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MARKET RESEARCH CENTER OF EXCELLENCE

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NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

JOINT APPLIED PROJECT REPORT

MARKET RESEARCH CENTER OF EXCELLENCE

March 2019

By: Kenneth A. Carkhuff
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MARKET RESEARCH CENTER OF EXCELLENCE

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Submitted in partial fulfillment of the
requirements for the degree of

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March 2019

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MARKET RESEARCH CENTER OF EXCELLENCE

ABSTRACT

Market research is a critical step in the acquisition process and requires due diligence; however, in October 2014, the Government Accountability Office identified limitations in market research performed on Department of Defense (DoD) procurements. To address these limitations, the authors evaluated issues that DoD acquisition professionals face in completing market research. They reviewed current federal literature pertaining to market research and analyzed data received from a questionnaire sent to more than 75 contracting and acquisition personnel, ranging from GS-09 contract specialists to Senior Executive Service-level assistant secretaries of the Navy. Different tools for market research were analyzed and benefits of a command-level staffed Market Research Center of Excellence were explored. Finally, the authors presented seven recommendations to improve market research effectiveness.

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TABLE OF CONTENTS

ix

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LIST OF FIGURES

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LIST OF TABLES

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LIST OF ACRONYMS AND ABBREVIATIONS

AACOE	Army Acquisition Center of Excellence
AS	Acquisition Strategy
AL&T	Acquisition Logistics and Technology
AT&L	Acquisition, Technology and Logistics
BAA	Broad Agency Announcement
BBP	Better Buying Power
BIC	Best-in-Class
BLUF	Bottom Line up Front
CIGIE	Council of the Inspectors General on Integrity and Efficiency
CoE	Center of Excellence
CPM	College of Program Management
CRADA	Cooperative Research and Development Agreement
D2D	Data to Decisions
DAU	Defense Acquisition University
DASN(AIR)	Deputy Assistant Secretary of the Navy (Air Programs)
DFARS	Defense Federal Acquisition Regulations Supplement
DoA	Department of the Army
DoD	Department of Defense
DoDAAC	Department of Defense Activity Address Code
DoN	Department of the Navy
DPAP	Defense Procurement and Acquisition Policy
DSBS	Small Business Administration Dynamic Small Business Search

EGI	Economic Growth Institute
FAR	Federal Acquisition Regulation
FBO	Federal Business Opportunities
FFATA	Federal Funding Accountability and Transparency Act
FY	Fiscal Year
FPDS	Federal Procurement Data System
FPDS-NG	Federal Procurement Data System- Next Generation
FSRS	Federal Sub-Award Reporting System
FSSI	Federal Strategic Sourcing Initiatives
GAO	Government Accountability Office
GOVCON	Government Contracting
GSA	General Services Administration
GTRI	Georgia Tech Research Institute
HUBZone	Historically Underutilized Business Zone
IMPAX	Innovation and Modernization Patuxent River
IPT	Integrated Product Team
IPTL	Integrated Product Team Lead
LRAF	Long Range Acquisition Forecast
MaRCOE	Market Research Center of Excellence (proposed)
MAX PRAC	MAX Federal Community website
MDN	Maryland Defense Network
MFT	Multifunctional Team
MIBP	Manufacturing and Industrial Base Policy
MR	Market Research

MRCOE	DoD Office of Small Business Programs Market Research Center of Excellence (embedded in DPAP e-business)
NAICS	North American Industry Classification System
NAM	National Account Manager
NAVAIR	Naval Air System Command
NAVSEA	Naval Sea Systems Command
NAWCAD	Naval Air Warfare Center Aircraft Division
NDAA	National Defense Authorization Act
NDS	National Defense Strategy
NETWARCOM	Naval Network Warfare Command
NMCI	The Navy Marine Corps Intranet
NPS	Naval Postgraduate School
NSS	National Security Strategy
OEA	Office of Economic Adjustment
OFPP	Office of Federal Procurement Policy
OSBP	Office of Small Business Programs
PAX	Patuxent River
PCADD	Process of collecting and analyzing information, making a decision, and then documenting the results
PEOU&W	Program Executive Office for Unmanned Aviation and Strike Weapons
PIA	Partnership Intermediary Agreement
PSC	Product and Service Code
PTAC	Procurement Technical Assistance Center
PWS	Performance Work Statement
RESI	Regional Economic Studies Institute

RFI	Request for Information
RFP	Request for Proposal
S3COE	Source Selection Support Center of Excellence
SAM	System for Award Management
SBA	United States Small Business Administration
SBIR	Small Business Innovation Research
SBP	Small Business Professional
SD-5	Market Research Gathering Information About Commercial Products and Services
SECNAV	Office of the Secretary of the Navy
SITSUM	Situation Summary
SME	Subject Matter Expert
SOCOM	United States Special Operations Command
SOFWERX	PIA between Doolittle Institute and SOCOM
SOO	Statement of Objectives
SOW	Statement of Work
STTR	Small Business Technology Transition
SWOT	Strengths, Weaknesses, Opportunities and Threats
TACOM	Tank-automotive and Armaments Command
TPP	The Patuxent Partnership
TRL	Technology Readiness Level
UM	University of Michigan
USC	United States Code
VAO	Virtual Acquisition Office

VULCAN   SOCOM VULCAN Scouting Tool

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I.   INTRODUCTION

> So that [congressional authority to the Navy for rapid prototyping] speaks to open architectures, it speaks to having a very diverse front end of bringing in non-traditional thinkers in the labs and enabling everybody in America to help give us ideas and then creating the acquisition programs that can then quickly seize those ideas and bring those for consideration.
>
> — James Geurts,
> Assistant Secretary of the Navy (Research, Development and Acquisition)
> (Abbott, 2018)

Market research (MR) is the process of collecting and analyzing information, making a decision, and then documenting the results (PCADD), as defined in the Market Research Gathering Information About Commercial Products and Services (SD-5) published by the Defense Standardization Program Office. Additionally, the Federal Acquisition Regulation (FAR) devotes an entire chapter (Part 10) to MR, which "prescribes policies and procedures for conducting market research to arrive at the most suitable approach to acquiring, distributing, and supporting supplies and services" (FAR 10.000). It is based on statutory requirements found in 41 United States Code (USC) 3306(a)(1), 41 USC 3307, 10 USC 2377, and 6 USC 796. Obviously, MR is a critical step in the acquisition process and requires due diligence. However, in October 2014, the General Accounting Office (GAO) identified limitations in the MR performed on Department of Defense (DoD) procurements. This finding validated the work of Dr. Aruna Apte, Dr. Uday Apte and Dr. Rene Rendon of the Naval Postgraduate School (NPS) in their 2010 article "Contracting for Services in the U.S. Army: An Empirical Study of Current Management Practices" published in the *Journal of Contract Management*. The article cited recent GAO and DoD Inspector General reports that "have shown that [DoD] has not conducted adequate market research during procurement planning of services contracts" (Apte, Apte & Rendon, 2010, p.10). Additionally, improving MR was a constant theme in the Better Buying Power (BBP) trilogy under the last presidential administration. Our team investigated current MR literature, MR training and MR practices, specifically including communicating with industry. Communicating with industry is embedded in four of the

1

eight MR techniques prescribed in FAR Part 10 and communicating with industry is also one of the seven MR guiding principles prescribed in the SD-5, clearly illustrating that communicating with industry is a key element of the overall MR process. We also developed and issued a MR survey to contracting and acquisition personnel. Finally, based on our investigation and analysis we then developed requirements for a notional Market Research Center of Excellence (MaRCOE) to help DoD agencies and major buying commands improve MR.

A.   BACKGROUND

The United States has entered a new era as the nation emerges from continuous war in the Middle East since 2001 and now faces a renewed great power rivalry and an erosion of our competitive military advantage. This strategic shift was addressed in the first National Security Strategy (NSS) produced under the Trump administration and released in December 2017. The NSS states that the "United States will respond to the growing political, economic, and military competitions we face around the world" (Trump, 2017, p. 2). The strategic shift was also highlighted in the Summary of the 2018 National Defense Strategy (SNDS) issued by Defense Secretary James Mattis where he states "The National Defense Strategy acknowledges an increasingly complex global security environment, characterized by overt challenges to the free and open international order and the re-emergence of a long-term, strategic competition between nations" (2018, p. 2). In summary, Mattis lists 11 defense objectives that will enable the department to support the NSS, two of which our team believe relate specifically to the defense industrial base. The first of our two selected objectives involves the standard acquisition program management metrics of cost, schedule and performance and driving change into the culture put forth as "continuously delivering performance with affordability and speed as we change Department mindset, culture, and management systems" (Mattis, 2018, p. 4). Our team believes this objective relates to MR, as the government acquisition teams must be well aware of and fully understand industry business practices in order to capitalize on these trends and get procurements on contract faster and for rapid fielding of new capabilities. The second of our two selected objectives we believe focuses on the ability of the industrial base to deliver innovation and is put forth as "establishing an unmatched twenty-first

century National Security Innovation base that effectively supports Department operations and sustains security and solvency" (Mattis, 2018, p. 4). Our team believes this objective speaks directly to collaborating with industry to drive innovation, particularly as the NDS has shifted from a budget-driven strategy to a concepts-based strategy.

