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ACQUISITION RESEARCH PROGRAM Sponsored report series

Comparing the U.S. Department of Defense and the Israeli Ministry of Defense Acquisition Processes

June 2024

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Prepared for the Naval Postgraduate School, Monterey, CA 93943

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ABSTRACT

Recent Government Accountability Office (GAO) reports have indicated that the U.S. Department of Defense (DOD) acquisition of major weapon systems needs improvement with respect to delivering capability within the planned cost and schedule constraints. While the overall number of major weapon system programs has decreased over the years, program costs and average cycle time have increased. By comparison, Israel faces a unique situation due to constant threats from peer adversaries and extremist organizations. Thus, the Israel Defense Force (IDF) must maintain a constant rapid acquisition approach to deliver capabilities to the operating forces. This capstone applied project report's end goal involves identifying strengths of the IDF acquisition processes and providing recommendations that the DOD acquisition system can implement to improve its development, procurement, cost-efficiency, and delivery of warfighting capabilities. The research identifies the following strengths of the Israeli acquisition system: high risk tolerance to purchase foreign made COTS systems, high risk tolerance to prioritize schedule over performance, and quicker approval process due to limited oversight. The research recommendations are for the DOD to adopt a higher performance risk tolerance to purchase foreign made COTS systems to facilitate delivery of systems at the speed and scale of relevance.



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Major Josh Fernandez commissioned into the United States Marines Corps in May of 2010 out of the United States Naval Academy with a Bachelor of Science degree in Engineering. After completing The Basic School in Quantico Virginia and Field Artillery Basic Officer Leader Course in Ft Sill, Oklahoma he checked into 1st Battalion, 10th Marine Regiment (1/10) in Camp Lejeune, NC. He deployed with 6th Marines in support of Operation Enduring Freedom 12.1 for an 11-month deployment as the Information Operations Officer and Fires Watch Officer. Once returning from deployment he was billeted as a Fire Direction Officer with Battery C, 1/10 and then billeted as a Company and Battalion Fire Support Officer. In May 2015 he received orders to 5th Air Naval Gunfire Liaison Company in Okinawa. There he was billeted as a Fire Control Team (FCT) Leader and attended Tactical Air Control Party School to receive the MOS as a Joint Terminal Attack Controller. In May 2016 he was billeted as the 31st MEU FCT Leader and deployed with the 31st MEU until May 2017. In 2019 he deployed with the 15th MEU for SPMAGTF-CR-CC where he served as the Current Operations Officer and the Assistant Operations Officer. After returning from deployment, he served as the Assistant Operation Officer, the Fire Support Battery Commander and 1st Marine Assistant Fire Support Coordinator for 1st Battalion, 11th Marine Regiment (1/11) in Camp Pendleton, CA. In July 2021, he reported to Naval Sea Systems Command (NAVSEA) where he currently serves as the Marine Liaison to Program Management Ships (PMS) 385 Strategic and Theater Sealift Program Office, PMS 325 Auxiliary Shipbuilding Program Office, and PMS 300 Boats and Craft Program Office in Washington Navy Yard. In February of 2023 he attained his Project Management Professional (PMP) Certificate from the Project Management Institute.

Major Fernandez is married to the former Andrea Siegel of Rockville, MD and has one son Cole.



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LIST OF ACRONYMS AND ABBREVIATIONS

AAF	Adaptive Acquisition Framework
APB	Acquisition Program Baseline
COTS	Commercially Available Off-The-Shelf
DAU	Defense Acquisition University
DDR&D	Directorate of Defense Research and Development
DOD	Department of Defense
DOPP	Department of Production and Procurement
EMD	Engineering and Manufacturing Development
FMF	Foreign Military Financing
FOC	Full Operating Capability
FRP	Full-Rate Production
GAO	Government Accountability Office
IDF	Israel Defense Force
IOC	Initial Operating Capability
JEUN	Joint Emergent Operational Need
JCIDS	Joint Capabilities Integration and Development System
JUON	Joint Urgent Operational Need
LCS	Littoral Combat Ship
LPD	Amphibious Landing Dock
MDA	Milestone Decision Authority
MOD	Ministry of Defense
MSA	Materiel Solutions Analysis
MTA	Medium Tier Acquisition
NATO	North Atlantic Treaty Organization
NDS	National Defense Strategy
OUSD (A&S)	Office of the Under Secretary of Defense for Acquisition and Sustainment
O&S	Operations and Support



P&D	Production and Development
PPBE	Planning, Programming, Budgeting, and Execution
RDA	Research, Development, and Acquisition
SOCOM	Special Operations Command
SOF AT&L	Special Operations Forces Acquisition, Technology, and Logistics
SWOT	Strengths, Weaknesses, Opportunities, Threats
TMRR	Technology Maturation and Risk Reduction
UON	Urgent Operational Need
USD	United States Dollars
USNI	United States Naval Institute



I. INTRODUCTION

This section of the capstone introduces the problem at hand followed by identified pertinent research questions to address the problem. Next, I provide an overview of the methodology used to answer the research question, identifying any limitations, and conclude with how the capstone will be organized.

A. PROBLEM STATEMENT

During times of major conflict, the U.S. Department of Defense (DOD) utilizes a more urgent acquisition pathway to meet higher demands, which places a priority on schedule over cost and performance. This rapid pace was demonstrated during major conflicts such as World War II, and Operation Iraqi Freedom (Arellano et al., 2015). According to Arellano et al. (2015) in an NPS thesis titled *Analysis of Rapid Acquisition Processes to Fulfill Future Urgent Needs*, during these major conflicts major weapons systems were introduced to the warfighter in 6 to 18 months instead of 5 to 10 years, depending on the system. At times, the DOD will accept risk to performance capabilities and/or cost to meet a condensed schedule to deliver to the warfighter. However, for most programs, the DOD doesn't accept significant risk for schedule compression, and balances cost, schedule, and performance capabilities.

Although the DOD has rapid acquisition processes for Urgent Capability Acquisition, software, and for Middle Tier Acquisition (MTA) using an agile-type approach (OUSD [A&S], 2022), the acquisition of major weapon systems, like aircraft and warships, can take years to complete, which requires extensive hardware and software integration and modification to ensure the technology is not outdated (Arellano et al. 2015). In 2023, the Government Accountability Office (GAO) conducted their annual assessment on weapons systems titled *Programs Are Not Consistently Implementing Practices That Can Help Accelerate Acquisitions* (GAO, 2023). In the assessment report, the GAO identified that despite the total number of Major Weapon System Programs decreasing from 2020 to 2022, the overall portfolio cost and estimated average cycle time increased (see Figure 1).





Figure 1. Government Accountability Office Analysis of DOD Major Weapons System Programs in 2023. Adapted from Government Accountability Office (2023).

The often-lengthy delivery schedule and approval process of the DOD acquisition system can pose some risks with adversaries like China who prioritize schedule over performance capability. China accepts risk in performance capabilities to employ a condensed schedule and mass production (Curriden, 2023). According to Christian Curriden's (2023) research titled *The Chinese Acquisition Process*, China, a communist regime, is enabled to dictate a fast acquisition strategy for all levels of weapon systems due to the government's control over industry. A recent RAND report titled *Defense Acquisition in Russia and China*, was quoted saying "producing it in large quantities will signal a turning point in the capabilities of the Chinese defense industry" (Ashby et al., 2021, page 31).

By comparison, Israel faces a unique situation due to constant threats from peer adversaries and extremist organizations. Consequently, the Israeli Ministry of Defense (MOD) must maintain a constant rapid acquisition approach to procure and deliver the most advanced weapons to the operating forces. As a small country with a scaled-back industry size, it can offer recommendations for the United States to adopt within its acquisition system.

