76
Science and Technology Manager	3,681	2.35
Business (Cost Estimate)	1,346	0.86
Purchasing	1,330	0.85
Property	400	0.26
Unknown/Other	46	0.03
Total	156,313	100.00

Source: USD(AT&L), *Performance of the Defence Acquisition System: 2016 Annual Report*, Washington, DC: DoD, 2016, p. 120.

acknowledged that 'improving the acquisition workforce…[is a] critical part of any comprehensive acquisition reform efforts.'[16]

In a path-breaking move to improve the quality and effectiveness of acquisition workforce, the US Congress enacted the Defense Acquisition Workforce Improvement Act (DAWIA) in 1990, mandating, among other things, 'development of education, training, and qualification requirements for the designated acquisition positions.'[17] A key instrument for the implementation of the Act was the DAU, which was set up to impart training to the acquisition personnel.

Functioning as premier corporate university with five branches across the US, the DAU provides both classroom and online courses, allowing the workforce to be certified at three levels (Levels I, II or III).[18] Each level mandates the minimum required education, training and experience that an acquisition functionary is required to possess to hold an appointment. For instance, Level III certification for a programme management job requires, among other things: (a) education in a master's degree in engineering system acquisition management or related filed; (b) experience of at least 24 semester hours from among accounting, business, finance, law, contracts, purchasing, economics, industrial management, marketing, quantitative methods and organisation and management; and (c) training as per prescribed courses.

In addition to the above, there are also numerous other provisions to enhance the effectiveness of the acquisition personnel. Two recent provisions in this regard are: the Defense Acquisition Workforce Development Fund (DAWDF) and the strategic plan for the acquisition workforce. The DAWDF, which was enacted in 2008, is intended to 'provide funds, in addition to other funds that may be available, for the recruitment, training, and retention of acquisition personnel of the Department of Defence.'[19] In FY 2015, the DoD provided $560 million to the fund in view of the aforementioned act.[20] The Acquisition Workforce Strategic Plan, on the other hand, is a biennial action document in which the DoD outlines its goals and strategies to help sustain and improve the capacity and capabilities of the acquisition workforce. In the latest plan document for the year FY 2016–21, the DoD has outlined four key goals to achieve: 'Make the DOD an employer of choice; shape the acquisition workforce to achieve current and future acquisition requirements; improve the quality and professionalism of the acquisition workforce; and continuously improve workforce policies, programs, and processes.'[21] This, together with other initiatives mentioned earlier, does indicate

the seriousness accorded to the manpower aspects of acquisition in the US.

Regulatory Framework

The regulatory framework governing the US defence acquisition is complex, consisting of numerous rules and guidelines and running into more than 5,600 pages (Table 2). At the macro level, the procurement activities of the DoD are broadly governed by three set of federal government regulations. The first set of regulations, which applies to the whole of federal government, is provided in the form of FAR. The second set of regulations, which applies to only the DoD, is contained in the Defense Federal Acquisition Regulations Supplement (DFARS). The third set of regulations is applicable to the individual DoD components (such as the army, navy, marine corps, air force, defence logistics agency and the US special operations command) and is found in the component-unique FAR supplements.[22]

In addition to these, the acquisition authorities are also governed by numerous other directives, instructions and guidelines. These include the DoD Directive 5000.01, DoD Instruction 5000.02 and the *Defense Acquisition Guidebook*. While the directive deals with 'management principles and mandatory policies and procedures for managing all acquisition programmes', the instruction provides the detailed procedures to be followed in acquisition programmes. Both the directive and instruction refer to a host of other regulations, each of which guide various aspects of acquisition, including, for example, planning, budgeting, cost assessment, logistics support, reliability, interoperability, technical performance and milestone reporting. The *Defense Acquisition*

Table 2 Defence Acquisition: Select Regulations and Guidelines

Regulation	*No. of Pages*
Federal Acquisition Regulation (FAR)	2,706
Defense Federal Acquisition Regulation Supplement (DFARS)	1,462
Component-unique FAR Supplements	188*
DoD Directive 5000.01	10
DoD Instruction 5000.02	42
Defense Acquisition Guidebook	1,200

Source: Available at https://www.acquisition.gov/.

Note: * The page number for the Navy Marine Corps Acquisition Regulation Supplement only.