Secretary Mattis goes on to promulgate the department's strategic approach based on three prioritized and "distinct lines of effort" that will "expand the competitive space" (Mattis, 2018, p. 5). The three foundational lines of effort are "rebuilding military readiness as we build a more lethal Joint Force"; "strengthening alliances as we attract new partners"; and "reforming the Department's business practices for greater performance and affordability (Mattis, 2018, p. 5).

Clearly, objective one, which highlights "increased lethality" as the Department's goal, relates specifically to the defense industrial base and objective three impacts the way the Department will relate to the defense industrial base in the future. Additionally, the NDS states that these objectives underpin the planned budgets for fiscal years 2019–2023 as the Department plans to "make targeted, disciplined increases in personnel and platforms to meet key capability and capacity needs" (Mattis, 2018, p. 6). In order to accomplish these objectives, the Department will need to collaborate with the defense industrial base (both traditional and non-traditional defense partners) to procure the needed goods and services and a fair market price. Mattis laid out his strategy to achieve these stated goals under his action by stating that,

> the Department, with the support of Congress, will provide the defense industry with sufficient predictability to inform their long-term investments in critical skills, infrastructure, and research and development. We will continue to streamline processes so that new entrants and small-scale vendors can provide cutting edge-technologies (Mattis, 2018, p. 11).

Part of this collaboration will require engaging and communicating with industry as requirements are developed during the acquisition planning process. The importance of this process was highlighted by the new Deputy Secretary of Defense, Patrick Shanahan, in his "Engaging with Industry" memorandum to the senior department leadership on March 2, 2018. In his memorandum, which updates a 2010 Deputy Secretary of Defense memorandum, Shanahan states that,

Our National Defense Strategy (NDS) directs our intentional engagement with industry to harness and protect the National Security Innovation Base as well as modernize key capabilities. Cultivating a competitive mindset requires that we optimize our relationships with industry to drive higher performance while always remaining within the letter and spirit of ethics and procurement regulations (p.2).

It is important to note that this memorandum is one of the first memorandums issued by Deputy Secretary of Defense Shanahan, so engaging with industry must be an important issue he wishes to address with the department as he calls for "early, frequent, and clear communications with suppliers" (Shanahan, 2018). Finally, the new assistant secretary of the Navy for Research, Development and Acquisition (ASNRDA), James Geurts, spoke during an interview with the director Office of Small Business Programs (OSBP) for the Department of the Navy, Emily Harman, about his philosophy on communicating with industry. He said that government employees need to "respect the boundaries of the competitive process," but that the government "should always be dialoging" with industry (DoN OSBP, 2018a). He went on to state that industry and the government have the "shared goal of national security," and that government needs to partner with both large and small businesses as part of the "whole ecosystem" of a healthy industrial base to enable national security (DoN OSBP, 2018a).

This paper evaluates conventional MR practices and various web-enabled MR tools that are either deployed or under development by federal agencies and state entities. The investigation of the tools led our team to define what we call the MR "Valley of Death," and this concept will be explored in Chapter IV, which discusses and analyzes the tools. The paper assumes the reader has a working knowledge of basic MR principles and does not spend a lot of time addressing the MR process. In fact, this paper actually builds on the excellent MR foundation laid out in the Market Intelligence Guide (NPS-CM-12-009) published by several students in the Graduate School of Business and Public Policy of the Naval Postgraduate School (Hawkins et al., 2012). The purpose of the guide, as stated in the introduction to this guide, is to ensure it "provides assistance to acquisition personnel in developing MR strategies and activities for their acquisition programs involved in strategic sourcing and complex, high-value U.S. federal procurements" (Hawkins et al., 2012, p. 11). The paper also analyzes feedback received on the MR questionnaire our team

provided to over 75 contract specialists and acquisition professionals within the Department of the Army (DoA) and Department of the Navy (DoN). Additionally, the paper proposes the concept of establishing a staffed MaRCOE at a buying command. Finally, the paper makes recommendations for improving MR across DoD.

B.   THE PROBLEM

The purpose of this study was to analyze the performance of market research within the Department of Defense and to identify potential areas of improvement. Secretary Mattis stated his intention to reform the defense acquisition system when he spoke to the Association of the U.S. Army at their annual convention in Washington, DC, in October 2017. His comments were quoted by Lauren Williams in her article titled "Mattis: 'Open Communication with Private Sector Is the Key to Acquisition Reform,'" published in FCW on October 2017. It is very evident that Mattis sees a need for improved communications between the defense department and industry.

The problem our team analyzed is that the performance of adequate MR is lacking within the Department of Defense; most of which stems from the fact that the government does a poor job of communicating (engaging) with industry. Our researched focused on the causes of these inadequacies and recommendations for potential improvement. Communicating with industry is embedded in four of the eight MR techniques prescribed in FAR Part 10 and the communication can take various forms. Examples of the four techniques include the following:

- Contacting knowledgeable individuals in Government and industry regarding market capabilities to meet requirements

- Publishing formal requests for information in appropriate technical or scientific journals or business publications

- Participating in interactive, on-line communication among industry, acquisition personnel, and customers

- Conducting interchange meetings or holding pre-solicitation conferences to involve potential offerors early in the acquisition process (FAR 10.002(b)(2)(i-viii), n.d.-d).

In fact, a recent GAO survey of industry found that the government RFI process might be placing a higher than expected burden on industry and yielding a lower return on investment than expected. The survey garnered 78 responses, and GAO analysis revealed that each company logged over 1400 hours and accrued costs over $936K annually responding to RFIs for requirements that may never even be solicited (VAO, 2018b). Additional information from the responses indicated that an RFI response could cost a company between $5K-$40K and take anywhere from 20 hours to 39 hours to prepare their response. This data, when normalized, indicates that an average company responds to only 36 percent of the RFIs received. Even with limited pool of responses, the data indicates that it is unlikely the government is communicating effectively with industry through the RFI process.

An article in *Defense Industry News* titled "Army Struggles to Open Up to Industry" on 18 August 2016 did a great job of highlighting the problem. The article described the third Army Innovation Summit in the past nine months that was attended by the Deputy Secretary of Defense for Acquisition, Technology and Logistics, the Undersecretary of the Army, the Army Acquisition Chief and several four-star generals. The summit was an attempt by the Army to increase communication between the Army, industry and academia and "to explore the art of the possible on weapons programs before the Army locks in official requirements that have—far too often—proven too ambitious, too expensive or too inimical to innovation" (Freedberg, 2016, p. 1). The problem arose when attorneys from two of the participating army commands decided ten days before the event that industry representatives could not participate in the working groups and help write recommendations based on their interpretation of the FAR. During the open sessions in which industry was allowed to participate, attendees stressed their desire to communicate with the Army early in the acquisition process as they stated that "they want dialogue with the Army from the earliest stages of a project—before the service sets requirements or appoints a program manager" (Freedberg, 2016, p. 3). Industry further requested to be

informed of projected cost, schedule and performance information without being told how to solve the problem. They even cited the continual drumbeat of communication that led to the development of the Mine Resistant Armor Protected vehicle as a great example of how the process should work.

Based on our acquisition experience, our team concurs with the communication issues discussed in the *Defense Industry News* article and agrees with the author's conclusions that breaking down barriers and fostering more robust communication between the government, industry and academia are desired. This will help to drive the industry's research and development efforts towards the real needs of the DoD, which are becoming ever more critical as our adversaries are closing the technology gap. Also, ASNRDA issued a memorandum titled "Middle Tier Acquisition and Acquisition Agility Guidance" that required "learning and changing the way we do acquisition" (ASNRDA, 2018). In that memorandum, Geurts directed the systems commands and program executive offices to "assess their organizations' contracting, technical, legal, and financial processes to facilitate the acceleration of programs when appropriate" (ASNRDA, 2018). MR is part of the acquisition process and since MR is performed by both technical and contracting personnel, MR should be part of this mandated evaluation.

This ASNRDA guidance came on the heels of a recent list that was compiled by the Council of the Inspectors General on Integrity and Efficiency (CIGIE) and published in the Virtual Acquisition Office (VAO) on 23 April 2018, which listed procurement management as one of the top seven management and performance challenges facing the federal government. The procurement management challenge was broken down into three components: overall planning, overseeing contractor performance, and training. MR is part of the planning process and training enables a higher level of performance (VAO, 2018c). The ASNRDA offered three methods for government agencies to improve MR during his interview with Emily Harman on 11 April (DoN OSBP, 2018a). He said agencies need to make opportunities easier to find, particularly for small businesses since they can help solve existing and emerging problems. Geurts (2018c) said that he wants to eliminate barriers to entry for small business and that he would like the Navy to be known as the "easiest to work with." He also said that government agencies need to ensure use of long-

range acquisition forecasts (LRAF) and that agencies should use Broad Agency Announcements (BAA) to find innovative research and innovative technology. Finally, as a follow-up to her interview with Geurts, Emily Harman addressed the need for improved communication with industry during her interview with two small-business professionals (SBP) on May 4, 2018. The purpose of the interview was to teach small businesses how to be procurement ready for working with the DoN. During the interview she stated, "there is a lot of emphasis on us [communicate] the government communicating better with industry, so that's something that the department of the Navy folks are trying to do is communicate better" (DoN OSBPb, 2018c).