The end goal of this study involves identifying strengths of the MOD's acquisition system development, procurement, and delivery of weapon systems and providing recommendations that the DOD, under the Office of the Under Secretary of Defense for Acquisition & Sustainment (OUSD [A&S]), can consider for implementation.



B. RESEARCH QUESTIONS

This project measures and compares the Israeli acquisition processes to those of the DOD. This research answers the following primary questions regarding the two countries' acquisition processes:

Primary research question 1: What are the strengths, weaknesses, opportunities, and threats of the U.S. DOD acquisition system compared to the Israeli MOD acquisition system?

Primary research question 2: Which identified causes can explain the differences between both processes?

C. METHODOLOGY

This research focuses on comparing the DOD and Israeli MOD in three main areas: requirements, resource allocation, and acquisition processes. The approach employed for the project is executed in three phases: DOD acquisition process overview, MOD acquisition process overview, and an analysis of similarities and differences between the two processes. First, I review current and future DOD acquisition processes. Through studies from the Government Accountability Office (GAO) and other organizations, I identify weaknesses, concerns, and issues within the process. Next, I outline Israel's acquisition strategy and process details, obtained via open-source data from Israel's government sources and assessments reviewing the effectiveness of the Israeli acquisition process and overall military strategy.

The project employs the program management triple constraint model, which includes cost, performance, and schedule parameters for managing acquisition programs (OUSD[A&S], 2020a). According to the Defense Acquisition System under DOD Directive 5000.01, the triple constraint model is used for evaluating a program's performance for the three requirements. When one of these areas—cost, schedule, or performance—is altered or changed by internal or external factors, then it affects the other two. If a program has a decrease in funding, then either the program will take longer to deliver, or performance factors will be diminished. This model serves as a theoretical framework to compare the DOD and Israeli MOD acquisition processes.

The DOD's acquisition program baseline (APB) outlines the threshold and objective values of triple constraints, which ties DOD practices to industry project



management fundamentals (DAU, n.d.-c). According to the DAU, the APB, first established by the Milestone Decision Authority (MDA) prior to the program entering the Engineering and Manufacturing Development (EMD) phase, can be revised during a program deviation breach or at the MDA's discretion (DAU, n.d.-c). DAU states that these program deviation breaches are linked to the triple constraints: cost, schedule, or performance parameters. According to DAU, the APB is the DOD's structured approach to maintain a program's balance for the triple constraints.

Finally, I conduct an analysis of similarities and differences between the DOD and Israeli MOD processes for system development and procurement, cost-efficiency, and system delivery. To complete these objectives, I compare the DOD's requirements and acquisitions processes to those of the Israeli MODs, through similar case studies for major weapon systems programs for the DOD and the Israeli MOD. The first was the USMC replacement program for the outdated Amphibious Assault Vehicle (AAV). The second was the Israeli replacement of the M113 Armored Personnel Carrier (APC) with the Namer APC. Each case study concludes with a root cause analysis. The analysis of this project concludes with a strengths, weaknesses, opportunities, and threats (SWOT) analysis of each nation's system.

D. LIMITATIONS AND SCOPE

The primary time frame researched is between 2004 and 2024 for both U.S. and Israeli processes. The research focuses on the differences between the acquisition of major weapon systems. The research compares U.S. to Israel Major Capability Acquisition pathways, requirements generation systems, and resourcing systems. The research draws conclusions by using a case study-based approach with only one DOD program, the replacement of the Amphibious Assault Vehicle (AAV) with only one Israeli program, the replacement of the M113 Armored Personnel Carrier.

There are a few limitations on this research that hindered analysis. First, there is a limited database on the Israeli MOD acquisition process for procurement from domestic Israeli industries. Comparing these two vastly different national defense strategies presents difficulties. The United States is a much larger and older nation compared to Israel, with greater access to domestic industry partners. There are limited assessments on



Israel's acquisition process within online open-source research and the Naval Postgraduate School (NPS) library. Many assessments of Israel's processes were conducted 20 to 30 years ago, which are outdated.

E. ORGANIZATION

This capstone is divided into five chapters. The following are the chapters found after the introduction.

Chapter II, the background chapter, sets the context for the research by providing a comprehensive individual background of the DOD and Israeli MOD acquisition strategies including requirements decision systems, resource allocation systems, and acquisition processes.

Chapter III, the literature review chapter, provides a synthesis of existing research and publications related to the DOD acquisition process and Israeli acquisition strategy. This chapter includes assessments conducted by government organizations, industry, and individuals on both the U.S. acquisition process and Israeli acquisition process.

Chapter IV, the data analysis chapter, includes the analysis details on similarities and differences between the U.S. and Israeli processes for system development and procurement, cost-efficiency, and system delivery and sustainment. It reviews a case study-based approach with only one DOD program, the replacement of the Amphibious Assault Vehicle (AAV) with only one Israeli program, the replacement of the M113 Armored Personnel Carrier, along with a root cause analysis following both case studies. Finally, a SWOT analysis is conducted on both nation's systems.

Chapter V, the summary chapter, provides the analysis results between the two governments' acquisition strategies and answers the primary research questions. Using identified strengths of the Israeli process, it provides recommendations which the DOD can consider for implementation.



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II. BACKGROUND

This chapter sets the context for the research by providing an overview of the DOD acquisition strategy, including the many pathways utilized. Next is an overview of the acquisition process used by the Israeli MOD for delivery of weapon systems for operational use.

A. DOD ACQUISITION PROCESS OVERVIEW

The DOD acquisition framework is depicted in the Defense Decision Support System Chart (see Figure 2). The overarching "Big A" Acquisition process is managed through three overlapping decision support system areas (Office of the Under Secretary of Defense for Acquisition and Sustainment [OUSD(A&S)], 2020a).





1. DOD Requirements Decision Support System

The first decision support system area is the Joint Capabilities Integration and Development System (JCIDS), which derives requirements to meet national security demands. The "JCIDS provides the baseline for documentation, review, and validation of capability requirements across the Department" of Defense (DAU, n.d.-b). According to DAU, once a possible solution to a capability gap is identified, a capabilities-based



analysis (CBA) is initiated. The CBA results in an initial capabilities document, which facilitates science and technology (S&T) research and risk reduction before moving forward into the system engineering and manufacturing development phase.

2. DOD Resource Allocation Decision Support System

The Planning, Programming, Budgeting, and Execution (PPBE) is the process used to allocate resources, primarily through the President's Budget (PB) to meet certain requirement demands from the DOD components and Combatant Commanders (COCOMs) (DAU, n.d.-a). PPBE is conducted in four steps: step one: planning, step two: programming, step three: budgeting, and step four: execution. Step one, Planning, begins with the National Security Strategy by the National Security Council, which is strategic guidance for the DOD. Step two, Programming, proceeds to "allocate resources to support the roles and missions of the Military Departments and Defense Agencies" (DAU, n.d.-a, paragraph 11). Step three, Budgeting, refers to finalizing the DOD's Budget Estimate Submissions to prepare the President's Budget for Congress review. Lastly, step four, Execution, compares what the DOD said it would accomplish with its resource allocations against what it accomplished (DAU, n.d.-a).