Guidebook, on the other hand, prescribes the best practices and the detailed procedure for use by the acquisition authorities.

Preference to Local Industry

An important component of the US defence acquisition is the policy of providing preference to local industry over the foreign vendors. Central to this policy are three specific laws: the Buy American Act; the Berry Amendment; and the Speciality Metals Restrictions. The Buy American Act is by far the oldest and best-known statute that discourages procurement of foreign products in federal procurement contracts. Enacted first in 1933, the Act requires the federal agencies to procure domestic end products and construction materials in contracts exceeding a certain value (usually $3,500). As implemented, the 84-year old Act establishes a price preference for the domestic bidders. The price preference usually varies from 6 per cent (in case the lowest domestic bid comes from a large US company) to 12 per cent (when the US bid is from a small company) and 50 per cent (for defence procurement). The highest price preference for defence procurement is a clear indication of the importance attached to preserving the domestic defence R&D and manufacturing base.

The Berry Amendment and the Speciality Metals Restrictions, the origin of which dates back to the pre-World War II era, are, on the other hand, specific to defence procurement and intended to insulate the US defence industrial base by prohibiting procurement of certain items from foreign sources. The laws are also intended to bridge a crucial gap in the Buy American Act which treats a product as domestic product as long as the product is a commercial off-the-shelf (COTS) item or if the cost of parts and components of a product mined, produced or manufactured in the US is more than 50 per cent. Both the Berry Amendment and the Speciality Metals Restrictions do away with any concession and require items to be fully indigenous in origin. As implemented in the public law, the Berry Amendment mandates the DoD to purchase such items as food, clothing, tents, certain fabrics and hand and measuring tools to be entirely 'grown, reprocessed, reused, or produced in the United States'.[23] The Speciality Metals Restrictions prohibit the DoD from purchasing aircraft, missile and space systems, ships, tank and automotive items, weapon systems, ammunition or any components thereof if they contain any speciality metal that is not melted or produced in the US. It defines a metal as speciality metal if

it includes 'certain types of steel; certain metal alloy made of nickel, iron-nickel and cobalt; titanium and titanium alloys; and zirconium and zirconium alloys.'[24]

It is, however, to be noted that all the three US laws regulating domestic content requirements have certain exemptions under which the federal agencies (including the DoD) can purchase foreign products. These waivers are provided under certain conditions that include unavailability and the US's obligation under the various international treaties, among others. However, obtaining an exemption is easier said than done and when it comes to defence procurement, waivers are few and far between. Consequently, almost all the defence contracts are bagged by the US defence companies. In 2015, only a mere 4 per cent of all DoD procurement contracts were placed with foreign entities, with the rest being captured by the US defence companies.[25] It has been argued by many that these laws have been used effectively by the US policymakers to nurture, preserve and develop what now is the most powerful defence industry in the world.

Acquisition Process

The US defence acquisition process is broadly captured in three interrelated and interdependent systems, commonly referred to as 'Big A' acquisition (Figure 1). These systems are: the Joint Capabilities Integration and Development System (JCIDS); the Planning, Programming, Budgeting

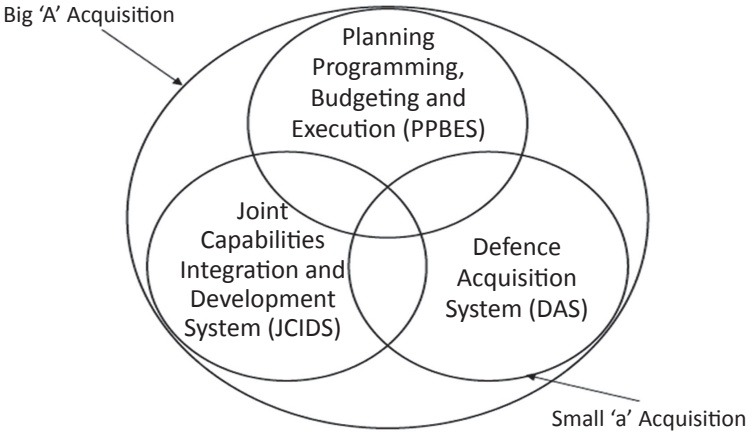

Figure 1 Defence Acquisition Structure

Source: Stephen Howard Chadwick, 'Defense Acquisition: Overview, Issues, and Options for Congress', Congressional Research Service, 4 June 2007, p. 4.

and Execution System (PPBES); and the Defense Acquisition System (DAS), also known as 'Little a' acquisition. Every weapon system must go through these three systems before finding a place in the US arsenal.