C.   METHOD

Our team investigated current MR literature including existing guidance on MR policy and processes. We also examined MR training available at the Defense Acquisition University (DAU) and at a major buying command, the Naval Air Systems Command (NAVAIR). We then examined common MR practices based on the literature including communicating with industry and looked for areas of improvement. Our team also sent out a survey of nine questions to members of the acquisition workforce at selected commands within the Army and the Navy. Finally, our team developed requirements for a notional MaRCOE to help DoD agencies and major buying commands improve MR.

In addition to the review of the literature, and in order to gain a better comprehension of the workforce's understanding of MR needs/requirements/policies/ practices, we developed a survey consisting of the following nine questions (the full survey form can be found as the Appendix to this document) and distributed it to contracting and acquisition personnel soliciting their feedback:

1.   What is your current acquisition position?

2.   What Market Research knowledge, skills, and abilities are necessary to perform your job?

3.   Are there current market research training opportunities available for DoD acquisition professionals? What are they?

4.   In what ways has the requirement for market research expertise for DoD acquisition professionals changed over the last few years?

5.   How do acquisition professionals distinguish between market research for services and market research for hardware?

6.   Describe any known areas for market research improvement. What are the intended goals of these efforts?

7.   Describe any known market research training and/or policy gaps.

8.   Describe any commonly accepted best practices in market research.

9.   Has the acquisition community expressed a need for a MaRCOE? If so, what are the anticipated benefits?

D.   SCOPE

This paper evaluates conventional MR techniques, such as communicating with industry as detailed in the FAR and the SD-5. The paper also reviewed various web-enabled MR tools that are either deployed or under development by federal agencies and state entities. All of the assessments of the various web-enabled MR tools are based on demonstrations attended and/or tool usage by members of our team. In addition, our team sent out over 75 surveys and analyzed the 28 responses we received (to be discussed in depth in Chapter III, "Questionnaire Data Analysis"). Our research and data compilation were finalized on 30 June 2018 to allow for team analysis. However, due to the lengthy thesis approval process limited technical updates that either impacted or supported our findings were incorporated into the thesis along the way.

E.   SUMMARY

This paper methodically examines existing MR literature, analyzes federal and state web-enabled MR tools, assesses our survey results, and proposes a notional MaRCOE. Additionally, tool specific recommendations are made at the end of several of the MR tools

sections. Finally, several comprehensive recommendations are offered for consideration at the DoD or service component level.

II.   LITERATURE REVIEW

Due to MR being such a massive topic, as part of our research, the team decided to review published literature relative to MR. By doing so, we were better able to understand the policy documentation, guidance, and training currently offered relative to MR.

A.   FEDERAL ACQUISITION REGULATION

The first area of literature review consisted of the regulatory guidance for the federal government. The FAR devotes an entire chapter (Part 10) to MR, which lays out the appropriate manner in which one is to conduct MR in order to properly acquire and distribute supplies and/or services. In their February 1999 article in Contract Management, Floyd, Wellman, & Rendon state that "acquisition reform initiatives and the preference for commercial items have made market research a critical step in any acquisition" (p. 10). MR is a vitally important step because of the magnitude of DoD dollars spent annually for the acquisition of products and services in support of the department's important mission of national defense. Adequate MR can lead to the development of acquisition strategies that could increase competition and in some cases help provide cost savings that will allow for the reallocation of defense dollars that can be better utilized elsewhere as budget constraints are projected into the future.

As stated earlier, MR is the process of collecting and analyzing information, making a decision, then documenting the results (as defined in the SD-5) and agencies "shall conduct market research appropriate to the circumstances" (FAR, n.d.-a, p. 263). Per the FAR, the MR process applies to all acquisitions above $150K and acquisitions below $150K when "adequate information is not available and the circumstances justify its cost" (FAR, n.d.-c, FAR 10.001(a)(2)(iii)). Based on our market research experience from our combined contracting and program management expertise, we offer the following summation of MR: MR is categorized as either strategic (also known as market surveillance), which is a continuous process for gathering data on business and industry trends and on a potential supplier capabilities and practices or tactical (also known as market investigation), which is a targeted process for gaining in-depth understanding of the

market to answer specifics on a capability, product or service. MR first supports the identification of requirements and then the shaping of the acquisition plan. MR plays a key role in the requirements determination and definition process by helping sort out: what requirements can be fulfilled; what requirements can be fulfilled within cost objectives; what requirements can be fulfilled within schedule constraints; and allows tradeoffs among all of the alternatives to settle on achievable technical performance requirements with acceptable cost and schedule. MR shapes acquisition planning by helping determine the following: sole source vs. competition; industry capabilities and interest; small business participation; risk areas; and terms and conditions (L. Butts, personal communication, October 14, 2018).

MR is a continuous process that starts when establishing the mission statement and lasts through the entirety of the acquisition life cycle. However, the level and scope of MR varies at the different points in the program life cycle. MR is addressed in both DoD Instruction 5000.02 (Operation of the Defense Acquisition System) and DoD Instruction 5000.74 (Defense Acquisition of Services). DoD Instruction 5000.02 details specific statutory and regulatory requirements to include MR results in the acquisition strategy (AS) at various key decision points and small business considerations. MR is also addressed in BBP 2.0 as the memorandum calls for achieving greater efficiency/encouraging critical thinking and BBP 3.0 as the memorandum calls for encouraging innovation/technical excellence to ensure dominant capabilities to meet future threats. Most importantly, MR is the smart thing to do for the following program benefits: increasing competition at the prime and subcontracting levels; determining prevailing industry practices; identifying availability of commercially available solutions; identifying customary industry terms, conditions and warranties; understanding distribution and logistics capabilities; applying should cost initiatives; locating alternative sources of supplies and services; identifying small business innovation; determining the market to develop an accurate Independent Government Estimate; and reducing program risk. Ultimately, MR enables the acquisition team to develop the most practical and defensible acquisition approach.

B.   BETTER BUYING POWER (BBP)

The second area of literature review consisted of the recent DoD push to improve business processes and to generate greater buying power know and BBP. BBP is a trilogy of guidance memorandums to the DoD acquisition professional community from the Under Secretary of Defense for Acquisition, Technology and Logistics (AT&L) during the Obama administration that focused on implementation of numerous best practices to strengthen DoD's buying power while also improving the productivity of private industry (DoD, 2010; DoD, 2012; DoD, 2015). These are both noble goals as, at the time, the overall DoD budget was projected to decline over the next several years and the department not only had to build and maintain and force for current operations, but to develop and procure a force for the future as well. Although declining defense budgets and the requirement to balance spending between current operations and future force structure was not a new phenomenon, this attempt at acquisition reform was based on the concept of "DO MORE WITHOUT MORE," as cited by Ashton Carter in his memorandum to the acquisition workforce providing guidance on implementing BBP (2010, p. 1). The first BBP directive was issued in September 2010 and focused on "obtaining greater efficiency and productivity in defense spending" (Carter, 2010, p. 1). The second memorandum followed in November 2012 and emphasized the earlier initiatives (seven key areas) and introduced a greater focus on the professionalism of the total acquisition workforce (Kendall, 2012, p.1). The third memorandum followed in April 2015 and stressed affordability (cost consciousness or "should cost") and achieving dominance through innovation and technological excellence (Kendall, 2015, p.1). The third memorandum also stressed increasing "small business participation, including more effective use of market research." (Kendall, 2015, attachment 1).

C.   AVAILABLE MARKET RESEARCH TRAINING AT THE DEFENSE ACQUISITION UNIVERSITY

The third area of literature review consisted of the current MR training provided at the DoD level. The DAU offers the following MR classes.

1. **Market Research (CLC 004)**

The following description is taken directly from the DAU iCatalog:

The requirement to conduct MR is not policy; it's the law. This module provides a foundational understanding of the benefits of effective MR to reduce acquisition costs and cycle times, and provide greater access to advanced technologies. This module covers the differences between tactical and strategic MR; how to consolidate MR results to develop an acquisition strategy." (Defense Acquisition University [DAU], n.d.-a)

The course is taken on-line as part of the DAU continuous learning program. The course takes approximately three hours and is self-paced. The student has 60 days to complete the training

2. **Market Research for Engineering and Technical Personnel (CLE 028)**

The following description is taken directly from the DAU iCatalog *Market Research for Engineering and Technical Personnel* describes MR from the perspective of technical personnel. It explains the practical value and discusses the government mandate to conduct MR. The course addresses MR team membership, sources for obtaining market data, and techniques for technical evaluation and documentation of market information" (DAU, n.d.-b) The course is taken on-line as part of the DAU continuous learning program. The course takes approximately four hours and is self-paced. The student has 60 days to complete the training.