3. DOD Defense Acquisition System

Finally, the Defense Acquisition System, or "little a" acquisition, utilizes the Adaptive Acquisition Framework for procuring and delivering weapon systems (OUSD[A&S], 2022). According to the 2022 DOD Instruction 5000.02, *Operation of the Adaptive Acquisition Framework*, the Adaptive Acquisition Framework (AAF) presents six separate pathways with different timelines for Urgent Capability Acquisition, Middle Tier of Acquisition (MTA), Major Capability Acquisition, Software Acquisition, Defense Business Systems, and Acquisition of Services (see Figure 3) (OUSD[A&S], 2022). The Urgent Capability Acquisition, MTA, and Software Acquisition pathways utilize rapid approaches to provide identified capabilities to the warfighter. According to DOD Instruction 5000.81, the Urgent Capability Acquisition utilizes a condensed pathway of less than 2 years to introduce a required capability that is identified as a Joint Urgent Operational Need (JUON), Joint Emergent Operational Need (JEUN) by the Joint Staff



ACQUISITION RESEARCH PROGRAM DEPARTMENT OF DEFENSE MANAGEMENT NAVAL POSTGRADUATE SCHOOL (OUSD[A&S], 2019b). The Middle Tier of Acquisition, described under DOD Instruction 5000.80 follows a pathway with rapid prototyping and rapid fielding, both under five years, for mature capabilities (OUSD[A&S], 2019a). The Software Acquisition pathway, defined under DOD Instruction 5000.87, follows an iterative agile approach to implement a Minimum Viable Product of software systems to the warfighter within one year (OUSD[A&S], 2020c). The Defense Business System, described under DOD Instruction 5000.75, assesses existing commercial solutions that can support a current DOD requirement (OUSD[A&S], 2020b). Finally, the Acquisition of Services, defined under DOD Instruction 5000.74, is a directive for the individual commands' responsibilities to appropriately manage their assigned acquisition systems and services (OUSD[A&S], 2021a).





The DOD Instruction 5000.02 specifies that Major Capability Acquisition of weapon systems, such as warships and aircraft, takes various lengths of time depending on urgency of need, available resources, and technology and manufacturing readiness levels to develop, test, and deliver the required capability (OUSD [A&S], 2022). To



foster a condensed timeline, the DOD uses commercially available off-the-shelf (COTS) items in their programs (FAR 12.103, 2024). According to FAR 12.103, COTS items include identifying and acquiring already made supplies and material which can facilitate the rapid procurement of a system.

The DOD Instruction 5000.85 overviews the Major Capability Acquisition pathway (see Figure 4), which begins with a Materiel Development Decision (MDD) that initiates a Material Solution Analysis (MSA) phase (OUSD[A&S], 2021b). According to DOD Instruction 5000.85, this phase leads into an analysis of alternatives to the system, identifying gaps and requirements, and ends with the Milestone A decision point. DOD Instruction 5000.85 notes that next, the system enters the Technology Maturation and Risk Reduction (TMRR) phase, which has the goal of reducing technology and development identified risks before the Milestone B decision point. DOD Instruction 5000.85 states that after Milestone B approval, the system moves on to the Engineering and Manufacturing Development (EMD) phase, where the system is designed, developed and tested. The EMD phase ends with a Milestone C decision point, authorizing low rate initial production. DOD 5000.85 adds that after approval by the Milestone Decision Authority (MDA), the system moves to the Production and Development (P&D) phase, where the system is produced and tested. Continuing in DOD 5000.85, this phase ends with the system entering a full-rate production (FRP) decision to produce the system and enter an initial operational capable status. Finally, within DOD 5000.85, the system finally enters the Operations and Support (O&S) phase for sustainment with the user warfighter and enters a full operational capability (FOC) status.





Figure 4. Major Capability Acquisition Lifespan. Source: OUSD (A&S, 2022).

B. ISRAELI ACQUISITION PROCESS OVERVIEW

The Israeli Ministry of Defense (MOD) oversees the acquisition and delivery of defense weapons systems to the IDF (MOD, n.d.-a). According to the Israeli Ministry of Defense official website, it divides the acquisition process responsibilities between two primary departments under the MOD Director General: the Directorate of Defense Research and Development (DDR&D) and the Department of Production and Procurement (DOPP) (see Figure 5).





Figure 5. Israel's Ministry of Defense Organization Chart. Source: MOD, n.d.-a

The DDR&D of the Israeli Ministry of Defense is responsible for research of future military technology and development of innovative concepts for defense technology (MOD, n.d.-b). The DOPP of the Israeli MOD is responsible for procuring, developing, and delivering weapon systems to the IDF (MOD, n.d.-a). According to the International Trade Administration, the Israeli organization named the Mission to the USA, is responsible for procuring developed systems from United States vendors (International Trade Administration, 2023). According to Ruth Levush in a Law Library of Congress article (2015) titled *Defense Procurement Issues: Israel: Procurement Procedures and the Iron Dome Case*, the MOD has oversight of Israel's acquisition process. Similar to the DOD Decision Support System Chart (see Figure 2), I developed a comparable "Big A" Acquisition chart of the Israeli MOD's Decision Support System, shown in Figure 6.



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Figure 6. Israel's Defense Decision Support System

1. Israeli Requirements Support System

According to Levush (2015), Israel's requirement process begins as follows,

Starts with the identification of a need by an IDF unit or at the MOD. Procurement requests are designed to provide a response to various needs of the IDF, and therefore include data on design, specifications, scope of work, testing standards, quantities, required or recommended delivery dates. Once submitted, procurement requests are processed by one of the appropriate procurement units at the MOD. (pp. 13–14)

In their book, Kagan et al. (2009) described how the Israeli Ministry of Defense acquisition process begins: with the DDR&D researching technological needs for current and future threats to the IDF. Kagan et al. explained how the IDF works closely with the DDR&D to establish operational requirements for current and future threats.

2. Israeli Resource Allocation Support System

According to the book titled *Defense Structure, Procurement and Industry: The Case of Israel*, the Ministry of Finance determines the defense budget (Kagan et al., 2009) during the annual Knesset Finance Committee (Even, 2010). According to Kagan et al. once the annual defense budget is set by the Ministry of Finance, the MOD has direct oversight on resource allocation, as well as funding from foreign military finance



aid through organizations like the Mission to the USA. Ruth Levush states that MOD maintains oversight of the resource allocation to address a service requirement. "A procurement request becomes a purchase order after being approved, recorded in the MOD computer system, and designated a budget allocation" (Levush, 2015, p. 14). In the same article, Levush continues by explaining that when developing or procuring systems exceeding \$127.5 million (USD) a special ministerial committee is appointed for civilian oversight of diverting government funds to the program.

According to a strategic assessment titled *Israel's Defense Expenditure* conducted in 2010, Israel does not spend nearly as much as the U.S. on a defense budget: 13.3 billion USD compared to the US' 607.3 billion USD (Even, 2010). However, Even explained that although Israel's economy is smaller than the U.S., Israel's defense spending covers a larger percentage of Gross Domestic Product (GDP): 6.6% of GDP compared to the US' 4.0%. According to Even in the 2010 strategic assessment, Israel has a unique defense budget compared to the other government ministries.

The defense budget is managed according to the principle of a budget framework, meaning that the defense authorities are authorized to distribute budget resources among a variety of programs, in accordance with changing needs. (Even, 2010, p. 40)

3. Israeli Acquisition Support System

According to Kagan et al.'s (2009) book, *Defense Structure, Procurement and Industry: The Case of Israel*, Israel procures weapon systems both locally via domestic Israeli industry partners, and from international allies, such as North Atlantic Treaty Organization (NATO) members and other United Nations (UN) countries. Of all their external procurement, Israel acquires the most weapons systems from the United States, including aircraft, long-range missile systems, and anti-air weapon systems (Kagan et al., 2009, p. 238). Despite its small size, Israel has a strong defense industry. It has government-owned industry, such as Israeli Military Industries (IMI) and Rafael Armaments Development Authority (Jewish Virtual Library, 2024). Israel also relies on effective privately owned defense industries, like Elbit Systems, which develops ground weapon systems, missile systems, and manned and unmanned aircraft for the Ministry of Defense (Hania, 2016).