Joint Capabilities Integration and Development System (JCIDS)

The JCIDS is the principal means by which the US DoD identifies, assesses and prioritises joint military capability for the US forces. Established in 2003, the system replaced the earlier Requirements Generation System (RGS) which was used as the basis for identifying services' requirements in the previous 30 years. The replacement was necessitated due to the DoD's change in policy from 'threat based assessment of war fighter requirements to a capabilities-based assessment of war fighter needs.'[26] In essence, the new policy of 2003 is a top-down approach of assessing the joint capability requirement 'to meet the strategic direction and priorities set forth in high-level strategy and guidance documents such as the National Military Strategy, National Defense Strategy and Quadrennial Defense Review.'[27] The shift to the capability-based approach was intended to 'promote a more collaborative method of identifying capability gap across the services instead of each service developing its own response',[28] which was the practice earlier under the RGS with obvious scope for duplication.

The JCIDS is governed by a set of established instructions and procedures. The system begins with conduct of capabilities-based assessment (CBA) to assess the military's capability requirements and voids. Based on the assessment, it recommends both the material and non-material solutions to address the identified gaps. If a material solution is found necessary, then an initial capabilities document (ICD) is prepared, justifying the need for a material solution to address the identified capability voids. The ICD is put up for approval by the Joint Requirements Oversight Council (JROC), an advisory body chaired by the Vice Chairman of the Joint Chiefs of Staff with members of military services and combat commands. The JROC may approve the ICD or suggest a non-material solution (such as change in strategy or tactics) to address the identified gaps. However, since JROC serves as an advisor to the Chairman of the Joint Chiefs of Staff, its recommendations are advisory in nature. The final decision therefore rests with the higher authorities, namely, the Chairman of the Joint Chiefs of Staff and the Secretary of Defense.

Planning, Programming, Budgeting and Execution System (PPBES)

The PPBES is the principal mechanism by which the DoD requests, allocates, tracks and expends funds made available to department. It is intended to provide the DoD with the 'best mix of forces, equipment, manpower and support within the fiscal constraints.'[29] This system, which is unique to the DoD alone, dates back to 1961 when the then Secretary of Defense, Robert McNamara, created the Planning, Programming and Budgeting System (PPBS) as the means for allocation of DoD resources. The PPBS was renamed to the current PPBES in 2003.[30]

As the name suggests, the PPBES has four distinct stages: planning, programming, budgeting and execution. In the first stage, the future requirements (upto 20 years) of the military are examined keeping in view the various objectives and priorities set forth in key documents, such as Quadrennial Defense Review (QDR), National Security Strategy (NSS) and National Military Strategy (NMS), as also the emerging threats, technology development, cost effectiveness and alternative strategies. The findings of this process are captured in the Joint Planning Guidance (JPG). Based on the JPG, various DoD components propose their acquisition programmes. In the second stage of programming, the details of each programme proposed in the JPG are elaborated in programme objective memorandum (POM), outlining the objectives of the proposed programme, the mission needs and also the budgetary requirements for the coming five years. The POMs of all the DoD components thus help the higher authorities to understand the funding requirement in future years based on the decision taken in a given year.

The budgeting process runs concurrently along with the programming. Under the guidance of the Office of Management and Budget (OMB), the DoD prepares the unified budget of the department by taking into account the budget requirement for the first year of the five-year POM. The unified budget is incorporated into the President's budget which is forward to the Congress. In the fourth phase of execution, programmes are monitored against the established performance and cost parameters.

Defense Acquisition System (DAS)

The DAS, or the 'Little a', is the DoD's management process for developing and buying weapons and other systems for the US forces. The system is governed by the DoD Directive 5000.01 (The Defence Acquisition System) and DoD Instruction 5000.02 (Operation of the

Defence Acquisition System). These are complemented by the *Defence Acquisition Guidebook*.