D. **AVAILABLE MARKET RESEARCH TRAINING AT NAVAIR**

The fourth area of literature review consisted of the MR training being provided at NAVAIR. Our team chose to assess NAVAIR since one of our team members has been involved in developing and providing this training for the past several years. The following summary is provided by our NAVAIR team member, as he was part of this process. Upon designation as the NAVAIR MR process owner, the NAVAIR Program Management competency developed a 4-hour MR class for the acquisition workforce that builds on the basic MR knowledge provided by DAU and tailors the training to equip the students to be more successful conducting MR and to provide guidance on how to prepare for all of the acquisition documentation requirements that are required based on the MR results and the

determined acquisition strategy. The class is taught by the MR point of contact in the Program Management competency with a representative from the OSBP serving as a color commentator. The class resides in the NAVAIR University College of Program Management (CPM) and is listed as Market Research for IPTLs and Project Managers (CPM-PRM-100). The course description was taken directly from the CPM website;

> This course is for current and prospective military and civilian Integrated Product Team Leads (IPTLs) and Project Managers and is also relevant for other IPT members. CPM-PRM-100 provides requisite knowledge and understanding of the importance of MR in procurement decisions. The course begins by discussing basic definitions, NAVAIR and DoD requirements, and the benefits in conducting MR. The course highlights the importance of Small Business considerations in MR and then walks the students through various resources, methods, and important websites one might use to conduct and document the research. (Naval Air Systems Command University College of Program Management, 2018)

The CPM recommends that students complete DAU CLC-004 as a prerequisite; however, it is not required.

E.   ADVISORY PANEL ON STREAMLINING AND CODIFYING ACQUISITION REGULATIONS (SECTION 809 PANEL)

The fifth and final area of literature review consisted of the periodic reports generated by the Advisory Panel on Streamlining and Codifying Acquisition Regulations (Section 809 Panel). Our team decided it would be important to review the panel's reports based on the magnitude of their congressional charter and the panel's potential to impact defense acquisition in the future. One member of our team participated in the Section 809 Panel: Transforming Defense Acquisition webinar by the Virtual Acquisition Office on 26 April 2018 during which the panel chairman, David Drabkin, provided an overview of the panel's actions to date. Additionally, the team reviewed the panel's interim report and final report volume one.

Congress established the Section 809 Panel under Section 809 of the FY 2016 National Defense Authorization Act (NDAA) (Drabkin, 2018). The panel was directed to make recommendations for changes to the procurement rules and underlying statutes with the overarching goal of making the process more efficient, more agile and more open to

nontraditional contractors (Drabkin, 2018). The panel consists of 18 members, who are appointed by the Secretary of Defense, that comprise 10 teams that each look at a certain topical area and one specialized team of two members that is looking at potential reorganization of Title 10 (Drabkin, 2018). The 10 teams are led by individuals who have had long and distinguished careers in the disciplines they are investigating (Drabkin, 2018). The 10 teams are FAR and Defense Federal Acquisition Regulations Supplement (DFARS) to statute baseline; streamlined procurement process (noncomplex acquisitions < $15M); commercial buying; barriers to entry; characteristics of successful programs; information technology acquisition; budget; streamlining regulations; cost accounting standards; and workforce (Drabkin, 2018). Certainly, commercial buying is an output of MR and barriers to entry can be erected depending on how government communicates requirements to industry. Although this panel is a work in progress and the only authority granted to the panel is to make recommendations to the congressional committees of jurisdiction (Senate Armed Services Committee and House Armed Services Committee) and DoD, our team thought it was important to discuss this panel for the following reasons:

1. The panel is focused on delivering lethality on time to the warfighter based on guidance in the 2018 National Defense Strategy and MR permeates this process.

2. The panel is investigating several topical areas that impact or are impacted by MR.

3. The panel issued an interim report in May 2017 and the first report (volume one of three) in January 2018, so there is data for analysis.

4. Since all three of the statutory recommendations from the interim report were enacted in the FY2018 NDAA, it is likely that recommendations in final reports one through three may be enacted or adopted as well.

III. QUESTIONNAIRE DATA ANALYSIS

We distributed our survey to over 75 contracting and acquisition personnel, ranging from GS-09 level contract specialists all the way to the SES-level Deputy Assistant Secretary of the Navy for Air Programs (DASN[AIR]). In total, we received 28 responses from the acquisition community. In the following sections, we will discuss the results from these responses and slightly dive into how they helped to shape our MaRCOE recommendation, discussed later in our report.

A. QUESTION 1 ANALYSIS

As stated earlier, the first question was "What is your current acquisition position?" Our group received answers from Contract Specialists, Contracting Officers, Deputy Assistant Secretary Navy for Energy, Installations and Environment (ASN, EI&E), Procurement Analysts, Associate Director OSBP, and Policy Personnel. The breakdown is captured in Figure 1.
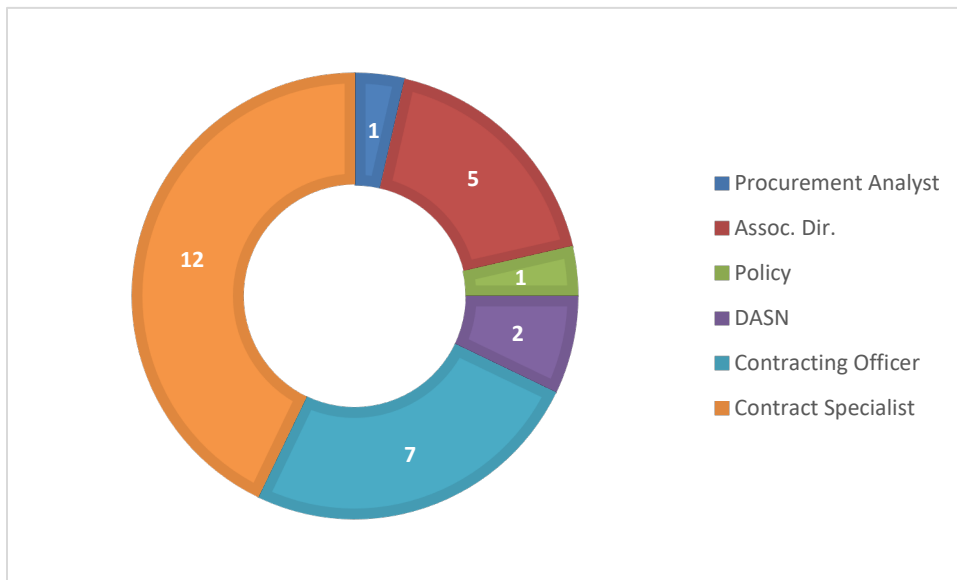
Figure 1.   Acquisition Position Breakdown

Part of our survey also required participants to provide their Grade, as Grade and Position go hand in hand. The breakdown of Grades for participants is provided in Figure 2.
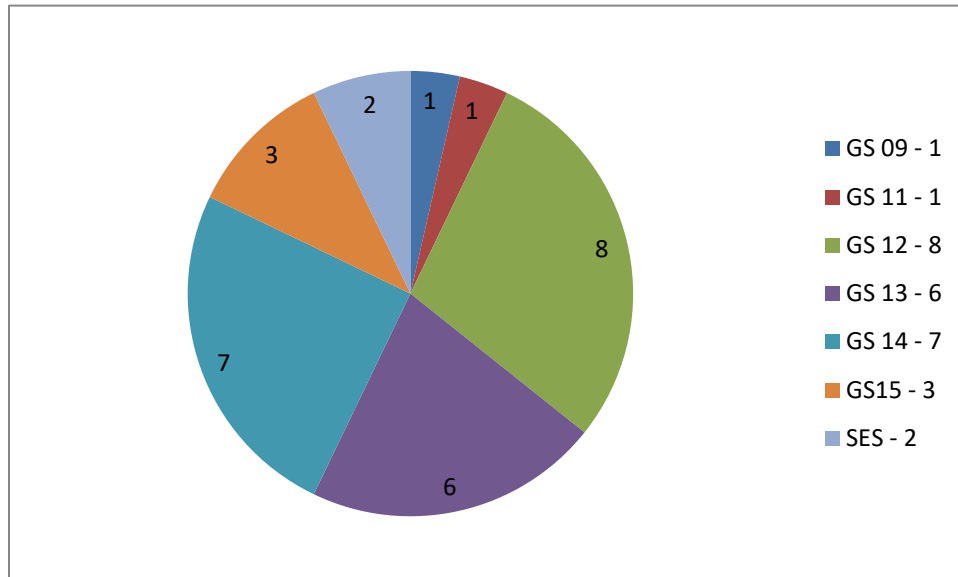
Figure 2.   Acquisition Grade Breakdown

As can be seen in the charts, we received a diverse range of responses and, as we had anticipated, received more responses from mid-level acquisition professionals and fewer responses from junior level and senior executive-level acquisition professionals. This was anticipated due to the fact that the mid-level acquisition professionals are typically the individuals who initiate or take part in the MR process, and as such we believed they would be more interested in responding to a survey regarding a MR.

B.   QUESTION 2 ANALYSIS

The second question was, "What Market Research knowledge, skills, and abilities necessary to perform your job?" We expected to receive a diverse range of answers for this question, as it is more of a personal opinion based question and depends heavily on the individual's knowledge of and experience with MR. Our team was pleased to see that only two respondents stated that there was no MR knowledge/skills/abilities required to perform

their job. This illustrated to us that there was at least some sort of awareness of MR requirements among the majority of the individuals that responded to our questionnaire. Some of the most popular answers we received were:

- Industry day – Being able to clearly express and explain information to industry participants

- Request for Information (RFI) – Being able to clearly identify the desired information being requested

- Sources sought – Being able to clearly detail the requirements to illicit the most interest and responses possible

- Awareness of market research regulations and policies and of the various ways MR can be conducted

- Internet searches

- Be aware of available resources and best practices to conduct MR

- Possess a solid understanding of the intended buy (product or service) to make sure you make accurate and relevant analysis via MR.