Kagan et al. (2009) describe how the DDR&D, working with DOPP and the Mission to the USA, determines if weapon systems can be procured from their allies or if a new system needs to be developed. Kagan et al. also notes that if an existing weapon system exists with the United States, then the Mission to the USA begins to work with the respective U.S. Foreign Military Financing (FMF) department for procurement. According to Kagan et al. (2009), the DDR&D has experience with acquiring existing weapon systems from the United States or other allies and conducted modifications with DOPP to meet specific requirements. Kagan et al. states further that if a new weapon system is needed to meet the operational requirement, then the DDR&D begins sourcing domestic vendors for development. Finally, Kagan et al. state that once a vendor is identified, DOPP takes responsibility for the weapon systems development, testing, and delivery to the IDF. According to the MOD's government website, the Director of Purchasing and Production Administration, a department under the MOD, has the final responsibility for purchasing of the system for delivery to the IDF (MOD, n.d.-c)

C. SUMMARY

The background gave an overview of the DOD's Decision Support Systems, which covers the requirements support system or JCIDS, the resource allocation support system or PPBE, and the Defense Acquisition System. The background also provided details of the Israeli MOD's process for identifying defense requirements, resource allocation, and acquisition process. Both the DOD and Israeli MOD have organized defense support decision systems to prioritize defense spending with civilian oversight. Each system has strengths and weaknesses which will be evaluated in Chapter 4. While this chapter covered both processes individually without assessment, the next chapter, Literature Review, will examine past assessments of both nations' acquisition processes.



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III. LITERATURE REVIEW

The goal of the literature review is to review previous assessments on both the DOD's and Israeli MOD's acquisition processes. This assessment overview is intended to initiate a compare-and-contrast analysis between the two acquisition processes. Some research addresses separate concerns in both the DOD and Israeli MOD acquisition processes. The concerns are vastly different and can be analyzed comparatively. The research collectively identifies concepts each government is exploring within acquisition strategies, which can, in turn, be analyzed for recommendations to the other nation.

A. SYNTHESIS OF LITERATURE: DOD

Recent reports that identify concerns with the DOD acquisition strategy include the weapon systems annual assessment report to congressional committees by the GAO, specifically the 2023 assessment titled *Programs Are Not Consistently Implementing Practices That Can Help Accelerate Acquisitions*, and a RAND (2021) research report, titled *Is the Defense Acquisition System Postured to Solve National Defense Strategy Operational Problems?* (Predd et al., 2021). In their report, the GAO (2023) identified that the DOD is significantly declining in performance for major defense acquisition programs. The total number of programs has decreased from 84 to 75 from 2020 to 2022; however, the portfolio costs have increased by 1%, and estimated average cycle time has increased by 7% (highlighted in Figure 1). This report assessed that it is costing more and taking longer to deliver less major weapon systems to the DOD. Comparatively, in their report, RAND (2021) identified that the DOD acquisition strategy is not effectively producing systems that meet the operational requirements set aside in the National Defense Strategy (NDS) and that milestone decision-makers do not effectively prioritize and communicate the acquisition strategic goals (Predd et al., 2021).

In 2022 the Commission on Planning, Programming, Budgeting, and Execution (PPBE) Reform was established to review the DOD's resource allocation system's effectiveness against the current security environment (Commission on Planning, Programming, Budgeting, and Execution (PPBE) Reform, 2024). In 2024, according to the Commission, the final report published recommendations to change the current PPBE



process to a more current and agile Defense Resourcing System to rapidly facilitate the growing U.S. national security requirements.

Today, the U.S., its allies, and partners face multiple challenges and threats amid the most complex geopolitical environment since World War Two. The DOD must have an agile and responsive resourcing architecture and system, one that promotes innovation, agility, and speed, best harnesses defense resources, and supports timely and accurate senior leader decisions. Time is short, the need for change is increasingly urgent. (Commission on Planning, Programming, Budgeting, and Execution [PPBE] Reform, 2024, p. 11)

The Commission on Planning, Programming, Budgeting, and Execution (PPBE) Reform recommended the Defense Resourcing System establish new steps to replace the planning, programming, and budgeting steps. According to the Commission, the Defense Resourcing System would incorporate the following steps: Guidance, Build, and Decision, followed by the same Execution step for evaluation of the process. The Commission reinforced the dangers of the lengthy U.S. approval process for resource allocation in today's security environment and highlighted the need to change.

The research reviewed four GAO assessments of the canceled USMC EFV program to replace the aging AAV. A GAO report titled Assessment of Major Weapons *Programs* (2004) stated the major issue at this time in the program was that one of the five critical technologies, the navigation system, was not mature, causing a one-year delay. In 2006 the GAO did an individual assessment on the EFV titled The Expeditionary Fighting Vehicle Encountered Difficulties in Design Demonstration and Faces Future Risks. During this evaluation, the GAO (2006) recommended delaying Milestone C for the program until mitigation were addressed for "significant risks...in demonstrating design and production maturity that have potential significant cost and schedule consequences" (GAO, 2006, p. 2). In 2010, GAO provided a response to a House of Representatives request to review the EFV program titled EFV Program Faces Cost, Schedule, and Performance Risks (GAO, 2010). The GAO concluded the report with recommending "a reevaluation be performed to confirm the EFV remains a required asset and the preferred approach" due to "cost growth, schedule slips, and performance failures" (GAO, 2010, p.7). The final evaluation came in a 2011 GAO report titled Assessment of Selected Weapon Programs. Within this report, the GAO concluded "the



Secretary of Defense proposed canceling this program, stating that the EFV would be an enormously capable vehicle if completed, but that the mounting costs of acquiring needed to be weighed against other priorities" (GAO, 2011, p. 64)

Three recent NPS capstone applied project reports and theses which compare the DOD's acquisition strategy to that of other countries or government departments were reviewed. They included: Chih-chieh Liu (2021) titled *Comparison of Naval Acquisition Processes between the U.S. and Taiwan*, Olga G. Stotzky (2022) titled *Program Management Practices Comparison Between DOD and NASA*, and finally, Michael Marchese and Stanley Chan (2023) titled *Naval Acquisition in the U.S. and Russia*. These theses, all less than three years old, provided similar current assessments of DOD requirements, resource allocation, and acquisition process. The recent theses compared different programs and pathways with varying contrasts and consistency in assessment of the DOD's acquisition process is mature and comprehensive compared to other countries, with heavy regulation, guidance, and oversight.

In *Comparison of Naval Acquisition Process between the U.S. and Taiwan*, Liu (2021) performed a case study of two similar naval shipbuilding programs to compare the U.S. and Taiwan's acquisition processes, including the requirements and resource allocations systems. Liu provided recommendations for both the U.S. and Taiwan after an assessment of the strengths. Liu concluded that the U.S. maintains a more detailed, complete process with multiple pathway options for increased flexibility in program procurement options. However, in the analysis of the Littoral Combat Ship (LCS) program, Liu assessed that the U.S. prioritized the quantity of ships with a detriment to performance. As for Taiwan, Liu assessed, through the Tuo Chiang-class corvette ship program, Taiwan was able to "adopt a more conventional way to execute…with less risk" and has a better balance of cost, schedule, and performance compared to the LCS program (Liu, 2021, p. 50).