The defence acquisition in the US, by and large, follows what can be termed as 'Make' approach in which the domestic defence industry plays the central role in design, development, production and sustainment. To oversee and manage acquisition programmes, the DAS uses 'milestones', which 'serve as gates that must be passed through before the program can proceed to the next phase of the acquisition process. To pass a milestone, a program must meet specific statutory and regulatory requirement and be deemed ready to proceed to the next phase of the acquisition process.'[31] The authority responsible for certifying that a programme meets the milestone criteria is known as Milestone Decision Authority (MDA), who, depending on the programme, could be either the USD(AT&L), or the chief of the concerned DoD component or a component acquisition executive.

Any programme that enters the DAS must be based on approved user requirements or ICD. Before the programme enters the DAS, the ICD, prepared through JCIDS, is once again used to decide if a material solution is at all required to fill up particular capability gap or a non-material solution could address the gap. If the decision is taken in favour of material solution, then analysis of alternatives is undertaken to find best solution among the competing alternatives, keeping in view the cost effectiveness, lifecycle cost of ownership and technology risks, among others. The solution so identified is then processed under the DAS, for which a lead agency is identified to take the programme forward. The lead agency sets up a programme office under a PM to manage the programme. The progress is monitored through the laid-down milestones.

There are three milestones in the DAS: (a) Milestone A, for initiating technology maturation and risk reduction activities; (b) Milestone B, for permitting engineering and development; and (c) Milestone C, for series production and deployment. To pass Milestone A, the lead agency submits to the MDA a detailed acquisition strategy along with cost estimates of the programme and the evidence of five-year funding commitment for the programme. The MDA approval at this stage leads to short listing of companies that are awarded prototype development contract. The prototype development allows the authorities to assess if the technologies and design are matured to meet the military objectives while remaining within the affordable limit. Based on this, the programme office updates

the acquisition strategy with revised cost and technical specifications for approval by Milestone B.

At the Milestone B, the MDA, besides examining all the updated inputs submitted by the programme office, also takes into account cost inputs from an independent source outside the concerned military service. This is to ensure that the programme is within the cost limits. The MDA's approval at this stage leads to full system integration. The performance, cost and timelines agreed at this stage serve as benchmarks against which future progress is monitored. At the stage, while the programme office monitors the day-to-day progress, it relies heavily on external test and evaluation agency to certify if the product meets the criteria of effectiveness, suitability and survivability. Only when the product passes the test and evaluation phase, it moves to the final milestone. The Milestone C approval paves the way for production and deployment. The production however begins at a low rate initially, to allow the manufacturing and quality control process to stabilise, before full-scale production is permitted.

The US Defence Acquisition Apparatus: Some Areas of Concern

For sure, the US authorities (both the US Congress and the DoD) have made numerous efforts to streamline both the structure and procedures of acquisition. These reforms, while having some benign effects, however have not worked to their fullest potential. Weapon systems still cost more than budgeted, take more time than scheduled and deliver less capability than initially promised.[32] The Government Accountability Office (GAO), which is mandated by the US Congress to review major defence acquisition programmes of the DoD, has often highlighted these concerns. The 2017 report, for instance, finds $484 billion cost growth in 78 major weapon programmes.[33]

According to J. Ronald Fox, a faculty of the Harvard Business School and a former Assistant Secretary responsible for procurement for the army, the cost, time and performance shortfalls are largely attributed to two factors: the counterproductive incentives built in the acquisition system; and the lack of the skills, training and continuity of the acquisition personnel.[34] Fox argues that good management practices, such as 'realistic estimating, thorough testing and accurate reporting',[35] do not find much application on the ground, although they are applauded in the policy circles. On the other hand, not-so-sound management principles such as

low estimates and concurrency are appreciated as they do not threaten the continuity of programme. He also argues that the government officials responsible for managing big acquisition programmes have different perceptions from those in the industry and very rarely do both sides find a common ground to work together. To add to the problem, politically appointed senior acquisition officials do not stay long in the job to take reforms to the logistical conclusion. The lack of continuity is particularly acute in case of PMs who are supposed to be the linchpin of any programme. James O'Bryon, a veteran on defence acquisition, notes that the tenure of a US defence PM is typically two to three years. Such a short tenure does not allow continuity in decision making and creates a situation whereby the PMs often focus on addressing short-term problems, pushing the difficult ones to their successors.[36] Compounding the problem, the skill sets and training provided through the existing courses of the DAU are not adequate to handle real-life problems faced by the acquisition functionaries. Addressing these concerns, argue many analysts, would pave the way for further improvements in defence acquisition.