It is apparent from the responses that a lot of the knowledge, skills and abilities required to perform MR are based on real world experience and a knowledge base of policy and MR requirements. It appears to our team from the responses that we received that the DoD as a whole can do a better job of providing resources to obtain the skills and abilities to conduct MR to the contracting workforce. We believe this to be the case due to the fact that a majority of the responses to this question referenced real-world experience and did not reference DoD training or resources for MR.

C.   QUESTION 3 ANALYSIS

The third question that we posited to individuals was, "Are there current market research training opportunities available for DoD Acquisition? What are they?" We expected to see responses similar to the following:

1. "There is DAU training online"

2. "I don't know of any"

3. "My command has optional monthly training sessions that has covered Market Research in the past"

Our expectation was met as 19 of the 28 respondents referenced DAU Training or called out a specific DAU Course (like CLC 004), an additional 3 respondents stated they were unsure of training for MR, and there were also 2 responses that referenced command specific training.

We did receive some answers that we had not expected such as:

My belief is that the training that exists is inadequate and underserved. I believe requirements organizations should have some fundamental knowledge about market research requirements. I believe the ACQ community is too averse to engaging industry organizations and specific companies to learn what capabilities are available from industry.

Most of the training opportunities in regards to Market Research come from offices such as mine. As the Small Business Professional, I conduct the annual Small Business Program training, which includes slides and discussion on the purpose of and many ways to conduct market research. The FAR requires that we conduct market research is required for every action and states that Market Research is conducted appropriate to the circumstances. The trainings that I have attended personally in regards to market research are typically done at either the annual DoD Small Business Professionals training conference or the annual NAVY Small Business Professional training conference.

Based on the responses we received for this question, discussion among our team, and our research for this paper; our team tends to agree with the respondent who stated that the training that exists is inadequate and underserved. While training is available (such as CLC 004), it is not required training for acquisition professionals and as such the training of acquisition professionals is inconsistent across the DoD. Some commands may have in depth command level training (NAVAIR) that they their employees have the opportunity to take, while other agencies may not have any MR training at all outside of training opportunities through DAU. It appears from the answers we received that training for MR

mostly falls on the individual themselves to ensure that they have an adequate knowledge of MR requirements. Our team believes that most people just receive on the job training for MR and learn by doing as opposed to being properly trained in the art of performing MR. This is our belief based on the years of acquisition experience of our team members in addition to the responses discussed previously that state that the respondents "were not aware of any" training or that "there was some DAU training." But very few of the responses referenced a mandatory training course or valued training courses, and rather stated they learned by doing as opposed to being taught.

D.   QUESTION 4 ANALYSIS

The fourth question that we posited to individuals was, "In what ways has the requirement for market research expertise for DoD acquisition professionals changed over the last few years?" Our team was not quite sure what to expect in terms of responses for this question, our hope was that we would see an evident knowledge of the changing requirements for MR and the increased expectations for MR. We were also aware that there was a chance that a portion of our responses would state that "They were not aware of how it has changed." Approximately 17% (5 out of 28) of our respondents stated that they "Do not know," or were "unsure," or they did not provide an answer. The remainder of the responses we received were all over the board. Some of the more detailed responses that caught our attention included:

> There has been more transparency of it. Leadership is calling for more industry days and putting out more RFIs before procurements get started. In addition, wanting Market Research to happen very early and continue to happen through the procurement process.

> When I started my career at MSC, market research was specifically looked for as part of an acquisition package prior to release of the RFP. Here at NAVSEA, I am not sure anyone has ever even thought to look at my files for it and it isn't included as part of the command checklist.

> As the number of small business programs continues to expand, so do the MR requirements. When I came to the program there were two to consider – SBSA and 8(a). Now, when you include competitive and sole-source options, there are more than 10. Soon, small business "reserves" will become part of the FAR as well. With this expansion, the need for sound, current, applicable MR has increased. At the same time, many acquisition

professionals receive little structured guidance on how to apply the principles of MR to their individual procurements. In addition, GAO repeatedly refers to the quality of MR when making decisions related to the SB programs. If MR is current, clear and documented, GAO tends to shy away from disturbing the conclusions. However, unsound MR can result in a decision in favor of the industry protestor.

One of the answers we received brought something to our attention that we had not necessarily thought of: MR is not a once size fits all requirement/process. The respondent stated that their branch procures services under a Multiple Award Contract (MAC) as Indefinite Delivery Indefinite Quantity Task Order. As these services are procured competitively and awarded to contractors with an approved MAC, little MR is required prior to the solicitation phase. As such, we will need to ensure that the MaRCOE takes into account the differences between MR for services and MR for products.

Based on all the responses we received it remains evident that MR needs to become a bigger focal point in the acquisition process. While it is becoming a bigger focal point from a senior leadership standpoint, the focus needs to be passed down to the working-level acquisition professionals, as they are the ones performing the MR.

E.   QUESTION 5 ANALYSIS

The fifth question that we posited to individuals was, "How do acquisition professionals distinguish between market research for services and market research for hardware?" Our team expected to get very distinct answers for both services and hardware. Our team was surprised to receive 11 responses that stated either that; there was no difference, they are the same, that they were not sure, or provided no response.

Table 1 shows the differences between the two as identified in the remaining 17 responses:

Table 1. Market Research: Services versus Hardware

Services	Hardware
Rely on Technical expertise and Past Performance	
Focused on tasks that can be accomplished	Focused on parts and material
	Need to understand infrastructure and whether one has the controls in place to comply with DoD regulations
Understand at a minimum the type and amount of labor that would satisfy the requirement, direct labor rates, direct labor escalation, indirect rates applied to direct labor costs, material requirements in support of the services and external factors (i.e. Unions)	Understand at a minimum the hardware requirements, types and quantities, price, escalation, labor that supports the hardware, and indirect costs associated with the hardware.
Rarely straight-forward, can bring into consideration questions about existing workforce (for a competing incumbent firm) and whether the continuity can be maintained, brings in the elements of "risk" in a way that isn't seen for supplies.	More straight forward – for example a company either has the equipment and can obtain the technical data to make the product or it does not.
Services MR is often difficult, capabilities are not measurable, how do you determine during MR if a company can actually complete the tasks. The can all say they can accomplish the tasks and do the work, but you will not know until contract execution.	Hardware is typically easier, specifications can be easily measured (for example does a gun way less than 5 pounds)
The Acquisition professional often takes the lead for MR	Often is completed by the office who generates the requirement

As can be seen from Table 1, the major difference between the two is the ambiguity of service requirements and the certainty of hardware requirements. For instance, when performing MR for hardware you can easily tell if a company has the capability to produce a gun that weighs less than 5lbs, but you cannot easily determine if a company can complete the engineering tasks.

F. QUESTION 6 ANALYSIS

The sixth question that we posited to individuals was, "Describe any known areas for market research improvement. What are the intended goals of these efforts?" Our hope with this question was that individuals would identify areas of focus that we would be able to implement into our MaRCOE or specific areas of excellence to focus on for the MaRCOE. We were not surprised; however, that a large number of individuals (12) either did not respond or stated that they did not know of any. We expected a decent number of "I do not know" responses as there has not been a major focus on MR in the acquisition community.

Some of the more intriguing responses received that could be useful information during creation of the MaRCOE were

Market Research is not conducted to the extent I feel is necessary however since it is it is unchecked there is no reason to improve upon it. An area of

improvement would be to simply make market research an item that is checked during a peer review to put the onus on the contracting department to ensure adequacy.

This response brought to light the need for some sort of requirement to have verification that personnel correctly and completely processed MR. This may be as simple as requiring command either to utilize a MaRCOE (one of our recommendations later in the paper) for all MR needs, or to submit their independent MR data to a MaRCOE for review.

> Market research is a skill honed over time. It includes both formal education as well as on the job training. It also demands a constant refreshment of the knowledge of specific markets. Because of this last effort, good market research expertise is usually confined to specific markets wherein the researcher has in depth knowledge. While market research skills can be taught in the school house, development of the knowledge and expertise in a particular market is done through experience in that market. Much more needs to be trained on the skill side in critical thinking to discover capabilities within a given market, the importance of that thinking to the acquisition planning process, and how market research early on and continuously through the acquisition process affects the life cycle costs of an acquisition. This includes training in defining and segregating a market, discerning the unique characteristics of that marketplace, and how DoD can take advantage of the capabilities within the market in its acquisition planning. Also, training should address the continuous nature of market research and how the research can affect the life cycle cost of a system, product or service.

This response helped to increase our confidence in the need for a MaRCOE. By having a manned MaRCOE, individual acquisition professionals would not need to have as in-depth training on MR as the individuals working for the MaRCOE would have this training and the acquisition professionals would only need to know how to properly interact with the MaRCOE. Another response that was received stated the following:

> The areas of improvement I have seen is to engage more often with the contractor community. The goal of this effort is to provide more information to the contractor community about the requirements we have and to gain knowledge of the capabilities of the contractors.