In *Program Management Practices Comparison Between DOD and NASA*, Stotzky (2022) compared the DOD and NASA's acquisition processes through a SWOT analysis. Stotzky concluded that while there were many similarities between the two



ACQUISITION RESEARCH PROGRAM DEPARTMENT OF DEFENSE MANAGEMENT NAVAL POSTGRADUATE SCHOOL department's processes, the DOD had a more robust overall system. Stotzky assessed the DOD's flexibility in its six acquisition pathways as a strength; however, pointed out a weakness of the DOD as being unable "to deliver incremental information technology capabilities every six months" (Stotzky, 2022, p. 66).

During their research titled, *Naval Acquisition in the U.S. and Russia*, Marchese et al. (2023) compared the U.S. and Russian acquisition process through similar case studies involving the procurement of next-generation ballistic submarines. Marchese et al. concluded that the U.S. puts a priority on cost control and milestone schedule, while Russia prioritizes the quantity of systems produced. Marchese et al. assessed that, compared to Russia, the U.S. has a more mature, structured acquisition process with a larger defense industry base. However, Marchese et al. evaluated that the U.S. "suffers from lengthy processes caused by bureaucracy and complexity of regulations in addition to cost and schedule overruns" (Marchese et al., 2023, p. 52).

According to a GAO report conducted in 2007, Special Operations Command (SOCOM), unlike the majority of DOD, prefers utilizing rapid acquisition approaches like Urgent Capability Acquisition Pathway or MTA instead of the Major Capability Acquisition pathway. The GAO report (2007) identified the majority of SOCOM acquisition programs to "have short acquisition cycles, and use modified commercial off-the-shelf and non-developmental items or modify existing service equipment and assets" (GAO, 2007, p. 2). SOCOM's small size and high-risk tolerance facilitates a quicker approval process to enable these pathways. In the Special Operations Forces Acquisition, Technology, and Logistics (SOF AT&L) webpage, SOCOMs follows four key principles that facilitate the ability to provide rapid acquisition to the warfighter: "delivers capability to the user expeditiously, exploits proven techniques and methods, keeps warfighters involved throughout the process, takes risk and manages it" (SOF AT&L, n.d., paragraph 2).

B. SYNTHESIS OF LITERATURE: ISRAELI MOD

Recent reports identifying concerns and changes with Israeli MOD's acquisition strategy include an article from the Wiley Online Library, a Routledge journal article titled *Defense Procurement and Industry Policy*, and an online article from the Dado Center. In the Wiley Online Library article titled *Decisive Victory and Israel's Quest for*



a New Military Strategy, Samaan (2023) identified a recent change in Israeli strategy after the Hamas terrorist attack on October 7, 2023. According to the article, Israel adopted a new concept, called *decisive victory*, to combat Hamas and other extremist organizations. Saman defined the decisive victory concept around changing operational tactics and procurement of weapons for the IDF to combat the current threat environment in the region. Samaan outlined in his article how, to meet operational demands, the IDF identified the need to decrease heavy armored and static platforms to make room for the procurement of precision-guided munitions and unmanned systems. Samaan summarized issues the Israeli MOD has faced in procuring these weapon systems, specifically, from the pandemic financial concerns and political disagreement. The implementation of the *decisive victory* concept would cost an additional \$1.25 billion per year to the defense budget. The process for procuring these new assets was not identified in the article. In the past, Israel has conducted a mixture of procuring weapon systems from internal industry and acquiring existing weapon systems from allies, with a follow-on modification for identified requirements. References agree that a large volume of Israel's procurement of advanced defensive systems originates from allied support. For example, in a NPS thesis titled Israel's ascendance to a technology advanced regional economic power, Maxim Olivine (2018) captured the significance of the contributions from Britain, the U.S., France, and Germany to Israel's Defense Forces. Olivine states how without these contributions Israel would be limited in its domestic resources to face its many threats.

In their research, *Defense Procurement, and Industry Policy: The Case of Israel,* Kagan et al. (2009) stated the effectiveness of the U.S.-provided foreign military financial aid to Israel; however, it identified its downside to Israel's domestic defense industry (p. 251). According to Kagan et al., Israel military financial aid from the U.S. to procure defense weapons has significantly increased from 1970, and as of 2004 is \$2.4 billion dollars. Also, Kagan et al. identified that in addition to financial aid, the United States has sent surplus weapons systems to Israel—for example, aircraft, munitions, and anti-access/ area-denial systems. According to an article from Oren Barak et al. (2023) titled *The Shift to Defense in Israel's Hybrid Military Strategy*, Israel has been focusing on a hybrid offensive and defensive approach in its military efforts to defend the homeland against its many threats. Barak et al. (2023) claim that this hybrid military



approach has set an Israeli priority in procuring weapon systems with highest possible protection of their forces.

In the Dado Center's online article, Transformations in the Israeli Defense Development and Production System, and the Contemporary Relevance, researcher Hania (2016) explained the many strengths of the Israeli MOD's research and development of systems; however, he also identified some major concerns. Of these concerns, one that stands out is a gap between IDF input and influence to research and development (Hania, 2016). Hania posed the concern that recently, compared to past years, the IDF has had less interaction with DDR&D when developing new systems off current gaps. However, this concern was only identified in one source. If accurate, the lack of interaction between IDF and DDR&D poses a significant risk to Israel and is similar to identified concerns within the DOD. Identified in a Law Library of Congress document titled Defense Procurement Issues, a vulnerability in the Israeli acquisition process was lack of official oversight throughout the process (Buchanan et al., 2015). In their article, Buchanan et al. described how during the procurement of the Iron Dome the Israeli director of Department of Weapons Systems Research and Development, Brigadier General Daniel Gold, proceeded in launching the funding for procurement of the Iron Dome defense system without the necessary approval by a special ministerial committee.

Resource review for the Israeli replacement program for the aging M113 armored personnel carrier (APC) included news articles from a mix of Israeli and U.S. private and government owned outlets such as *Defense News, Army Technology, Jerusalem Post, and Forbes*. The references had consistencies in the Israeli MOD's approach in replacing the aging M113 platform. Inconsistencies within referenced articles were identified for the level of success the Namer APC demonstrated in modern combat. While the references identified the Namer APC as a successful replacement to the M113 APC, some identified issues due to the heavy weight of the vehicle and having limited capacity in some environmental circumstances (Larson, 2020).

C. SUMMARY

The references agreed that despite drastic differences in the size of the countries, with different national defense strategies, the DOD and Israeli MOD have both similar



and different concerns regarding their acquisition processes. Both the DOD and Israeli MOD have evolving threats from adversaries, which cause both nations to need and maintain an option for a rapid acquisition pathway. The various sources agree that the DOD and Israeli MOD share similar priorities in their defense budget relative to the GDP. The DOD has a significantly larger defense budget, with the Israeli MOD relying heavily on foreign military financial aid. The DOD has a very detailed process; however, due to the large size, at times, can be lengthy with many required approval milestones. For major defense acquisition programs, the DOD primarily uses the Major Capability Acquisition pathway over the two rapid pathways options, Urgent Capability Acquisition or MTA, which can pose risk to maintaining cost and schedule constraints of the program's baseline. Another major difference identified throughout the research was Israel's higher risk tolerance in its flexibility to procure a system from sources other than privatized defense industry, such as from government-owned defense industry, and foreign military finance of existing systems. While the United States has one of the most capable privatized defense industrial bases, it lacks options in government-owned defense industry and has limited options for leveraging foreign defense industries due to capability and capacity constraints.