What can India Learn from the US?

India's defence acquisition apparatus, consisting of hierarchical structures and procedures, has evolved over the years. The structure comprising the Defence Acquisition Council (DAC) at the top and three subordinate boards—one each for procurement, production and R&D—was first established in 2001. Under the Defence Procurement Board functions the Acquisition Wing (headed by Director General [Acquisition]), which assists the board in all matters pertaining to capital procurement. The procedures, as captured in the Ministry of Defence's (MoD) capital procurement manual—Defence Procurement Procedure (DPP)—came into existence in 1992 and have been revised several times since, with the DPP-2016 being the largest in the series.[37] The structure and procedures, while having a great impact on the way India's defence procurement has traditionally been undertaken, have however not been adequate in expediting procurement. An indication of the defence acquisition system's suboptimal performance is evident from the massive surrender of funds meant for defence acquisition. Between 2006–07 and 2015–16, total surrendered funds on this account reached more than Rs 51,500 crore.[38] This, in turn, raises the questions as to what additional reforms can India undertake to streamline its acquisition system. Discussed

below some of the best practices from the US acquisition apparatus that the Indian policymakers could contemplate implementing.

Indian acquisition reforms are mostly centred on process, leaving the structural aspects largely untouched. This is where India could learn a few lessons from the US which has established a centralised structure in the form of USD(AT&L) with the responsibility of policymaking and oversight of all acquisition functions. Until the US Congress decided to carve out a dedicated Under Secretary for R&D with effect from February 2018, the USD(AT&L)'s responsibility covered the entire acquisition functions, including, besides the R&D, manufacturing, test and evaluation and contracting. In India, however, the Director General (Acquisition)'s influence does not go beyond contracting, leaving functions such as R&D, production, quality assurance, and payment to be handled by others. This not only creates diffusion of responsibility but also dilutes acceptability. India may examine the feasibility of setting up a centralised agency similar to the USD(AT&L) for bringing authority and accountability to one place.

India may also like to examine the US system of programme execution, which is the responsibility of the concerned DoD component under the larger policy of centralised policymaking and decentralised execution. Each and every weapon system in the US inventory is managed by a dedicated team of professionals that include engineers, logisticians, contracting specialists and finance and budget experts. Headed by a PM, the team is responsible for both delivering the project as per the agreed cost, time and performance parameters and its subsequent management till the equipment is disposed off. In India, the concept of PM does not, however, go beyond the 'Make' projects, which themselves are yet to take off. Large programmes are handled by numerous agencies in an adhoc manner, with no single point of authority and accountability. Given that programme management is a widely accepted practice, the MoD needs to find a way to implement this. While implementing this, the MoD would be better off by proving a long tenure to officials to ensure institutional memory and stability.

India has a lot to learn about the professional character of acquisition staff. The US has strengthened this aspect by creating a dedicated cadre (which now totals more than 156,000 people) and setting up a dedicated acquisition university to train them. In India, there is no dedicated acquisition cadre and the officials handling acquisition have no prior training. Keeping in view the complexity of acquisition and

the significant resources involved, India may set up a dedicated training institute for imparting training to its acquisition functionaries.

If the US is best known for its military industrial complex, a major credit goes to its acquisition system that mandates compulsory involvement of local industry in weapons programmes. The involvement of the local industry is ensured through various policies that require the DoD to provide price preference to local entities, and exclude foreign participation in acquisition of certain defence materials. Given that the 'Make in India' intends to deepen the involvement of the Indian industry, the Indian MoD may like to implement similar policies in its procurement procedures

Last but not the least, India could learn a lot from the US planning apparatus that emphasises joint capability planning and thorough budgeting of weapon programmes. In India, equipment planning is largely threat-centric and undertaken by the individual services with little or no regard to the requirement of others. This results in possibility of duplication of efforts. Similarly, budgeting exercise is more of a formality; it does not give the true picture of the eventual prices that the government pays when the contracts are signed. Given that defence procurement involves billions of dollars, the Indian MoD needs to strengthen its planning apparatus by giving primacy to joint capability planning and rigorous costing of weapon programmes.

Notes

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