With a manned MaRCOE, utilized by the cooperating agencies, contractors would have a one-stop shop for communication with the government during MR, and a one-stop shop for the government to obtain information from contractors.

Our team believes that this question brought to light many good ideas that can be utilized during the creation of the MaRCOE in order to help improve the MR process.

G.   QUESTION 7 ANALYSIS

The seventh question we posited to individuals was, "Describe any known market research training and/or policy gaps." Much like question six, our intent with this question was to draw out potential areas of focus pertaining to training and policy that our team could focus on during the creation of the MaRCOE. Also much like question six, we expected to see a large number of individuals respond that they "I do not know of any," "I am not sure of any," or they did not respond at all due to the fact that most acquisition professionals do not have an in-depth knowledge of all policy and training requirements especially for MR as it is not a process that is continuously done. In total 12 individuals responded with the answers referenced in the previous sentence.

Some of the more intriguing responses received that could be useful during creation of the MaRCOE were:

> I believe we need to change our approach to market research. Currently, we engage in market research in too short and narrow of a forum. Requests for Information are solicited online at fedbizopps.com and posted for a few weeks, which means only the contractors who know where and when to look will be able to see that we are requesting submissions. A similar process is followed in announcing industry days – only a few weeks online indicate when and where we will be giving industry information about forthcoming requirements. If the goal is to be inclusive as possible, why don't we stand up an online platform that is constantly open? It could outline the basic history of each program, a timeline of forthcoming requirements, lists of promising new technologies that could be adopted to improve the program, etc. You would get better feedback and be able to challenge long held assumptions of what is out there and who would play ball.

This response gets to one of the core reasons we are researching and recommending the creation of a MaRCOE.

I think there are two big gaps: 1) SBA/OSBP needs to provide more specific info to the requiring offices. It's frustrating to me when I hear the SBA rep tell a requiring office, "Oh, I met all of these SBs at this conference who are interested in doing business with NAVAIR." Great…but, that doesn't help the PM who doesn't have any more info to go on. I think sometimes, in an effort to indicate the vastness of SB capability, the Government personnel representing SB interest speak generically rather than provide direct and actionable information to the requiring office. (I know I'm guilty of the same when I was in the OSBP.) On a related note, it's not enough to tell a requirements office about a new tool without being able to share with them concrete examples of how to use it/how it will benefit them. 2) Need to connect the capable SBs with the requiring offices. I think the NAWCAD SB Industry Day does a good job of this by publishing the LRAF and having the requiring offices available to speak with interested SBs, but that's just one day a year. The challenge is connecting the IPT lead who has several requirements with capable SBs, given that his time to conduct MR is limited (even though it's part of his job as an acquisition professional to stay abreast with the marketplace). That challenge is two-fold…(a) vetting SBs to ensure they're actually capable of meeting the requirement and (b) providing training to the IPT lead such that he's comfortable engaging SBs to learn more about their capabilities. Even though communicating with industry is a tenant of BBP, I don't know if the requiring offices are comfortable engaging SBs.

This response lays out some interesting points that our team had not thought of, in particular the fact that there needs to be more meaningful communication between the Small Business office and the requiring office. We believe that these meaningful conversations could be facilitated through the MaRCOE in the future.

I don't think the current training provides someone who doesn't do it on a regular basis, the skills required to adequately perform this activity.

This response speaks to a need for more complete and in-depth training for MR that is beneficial to both a MR expert and a junior acquisition professional. Our team's intent would be to have all MR done through the MaRCOE, which would reduce the need for MR specific training, however would require training for use of the MaRCOE.

H. QUESTION 8 ANALYSIS

The eighth question we posited to individual was, "Describe any commonly accepted best practices in market research." Again, our hope was that the individuals that responded to our questionnaire would draw our attention to "best practices" that we either

A) did not think of, or B) were not aware of. Our expectation was that we would get a lot of responses that referenced Requests for Information (RFIs), Sources Sought, and Industry days. We were slightly surprised to receive 5 responses that stated that "they were not aware of any best practices."

After reviewing all 28 responses, our expectation that we would receive a lot of responses referencing RFIs, Sources Sought, and Industry Days was reached as a total of 12 individuals referenced at least one of those three practices in their responses. There were a couple of individuals who suggested that utilizing simple Internet searches were common practices at their commands for performing MR. Some 'best practices' that were identified that differed from the expected responses of RFI/Source Selection/Industry Days were:

1. Interviews with knowledgeable individuals within the industry/government

2. Participate/attend tradeshows and industry conferences

3. Professional Journals, catalogs and product literature reviews

4. Review existing DoD Multiple-Award Contract Vehicles and Other Government-Wide Acquisition Contracts (GWACs)

5. Federal Supply Schedule

6. System for Award Management (SAM)

7. SBA Dynamic Small Business Search Database

8. Be sure to ask specific but open ended questions and allow for adequate response times

This list provided our team with a solid base of best practices to consider when developing our MaRCOE proposal. We will need to ensure that our MaRCOE has the capability to perform or aid in the performing of RFIs, Sources Sought and Industry days. In addition to having these capabilities, our MaRCOE proposal incorporates the other best practices identified above.

I.   QUESTION 9 ANALYSIS

Our last question that we posited to individuals was, "Has the acquisition community expressed a need for a MaRCOE? If so, what are the anticipated benefits?" We were not quite sure what to expect in terms of responses, but were confident that we would get a mixed bag of answers. A top-level breakdown of responses is as follows:

1.   Twelve individuals were unaware what a MaRCOE was

2.   Eleven individuals believed that a MaRCOE would be beneficial

3.   Two individuals had experience with MaRCOE, but were undecided on the benefits

4.   Two individuals quoted the Better Buying Power 3.0 reference to a MaRCOE

5.   One individual did not see a benefit in a MaRCOE

After receiving and reviewing all of the responses, it became apparent that there was a disconnect within our questionnaire. With twelve individuals either responding that they did not know what a MaRCOE was or not responding at all, our team determined it would be beneficial to dive into the reasoning behind it. We started by reviewing our questionnaire, in doing so our group quickly realized that we failed to provide the acronym for MR Center of Excellence or MaRCOE anywhere within our questionnaire. By failing to provide the meaning of the acronym within the document, we believe the individuals may have been unsure what a MaRCOE was and as such could not provide a position on whether or not there was a need for one. Another reason these individuals may have responded by saying they were not aware what a MaRCOE was, and they were truly unaware what a MaRCOE is its purpose.

The responses of those who believed that a MaRCOE would be beneficial also varied greatly. They ranged from a simple "I have not heard of a need for MaRCOE expressed…I feel that MaRCOE could be a useful thing for all contract specialists." To a more detailed response of "I'm not aware of any such expression of a need, but I do think

that it would be useful…provided that it's full-service, even if that removes some of the responsibility from the requiring offices for staying abreast of the marketplace. I don't even think it would be too much if the MaRCOE was a one-stop shop where the requirements owner could indicate their requirement and the MaRCOE would research SBs, vet their actual capability, and investigate possible acquisition strategies (i.e., sole source)/contract vehicles to get to them. The MaRCOE deliverable to the requirements office would be a list of viable SB primes/contract vehicles (if any exist). I know this is probably overkill but, if we really want to increase the access of SBs to requirements owners and, consequently, their contract opportunities, I think more needs to be done by a third party to facilitate those connections because the requirements owners don't seem able to make the connections on their own."

Some additional potential benefits identified were:

1. Show stakeholders in the program office that it is not too risky to use different forms of MR to engage with a more innovative community

2. The center of excellence could act as a Subject Matter Expert and provide the latest and most useful MR technique/information.

3. Could open up the aperture to companies that we are not familiar with and we can reach out to them on specific acquisitions.

4. Could allow for an expert core team available to support MR training

5. Could bring emphasis and exposure to the value of MR

These responses illustrated to our team that the benefits of a MaRCOE have the potential to be endless depending on how it is formatted and developed. Originally, our team saw the benefits of a MaRCOE as simply being a place acquisition community could utilize to help perform the required MR steps, we had not thought of the value it would carry to the companies or how it would aid in MR training.

The two individuals who have had experience with a MaRCOE provided detailed responses, which again shed more light on things to expect from a MaRCOE as well as

potential pitfalls of a MaRCOE. These individuals drew our attention to the benefit of the speed at which an individual can develop information about who has bought what within the DoD. However, they also provided the following two pitfalls of a MaRCOE:

- Unsuccessful attempts to validate the MR related to a specific procurement, and obtained more relevant results using the FPDS-NG submission queue search.

- There is a danger in not having information tailored to your specific acquisition; just because the Navy bought engineering services from one company does not mean that the specific engineering skills they provided are applicable to the Army's engineering needs.

We did not expect to receive suggested downfalls of a MaRCOE but believe that they will help in the creation of a successful MaRCOE. While both of these are valid concerns, it is our belief that they could/would be mitigated through thorough training (of users and or staff members) and proper implementation of a MaRCOE.