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IV. DATA ANALYSIS

The analysis first compares the DOD's acquisitions processes to those of the Israeli MOD, through case studies of two similar major weapon systems programs. The first is the U.S. Marine Corps (USMC) replacement program for the outdated Amphibious Assault Vehicle (AAV). The second is the Israeli replacement of the M113 Armored Personnel Carrier (APC) with the Namer APC. Next, a root cause analysis is conducted on each case study to identify the challenges within the acquisition systems. Although the processes used different strategies, the case studies demonstrate both nations' approaches to acquire a combat vehicle. Finally, a SWOT analysis is conducted focusing on each nations' requirements support system, resource allocation support system, and acquisition processes.

A. CASE STUDY: USMC REPLACEMENT PROGRAM FOR THE AAV

The USMC has relied on the AAV as the primary armored ground platform for transporting Marines ship to shore since 1972 (GAO, 2015). A replacement to the program was not properly facilitated until after nearly 40 years, well past the AAVs' lifespan. The aging AAV, along with maintenance issues, experienced a major incident on July 30, 2020, in which eight Marines and one Sailor lost their lives (Fuentes, 2021).

1. **Requirements Process**

According to a 2015 GAO report, the AAVs were introduced in 1972 (see Figure 7). The AAVs have a 30-year lifespan, so they were quickly approaching their end of life when the replacement program began in 1995.

The GAO described in a 2015 report the many issues the warfighters experienced with the AAV in operational use.

According to USMC officials, the AAV has become increasingly difficult to operate, maintain, and sustain. As weapons technology and threat capabilities have evolved over the past four decades, the AAV is viewed as having capability limitations in the areas of water speed and land mobility, lethality, protection, and network capability (p. 4).



The AAVs' outdated capacity for protecting Marines against current weapon systems, such as precision weapons, is severely limited.



Figure 7. Amphibious Assault Vehicle up the well deck ramp of amphibious landing dock USS Somerset (LPD 25). Adapted from USNI News (2020).

The AAV is not the only program for which the DOD has conducted multiple service life extensions, surpassing their 30-year service life (e.g., amphibious ships) (Keenan, 2016). However, typically service life extensions for systems like ships and aircraft come with a modernization package to upgrade the existing system. The AAV platforms saw some modernization upgrades through their service life extension, including the AAV Survivability Upgrade in 2016 (Eckstein, 2018). However, according to a USNI News article titled *Marine Corps Cancels AAV Survivability Upgrade*, author Megan Eckstein (2018) stated the program was canceled in 2018 due to budget constraints.

2. Acquisition Process

According to a 2004 GAO assessment of major weapon programs, the research and development process for a replacement AAV program began in 1995, with the development of the Expeditionary Fighting Vehicle (EFV) (see Figure 8). The same GAO report described the EFV as offering a higher ship-to-sea speed of 20 knots, compared to the AAV's 6 knots, and the ability to travel offshore at farther distances. The EFV program began the System Development and Demonstration (SDD) phase, now referred to as EMD, in December 2000, with a Critical Design Review (CDR) in January 2001, and a contract awarded to General Dynamics for development (GAO, 2006).





Figure 8. Expeditionary Fighting Vehicle (EFV). Adapted from GAO (2011).

The EFV program acquisition cost already covered a quarter of the USMC's total acquisition cost (GAO, 2006). According to the same GAO assessment, between 2001 and 2005, the EFV program was baselined three times, with the estimated cost increasing from \$8.7 billion to \$12.6 billion (see Figure 9). One factor was that the cost per vehicle increased from \$8.5 million to \$12.3 million since the drawing estimates, (GAO, 2006). The GAO assessment identified that the cost wasn't the only factor to increase. Between November 2002 and March 2005, the program schedule saw a 48-month increase, with initial operational capability moving from a baseline of September 2006 to September 2010 (GAO, 2006).



Adapted from GAO (2006).

According to a 2020 GAO defense acquisition assessment report, the EFV program had its first operational assessment in 2006, which demonstrated risks with the



program's performance, specifically in reliability due to low mean time between mission failures (MTBOMF). The program demonstrated 4.5 hours between mission failures compared to the required 17 hours (GAO, 2020). GAO identified additional issues that arose in 2007, when the program reported a unit cost breach of the Nunn-McCurdy Act. A Congressional Research Service report defined the Nunn-McCurdy Act as a required report to Congress if "a Major Defense Acquisition Program (MDAP) experiences cost overruns that exceed certain thresholds" (Congressional Research Service, 2016, p. 2). The EFV program was demonstrating critical risks in cost, schedule, and performance, resulting in more significant DOD leadership and congressional oversight to the program (GAO, 2020). After the constant demonstration of risks in cost, schedule, and performance, the DOD canceled the EFV program in 2011 (GAO, 2017).

After the cancellation of the EFV program, the USMC began the initial acquisition documentation through initial performance requirements of the Amphibious Combat Vehicle (ACV) program in 2011 (see Figure 10) (GAO, 2017). The ACV, a wheeled armored vehicle versus the tracked vehicle, would now be the primary replacement of the still ongoing AAV program. According to the 2017 GAO report, the ACV would provide the following capability upgrades from the AAV: improved protection land mobility and increased armor protection against new threats. A 2021 GAO weapon systems annual assessment reported that the ACV program acted from lessons learned from the EFV program (GAO, 2021). The primary difference between the failed EFV program and the ACV program was the acquisition approach used (GAO, 2015). The EFV program used a knowledge-based acquisition approach, where the ACV program adopted an incremental approach with three phases (GAO, 2015). According to the same GAO report, the ACV officially started as a program of record in June 2014, with a low-rate decision occurring in June 2018 and full rate production completed in December 2020. While an overall successful program, the ACV saw issues to cost and schedule, primarily because of the COVID-19 pandemic, which resulted in a three-month delay due to supply interruptions (GAO, 2021).





Figure 10. Amphibious Combat Vehicle along shore at Camp Pendleton. Adapted from U.S. Marine Corps photo by Ashley Calingo (2019).

3. Root Cause Analysis

The issue of the aging AAV platform came to public attention after the tragic incident on July 30, 2020, in which eight Marines and one Sailor lost their lives inside a sunk AAV (Fuentes, 2021). In his USNI News report titled Investigation: 7-Month-Long 'Chain of Failure' Led to 9 Killed in AAV Sinking, Gidget Fuentes (2021) reported that the incident was ultimately reported as a leadership failure due to an oversight in maintenance issues. While USMC leadership first identified the need to phase in a replacement program for the AAV in 1995, it took until 2011 to begin the acquisition for a suitable replacement. The slow decision process of the Major Capability Acquisition pathway caused a delayed reaction to issues in the EFV program. The EFV program demonstrated issues as early as 2004; however, it was not canceled until 2011, after \$9.018 billion was expended (GAO, 2010). In their NPS thesis titled Analysis of Process, Product, and Context in Military Acquisitions, Evan Barber et al. (2021) defined a "successful program as a program that achieves milestone C without being terminated" (page 63). However, decision makers demonstrated a delayed choice in the termination of the EFV program after milestone C in 2011, which resulted in overuse of time and money for the DOD (GAO, 2011). The replacement program for the AAV, the ACV, has achieved an initial operating capability (IOC) (GAO, 2021).

The USMC had limited options to pursue a COTS replacement for the AAV; therefore, the replacement system had to be developed from the ground up, which results in a lengthy design, development and testing schedule. The USMC envisioned the AAV replacement to be a tracked vehicle, with very specific requirements established. According to Jay Snelling in a U.S. Naval Institute article titled *The Amphibious Combat Vehicle Delusion*, the USMC accepted performance risk in the ACV program when



adopting a wheeled vehicle versus a tracked vehicle due to "inability to achieve high water speed of greater than eight knots and lack of range" (Snelling, 2019, paragraph 3). The EFV would have offered a higher ship-to-sea speed of 20 knots and a longer-range capacity than the ACV (GAO, 2015). According to a 2015 GAO report, the USMC decided on a wheeled vehicle against another tracked vehicle for a cost-performance tradeoff after an affordability analysis. The USMC's ability to accept performance risk ultimately allowed them to develop a replacement program for the aging AAV.

B. CASE STUDY: ISRAELI NAMER APC PROGRAM TO REPLACE THE M113 APC

1. Requirements Process

During the early 2000s, Israel required a replacement APC system to their 50year-old M113 APC (see Figure 11) (Opall-Rome, 2015). According to Opall-Rome, similar to difficulties the DOD faced in replacing aging systems, Israel faced budgetary constraints in replacing the M113 APCs. According to a *Defense News* article, the requirement to replace the aging M113 APC was elevated after a rocket-propelled grenade attack destroyed an M113 APC during a 2004 operation in Gaza, killing all seven Israeli Soldiers inside. It was determined that the M113 APCs did not process the ability to integrate adequate active protection systems against threats—such as rocketpropelled grenades, anti-tank rockets, and anti-tank guided missiles—needed for current operations.





2. Acquisition Process

In October 2010, the Merkava and Armored Vehicles Directorate of the Israel Ministry of Defense (MOD) procured a deal with General Dynamics Landing Services



(GDLS), a U.S. industry organization, to develop the Namer APCs (see Figure 12) (Roosevelt, 2010). The Namer APC would have significant armored improvement compared to that of its predecessor. Unlike the aluminum armor on the M113 APC, the Namer APC would be protected with similar chassis armor to that of the Merkava Mk1 Main Battle Tank, with sloped hybrid armor and a V-shape hull (Army Technology, 2010). After the first delivery of Namer APCs in 2011, Israel began implementation of the TROPHY Active Protection System (APS) from an Israeli-owned Rafael defense industry. According to Rafael Advanced Defense Systems, the TROPHY APS rapidly detects and engages threats such as rocket-propelled grenades, anti-tank rockets, and antitank guided missiles. Throughout the process, Israeli-owned and private defense industries such as Rafael Advanced Defense Systems, Elbit Systems, and Israeli Military Industries had a part in the Namer design and modifications.



Figure 12. Namer Heavy APC. Source: Opall-Rome (2015).

3. Root Cause Analysis

According to a *Forbes* article, the Namer APC quickly demonstrated its protection ability in 2014, when it "shrugged off rocket and missile strikes during Israel's 2014 incursion into Gaza" (Axe, 2023, para. 5). According to an *Army Technology* (2010) article, the Namer APC is one of the most highly protected APCs in the world. The Namer APC has proven to be a successful replacement to the M113 APC and demonstrated the Israeli MOD's ability to procure foreign-made systems and modify them within the Israeli defense industry. While the Israeli MOD's acquisition process still had some limitations in replacing the M113 APC, it demonstrated an effective approach in acquiring foreign-made systems and modifying them with domestic industry systems.



Israel was successful in this program because of their willingness to accept performance risk to meet a condensed schedule for the warfighters' needs. The Israeli MOD accepted a foreign-defense-industry-made COTS system, with the ability to modify it with upgrades. However, if it were not for the U.S.' strong Defense Industrial Base to offer the COTS system availability, the Israeli MOD would have to accept further performance risk in evaluating other countries' COTS systems or accept risk in schedule to develop the system with Israeli government-owned or privatize defense industry.

C. SWOT ANALYSIS

Next, a SWOT analysis was conducted for the DOD's acquisition system and the Israeli MOD's acquisition system to compare each nation's advantages and disadvantages side by side for Major Capability Acquisition pathways (see Figure 12). Maria Kniazeva defined SWOT analysis, in the book titled *SWOT Analysis*.

The process of examining an entity's potential for future actions by identifying its internal advantages (strengths) and disadvantages (weaknesses) and articulating external favorable realities (opportunities) and unfavorable trends (threats), with the objective of coordinating these four factors into an actionable strategic outline (Kniazeva, 2023, p. 3).

1. Strengths

After analysis of the referenced material and the two case studies, the following are identified as comparative strengths of each nation:

DOD strengths:

- Robust acquisition process with six separate pathways for flexibility.
- Detailed oversight throughout decision support systems minimizes risks.
- Highly capable Defense Industrial Base with competitive environment for source selection.
- DOD's budget is orders of magnitude larger than the MOD budget.



Israeli MOD strengths:

- Willingness to accept performance risks to support a condensed schedule.
- Multiple options for highly capable foreign COTS systems.
- The small size of force and higher risk tolerance facilitates a faster approval process for programs.

2. Weaknesses

After further analysis, the following are the identified comparative weaknesses of each nation:

DOD weaknesses:

- Out of the DOD's six acquisition pathway options it uses the Major Capability Acquisition pathway for most weapon systems which has more oversight and a lengthier schedule compared to the other pathways.
- The DOD demonstrates limited risk tolerance in prioritizing schedule over cost and performance in major defense acquisition programs.

Israeli MOD weaknesses:

- Majority of defense budget reliant on foreign military financial aid from allied countries.
- Limited competitive environment for developing capabilities domestically.

3. **Opportunities**

Since opportunities are external factors, there are similarities identified between the two nations during the analysis. The following are the identified opportunities.

DOD opportunities:

- higher acceptance of risk for procuring foreign and domestic COTS.
- Higher acceptance of performance risk to enable a condensed schedule or to meet milestones requirements.



Israeli MOD opportunities:

• limiting purchasing of foreign COTS to strengthen domestic industrial base.

4. Threats

Like opportunities, threats are external factors, and therefore, similarities between the two nations exist. The following are the identified threats.

DOD threats:

- Budget decreases due to changing national priorities.
- Adversaries' ability to mass produce weapon systems.
- Increased cost and schedule for developing systems due to supply and workforce issues.

Israeli MOD threats:

- International restraints due to current political pressure.
- Numerous adversaries' ability to also procure foreign-made COTS to threaten Israel.
- Budget decreases due to changing national priorities.

5. SWOT Summary

A comparison of the two nations' Defense decision support systems—for DOD (see Figure 2), and for Israel MOD (see Figure 3)—highlights that Israel has limited checks and balances throughout the process compared to the DOD. The DOD maintains different oversight with various authoritative levels for each acquisition decision support system: Secretary of Defense for PPBE, Vice Chairman of the Joint Chief of Staff for JCIDS, and MDA for the Defense Acquisition Systems. The Minister of Defense, a similar position to the DOD's Secretary of Defense, has primary oversight of the MOD's acquisition process.

Through comparing the two case studies and past resourced assessments, the two nations demonstrated differing advantages and disadvantages in their processes (see Figure 13). First, the DOD has a more robust acquisition process, with more pathways, oversight, and a more capable defense industry base compared to Israel's. Israel also has limited options for a domestic industry and must rely heavily on foreign allied supplies.



Alternatively, Israel accepts risk to performance and cost to meet a condensed schedule, while the DOD rarely accepts that kind of risk for the Major Capability Acquisition pathway. The Israeli MOD's smaller defense force size, limited defense budget, higher risk tolerance, and preference to pathways facilitating priority to schedule allow for a quicker approval process compared to the DOD. While the DOD prefers the Major Capability Acquisition pathway for most of its programs, the Israeli MOD prefers a pathway similar to the Urgent Capability Acquisition or MTA to deliver systems rapidly to the warfighter. Akin to the DOD's SOCOM, the Israeli MOD demonstrates a quicker approval process and accepts performance risk to prioritize schedule for rapid deployment to the warfighter. Finally, Israel has options for purchasing foreign-made COTS and is willing to accept risk to deliver quickly to its warfighters. While the DOD also has a vast number of foreign allies to purchase from, there are limited foreign defense industrial bases that are comparable to the US' capability and capacity; therefore, the DOD rarely accepts risk in purchasing foreign-made COTS.