The two individuals who simply provided the BBP 3.0 reference to a DoD Office of Small Business Programs Market Research Center of Excellence (embedded in DPAP e-business) (MRCOE), helped to remind us that this idea has been brought about previously and keeps us hopeful that the DoD would be receptive to a MaRCOE being implemented.

The final individual, did not see a benefit in a MaRCOE because they believed that "every contract specialist are (or should be) capable of performing exceptional market research on their own." They also stated that they believe the root cause of poor MR is poor planning and a hyper focus on expediting pre-award documentation to meet aggressive timelines. While we applaud this individual's optimistic outlook on the acquisition community's capabilities, the truth of the matter is that not all individuals are capable or have the bandwidth to perform detailed MR. Our hope/intent is that the MaRCOE once implemented would be an aid for acquisition professionals to perform more detailed MR and help to meet the aggressive procurement timelines that are not likely to be going away anytime soon.

J.   SUMMARY

When we sent out the questionnaires, our goal was to receive between 33–50% response rate, which we achieved by receiving 37% of our questionnaires back. Our expectation was that we would see some sort of knowledge gap between the junior level acquisition professionals and the senior level managers. We expected the gap to exist with the junior level acquisition professionals to have a better understanding of MR.

Our expectation was met as we received more detailed responses from the lower working-level acquisition professionals as they are the ones actually performing the MR and most of the senior level officials have not performed MR in years. The confirmation of our expectations further illustrated the need to utilize the knowledge of our younger workforce in the development of a MaRCOE.

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IV. DISCUSSION AND ANALYSIS

Our team discovered that there are essentially two different types of web-based MR tools available in the market place. The first type of web-based tool is rearward-looking in that it pulls historical data from selected databases that can then be analyzed for trend analysis. In many cases, these tools present the data in formats that are automatically generated in more usable formats than what is available in the original databases. The second type of web-based tool allows for more analysis of technical data, but is also limited to what is uploaded into the system. The questions our team kept asking are "Is there one data base in existence that would meet all MR requirements or could one be created? And if so, "Should one be developed?" and "By what organization?" Our answers to these questions will be provided at the end of this chapter in the summary section. Additionally, since some of the websites that were evaluated by our team were in various stages of development, web addresses cited in this section of the thesis may not be valid as of the publication of this thesis.

However, one finding that stood out to our team is what we are calling the "MR valley of death." The concept is similar to the Small Business Innovation Research (SBIR) so called "valley of death" where many phase II SBIRs fail to transition to phase III and programs of record for a host of reasons. The "MR valley of death" is being created by the growing gap between the latency of MR practices and web-based tools and the increasing speed at which technology is developing. It is our opinion, that MR must be as innovative as technology. MR must transition from looking into the rearview mirror to a view of the industrial base through the front windshield. In other words, we need to be looking for what we need before we get there, rather than speeding away from what we have done in the past. For the procurement of certain goods and services, historical data will be sufficient. However, for acquiring the technology needed to keep outpacing our near-peer adversaries old, stale data simply will not suffice.

A. MARKET RESEARCH—GATHERING INFORMATION ABOUT COMMERCIAL PRODUCTS AND SERVICES (SD-5)

The primary DoD guide for conducting MR is the SD-5. The document was first published in 1997 and was updated in January 2008 to account for the Internet becoming the primary means for conducting MR. The latest version primarily addresses MR for acquiring commercial products and services, but emphasizes that "the same market research techniques can be used when acquiring noncommercial products and services (SD-5, 2008, p. 1)." Our team reviewed the document and recommends that the document be updated to correct the below cited deficiencies.

The document is general in nature and additional guidance is likely required in order to conduct adequate MR, particularly when trying to find nontraditional suppliers. Additionally, the document is outdated. The document does not reflect the current Defense Acquisition System. Figure 1 lists the Technology Phase, however, per the DoDI 5000.02 the Technology Phase has been re-designated as the Technology & Risk Reduction Phase. Also, the document does not list the SBP as one of the acquisition personnel classifications the document is designed for in the Background section nor does the document list the SBP as a member of the MR team or even mention that other interested parties may be assigned to the team as determined by the program manager as stated in DoDI 5000.74 in the definition of the multifunctional team (MFT) that performs the MR. Also, Appendix B Web-Based Information Sources does not reflect the growing supply of web-based search and scouting tools being developed by federal government agencies and state entities. Finally, there are federal acquisition websites that are not listed that should be, e.g., the System for Award Management (SAM).

B. ADVISORY PANEL ON STREAMLINING AND CODIFYING ACQUISITION REGULATIONS (SECTION 809 PANEL)

Although this panel remains a work in progress, our team found three points noteworthy and applicable to our topic of MR. The first recommendation that the goal of defense acquisition be affirmed appeared in their interim report. The panel provided the following statement in their interim report "The primary goal of acquisition regulations should be to promote the mission of the agency, not to impede it" (Advisory Panel on

Streamlining and Codifying Acquisition Regulations, 2017, p. 3). As part of the acquisition process, adequate MR is essential to acquiring the goods and services needed by the warfighter for mission accomplishment.

The second area of note was highlighted during the webinar by Drabkin who made it clear that the panel is focused on delivering lethality to the warfighter on time. This is critical because, as he discussed during the webinar, the technical dominance that our nation has maintained for decades is quickly eroding as near-peers, China and Russia, emerge and challenge our supremacy and our regional hegemony (VAO, 2018c). In fact, Admiral Phil Davidson, Commander U.S. Fleet Forces Command, recently stated in his written testimony provided in advance of his appearance before the Senate Armed Service Committee as President Trump's nominee for Commander, U.S. Pacific Command that, 'China will be able to extend its influence thousands of miles to the south and project power deep into Oceania. The PLA will be able to use these bases to challenge U.S. presence in the region, and any forces deployed to the islands would easily overwhelm the military forces of any other South China Sea-claimants. In short, China is now capable of controlling the South China Sea in all scenarios short of war with the United States' (Durden, 2018, p. 1). This dire warning highlights the absolute need to increase the speed of acquisition. Our adversaries are not encumbered by our procurement rules and regulations, which gives them advantage. Drabkin addressed this very issue by stating that we must get "inside the turn" of our adversaries (VAO, 2018c). Or, as one panel witness stated, "Rather than buying yesterday's technology for delivery tomorrow we should be focused on buying tomorrow's technology for delivery today" (VAO, 2018c).

The third area deals with the changes to the defense industrial base and market place. The following data is taken from the panel's volume one report and bears highlighting. It is obvious that the panel did extensive research and discovered some huge changes taking place indicated by a decline in vendors competing for business with DoD and that this decline is projected to continue, particularly as acquisitions and mergers continue. A recent report cited in *Defense News* in January 2018 indicated a substantial decline in defense suppliers to a magnitude of 17,000 from 2011 to 2015. Additionally, "the number of small businesses registered to do business with the federal government fell

by more than 100,000 companies and the number of DoD contract actions for small businesses decreased by approximately 70 percent from FY 2011to FY 2014" (Advisory Panel on Streamlining and Codifying Acquisition Regulations, 2018a). These ominous statistics depict a rapidly changing market place that will require innovation in the way DoD does business with both large and small vendors. The panel released their Volume 2 report on 28 June 2018 and made the following statement concerning DoD acquisition "For the system to be fueled by innovation, DoD must promote active collaboration among the government research community, federally funded research and development centers, universities, and industry" (Advisory Panel on Streamlining and Codifying Acquisition Regulations, 2018b). No further analysis of the Volume 2 report is included in this paper. More information is available at https://section809panel.org/.

Note: The panel released their Volume 3 report in January 2019. Section 8 of the report was titled "Government–Industry Interactions" (Advisory Panel on Streamlining and Codifying Acquisition Regulations, 2019). Four recommendation were made by the panel in this section that addressed market research and/or the government communicating with industry. Our team consensus is that the panel recommendations validate our problem statement, findings, analysis and recommendations, the four panel recommendations are listed below along with their actual report recommendation number for traceability. It is highly recommended that Section 8 of the report be reviewed for more information.

1. Rec. 84: Direct DoD to communicate with the marketplace concerning acquisition from development of the need/requirement through contract closeout, final payment, and disposal (Advisory Panel on Streamlining and Codifying Acquisition Regulations, 2019).

2. Rec. 85: Establish a Market Liaison at each acquisition activity to facilitate communication with industry (Advisory Panel on Streamlining and Codifying Acquisition Regulations, 2019).

3. Rec. 86: Encourage greater interaction with industry during market research (Advisory Panel on Streamlining and Codifying Acquisition Regulations, 2019).

4.   Rec. 87: Establish a market intelligence capability throughout DoD to facilitate communication that enhances the government's industry knowledge through open, two-way communication (Advisory Panel on Streamlining and Codifying Acquisition Regulations, 2019).