		Advantages	Disadvantages		
		<u>Strengths</u>		Weaknesses	
	DO	D	DO	D	
	1.	Robust acquisition process with six separate pathways for	1.	Preference to less risky option of the Major Capability	
		flexibility.		Acquisition pathway for most weapon systems which has a	
	2.	Detailed oversight throughout the decision support system		more oversight and a lengthier schedule.	
		minimizes risks.	2.	Limited risk tolerance in prioritizing schedule over cost and	
nal	3.	Highly capable defense industrial base.		performance in most programs.	
ter	4.	Large, self-reliant defense budget.			
In			Isra	aeli MOD	
	Isra	neli MOD	1.	Majority of defense budget reliant on foreign military	
	1.	Willingness to accept performance risks to support a condensed		financial aid.	
		schedule.	2.	Limited domestic industry, with high reliance on foreign	
	2.	Multiple options for highly capable foreign COTS systems.		assistance.	
	3.	Small size of force and higher risk tolerance facilitates faster			
		approval process for programs.			
		Opportunities		<u>Threats</u>	
	DO	D	DO	D	
	1.	Accepting higher risk for procuring foreign and domestic COTS.	1.	Budget decrease from changing national priorities.	
	2.	Increase use of MTA and Urgent Capability Acquisition	2.	Adversaries' ability to mass produce weapon systems.	
nal		pathways rather than Major Capability Acquisition pathway.	3.	Increase to cost and schedule from supply and workforce	
ter	3.	Higher acceptance of performance risk to enable a condensed		issues.	
E		schedule.			
			Isra	aeli MOD	
	Isra	neli MOD	1.	Budget decrease from changing national priorities.	
	1.	Limiting purchasing of foreign COTS to strengthen domestic	2.	International restraints due to current political pressure.	
		industrial base.	3.	Adversaries' ability to rapidly procure foreign made COTS.	

Figure 13. SWOT Analysis



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V. CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to compare the DOD's acquisition process to that of an acquisition approach of the Israeli MOD through case studies of procurement for similar combat vehicle acquisition programs. Despite using two different acquisition strategies (one a development program and one a modified COTS procurement), the case studies demonstrate both nations' acquisition systems. Through the case studies of similar combat vehicle acquisition programs, a SWOT analysis was conducted between the two nations to identify comparative internal and external advantages and disadvantages to the nations' acquisition processes.

While the DOD and Israeli MOD acquisition systems have more similarities than differences, the results of the analysis found three key differences. First, the DOD's budget is orders of magnitude larger than the MOD budget, with the MOD relying heavily on foreign military financial aid. Next, Israel's MOD has a much smaller defense force, and due to limited personnel has less authoritative oversight compared to the DOD. Finally, Israel's MOD prefers to leverage quicker pathways for major weapons systems acquisition similar to the DOD's Urgent Capabilities Acquisition and MTA pathways, while the DOD prefers the Major Capability Acquisition pathway. Through these rapid acquisition pathways, the Israeli MOD relies heavily on the procurement of foreign-made COTS. Based on these three identified differences, the Israeli MOD operates its acquisition approach like that of the DOD's SOCOM. Like SOCOM, the Israeli MOD has limited oversight and accepts risk in performance to prioritize schedule for rapid delivery of capability to the warfighter.

The following are the research answers to the posed primary questions:

Primary research question 1: What are the strengths, weaknesses, opportunities, and threats of the U.S. DOD acquisition system compared to the Israeli MOD acquisition system?

Response: After conducting a SWOT analysis, the DOD has four identified strengths compared to the Israeli MOD. First, the six acquisition pathways allows for a flexible approach. Second, the decision support system has detailed oversight, which minimizes risk. Third, the highly capable U.S. Defense



Industrial Base facilitates a competitive environment for source selection. Fourth, the U.S. has a robust, self-reliant defense budget. Conversely, the DOD has two identified weaknesses compared to the Israeli MOD acquisition system. First, the DOD uses the extensive Major Capability Acquisition pathway over the rapid pathway options, resulting in longer schedules and more oversight. Second, the DOD has limited risk tolerance in prioritizing schedule over cost or performance capabilities in most programs. The DOD has three identified opportunities which could facilitate condensing the schedule for delivery of a system. First, accept a higher risk in procuring foreign and domestic COTS. Second, increase the use of the MTA and Urgent Capability Acquisition pathways more than the Major Capability Acquisition pathway. Third, higher acceptance of performance and cost risk to prioritize schedule. Finally, there are three major threats that would negatively affect the DOD acquisition process. First, changing of national priorities could result in a decreased defense budget. Second, many of the US' adversaries demonstrate the ability to mass produce weapon systems quickly. Third, supply and workforce issues can result in an increased cost and delayed schedule for delivery of weapon systems.

Primary research question 2: What identified causes can explain the differences between both processes?

Response: The major causes that explain the differences between both processes is primarily due to the size differences of the nations and the respective defense budgets. The size of the DOD's forces and budget is significantly larger than that of Israel's MOD. Despite its small size and limited defense budget, Israel's MOD must consistently deliver weapon systems rapidly to the IDF to face its many threats. To combat this obstacle, Israel's MOD has adopted a position similar to that of SOCOM to enable rapid acquisition pathways with a streamlined approval process. Israel's MOD demonstrates a high-risk tolerance in performance to deliver capability gaps to the warfighter. However, Israel's risk tolerance can be linked to its strong relationship to the U.S., which has a very capable defense industrial base.



A. RECOMMENDATIONS

The Israeli MOD demonstrated a strength in its minimal authoritative approval oversight and higher performance risk tolerance to support a condensed schedule. While both the DOD and Israeli MOD have mature acquisition processes, both nations demonstrated limitations. Israel doesn't have a perfect system, with its small defense industrial base size providing restricted options for source selection in developing systems domestically and its heavily reliant defense budget on foreign military financial aid. Therefore, the DOD should only adopt limited changes to its process from the strengths Israeli MOD demonstrates.

Recommendations for the DOD to implement are the following:

The DOD to accept a higher performance risk tolerance, when appropriate, to purchase foreign-made COTS systems, especially in the case of replacing aging systems.

The DOD to accept a higher performance and/or cost risk tolerance in prioritizing schedule, when appropriate, through an increased use of MTA or Urgent Capability Acquisition pathway rather than the Major Capability Acquisition pathway, especially in the case of replacing aging systems.

B. FUTURE RESEARCH

This research was limited to comparing Major Capability Acquisition pathways between the DOD and Israeli MOD, with the case studies focused on combat vehicles. Future research can delve into comparing the following possibilities:

Continue with a comparison of the Major Capability Acquisition pathway between the DOD and Israeli MOD; however, through case studies of alternative platforms such as aircraft, naval vessels, or missile defense systems.

Continue a comparison between the DOD and Israeli MOD through other acquisition pathways such as the Urgent Capability Acquisition, Middle Tier of Acquisition, or Software Acquisition.



Expand the comparison of DOD's Major Capability Acquisition pathway to that of the many other NATO or UN allies, using a similar case study of similar systems.

Future research in one or all these possibilities can further facilitate recommendations between the DOD and its allies with opportunities for policy changes or tailoring of processes.



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