C.   DEPARTMENT OF DEFENSE MARKET RESEARCH CENTER OF EXCELLENCE

In order to aid SBPs and contracting officers in the performance of MR, the DoD OSBP developed a MR tool that they called the MRCOE. The tool based on a legacy database developed by the DoD OSBP, was developed by a small business. The government owns the data rights. The tool was available for testing by members of the DoD SBP workforce during the fall and winter 2017–2018. The tool was demonstrated to Shay Assad, Director, Defense Pricing/Defense Procurement and Acquisition Policy (DPAP) during that time and based on the results of that demonstration, a briefing/demonstration was scheduled with representatives from DPAP Enterprise Business Systems on 6 February 2018. One member of our team participated in that demonstration at DPAP in Arlington, VA. At the briefing, it was reported that Assad was "very impressed" and that several actions were taken by the development team. (J. Metts, personal communication, February 6, 2018). The information addressed in this section is based on information obtained during that event, a review of the slides used by DoD OSBP to brief this initiative at the DoD Small Business Training Week (23-26 April 2018), as well as his interaction with the MRCOE tool large scale test. (DoD OSBP Market Research Center of Excellence Initiative brief at Small Business Training Week, 2018).

The tool is currently embedded in the Enterprise Business Systems section of DPAP.

1.   Functionality

The tool is divided into three separate sections. The first two sections, performance management and OMB MAX Federal Community website (MAX PRAC) are entirely small business centric. The third module is MR and applies DoD-wide. The data can be searched by contracting major command or agency (Department of Defense Activity

Address Code [DODAAC]); however, a standard hierarchy needs to be developed. The MR section allows for the conduct of a strengths, weaknesses, opportunities and threats (SWOT) analysis, as well as customized MR techniques. The MR section also enables the development of a MR report.

2.   Assessment

The tool was primarily designed as a MR tool for use by SBPs and contracting officers. It was noted by some of the attendees that although some of the information in the tool could apply to program managers there was no engagement with the program management community as part of the tool's requirements determination. The data is from FY10 and forward and pulls data from FPDS-NG every night. The data also supports government-wide performance management by awarding activity and funding activity and the small-business obligations are after all the small-business exclusions are applied. The tool allows the user real-time access to data while in the tool. The tool also allows the user to display data pulled from FPDS-NG in useable formats automatically as opposed to having to set-up ad hoc reports in FPDS-NG. This saves the user a lot of time and frustration and it will also enhance the standardization of data analysis across the DoD small-business community. The MR section only searches vendors registered in the System for Award Management (SAM) by North American Industry Classification System (NAICS) code and Product and Service Code (PSC). Since a vendor only needs to be registered in SAM in order to obtain a federal government contract, there are a lot of small businesses and non-traditional vendors that are not in SAM and will not be found unless the MR search is broadened. At the meeting, it was discussed that training videos were being developed and that the tool was to be updated one more time before the planned initial deployment in April 2018. However, several issues still needed to be resolved.

The issues noted at the demonstration can be bucketed into four main categories. The first category is tool verification by DPAP, which must be accomplished prior to deployment. The second category is implementation and how it will be accomplished. This category includes the promulgation by DoD OSBP to the SB Ps that the tool is mandated for use. Our concern with this approach is that MR is not solely the responsibility of the

SBP. This category also includes the required DPAP endorsement before it can be required for use by contract specialists. However, there was no plan to address use of the tool by program managers. Our team sees this as an oversight because the program managers own the requirements and are primarily responsible for conducting MR. Finally, a federated partner automated login, similar to the OMB MAX website will need to be established. The third category includes a concurrent communication strategy to the acquisition community and the business systems community. The final category includes additional functionality. This is the largest category and includes the ability for all users to access the tool by single sign-on capability. Additionally, any potential effects of new contract writing systems needs to be assessed. Finally, the ability to pull from additional data sources needs to be considered. Right now, the tool does not pull from the SBA Dynamic Small Business Search website or the Veteran's Administration Vendor Information Pages. These websites should be added as a minimum to the functionality. Finally, it was not clear how this tool addresses or interfaces with manufacturing and industrial base policy (MIBP). This is an area cited for DoD improvement by the GAO (VAO, 2018).

3. Planned Enhancement

A push and pull integration with FBO will be incorporated, thus allowing the issuance of an RFI to industry from the tool.

Notes:

1. The technical information and functionality presented in this section was verified by the DoD OSBP MRCOE program manager. However, the assessment is solely the product of the thesis team.

2. On February 4, 2019, Shannon Jackson, Acting Director, DoD OSBP announced that the MRCOE was "live and ready for use." The web link for the MRCOE is https://ebiz.acq.osd.mil/mrcoe/, however a common access card is required for log in. (Shannon Jackson, email to Small Business Directors February 4, 2019)

D.   VULCAN

The United States Special Operations Command (SOCOM) developed a scouting tool for MR called VULCAN. The tool was developed by a small business and is owned by the government. The tool is hosted on the SOCOM server, has been updated a few times and the current version is Vulcan Version: 2.15.2 (United States Special Operations Command, 2018). One member of our team participated in the VULCAN demonstration at the Office of Naval Research in Arlington, VA on 30 January 2018. The demonstration was given by Lisa Sanders, Director of Science and Technology for Special Operations Forces, Acquisition, Technology and Logistics at SOCOM. The demonstration was originally intended to increase the awareness of the tool. However, Geurts in his 14 January 2018 email to SOCOM and Navy leadership addressing the recent adoption of VULCAN as the technical scouting tool for the Army research enterprise increased the focus by stating "I would like the DON to assess doing the same so that we can get all the Services leveraging off the same platform to accelerate discovery, increase collaboration and reduce costs to both the government as well as industry" (Geurts, 2018, p. 1). The information addressed in this section is based on information obtained during the 30 January 2018 demonstration as well as his interaction with the VULCAN web-based application.

1.   Functionality

The VULCAN fact sheet provides the basic functionality. The fact sheet provides the information in the form of five questions and answers which are summarized below.

Q: What is VULCAN?

A: VULCAN is a technology-scouting platform that allows the enterprise to collaborate readily on discovery / assessment of relevant technology

Q: Why do we need it?

A: The DoD enterprise needs to keep up the contemporary technology landscape, which is expanding at a furious pace. Therefore, DoD needs to accelerate the scouting process at a pace and scale commensurate with emerging realities.

Q: What does VULCAN do?

A: It is a web-based application that allows scouts to rapidly collect technology information, share technology profiles and conduct collaborative assessments.

Q: How does VULCAN do it?

A: The tool is built on an open architecture that is focused on actionable user workflows. Users can collect, assess and share technologies and interact with the system based on their affiliation and role.

2. Assessment

The VULCAN initiative started out as a cooperative research and development agreement (CRADA) that was aimed at helping SOCOM with discovery of emerging technology for the special operator. It is a collaborative web-based application that allows full access for government users and provides limited access to industry users to upload and maintain information about their technology solutions submitted in response to Open Government Calls. The process to invite industry is very simple. Upon contact or discovery of a technology or service, a government user may send an invitation (VULCAN Scout Card token) to the industry point of contact to submit a solution of interest to the community. The industry user is also able to register for an account that allows them to access, maintain, and update their company-only information within the platform. There are over 2300 in the application. One can search within specific technology areas of interest (i.e., patrol & reconnaissance), or use advanced search filters to reduce search results, for examples, to specific technologies within specific Technology Readiness Level (TRL) ranges and/or other metrics. In addition, the platform provides the ability to create collaboration workspaces and currently there are 15 such workspaces designated across DoD. There is also an analytics section that can further break down data into a map (geographical location) function or a community (agency or command) chart for more analysis. Finally, there is the ability for users to aggregate all their activities, namely collections, assessments, reports and workspaces into their own MyPage.

The scout card is the centerpiece of how technologies are described within the scouting tool. The scout card is dynamic by default and provides a range of pertinent information. One can view a gallery of pictures and videos, as well as technical description,

differentiators, specifications, technical drawings, any government assessments, TRL, manufacturing readiness level, product rights and more. Also, a key feature is the scout card strength which is expressed on a scale of 1–100 and measures the performance of the scout card within the platform.

3.   Limitations

Any potential cybersecurity or information technology limitations are beyond the scope of this project and have not been analyzed. The limitations identified are MR process limitations. The information must be uploaded in response to government invitations (scout card token) or public government calls. There is no self-nomination of data, and industry users can decline invitations or open calls for submission. VULCAN relies on a human-network and is not a data-mining tool. Finally, VULCAN provides capabilities and does not regulate processes; hence, government users need to comply with their internal processes when disseminating information and feedback to industry users.

4.   Best Practices

VULCAN uses an interactive page called VULCAN TV to host a series of video tutorials for users and for learning how to more effectively use the full functionality of the scouting tool.

Notes:

1.   The technical information and functionality presented in this section was verified by SOCOM. However, the assessment is solely the product of the thesis team.

2.   On January 7, 2019, our team member that evaluated VULCAN was notified that SOCOM has transitioned from VULCAN to a new platform named Foundry. Foundry will be released with the core functionality of VULCAN, include all information resident in VULCAN as of December 2018 and will allow for additional capabilities to be released periodically. (Foundry Support, email to author, January 7, 2019)

E. INNOVATION AND MODERNIZATION PATUXENT RIVER (PAX)

The Naval Air Warfare Center Aircraft Division (NAWCAD) at Patuxent River entered into a PIA with the Georgia Tech Research Institute (GTRI). This agreement is called Innovation and Modernization Patuxent River (IMPAX) and serves as a trusted agent for NAVAIR. The agreement is modeled after the public-facing PIA between Doolittle Institute and SOCOM (called SOFWERX) (SOFWERX is available at https://www.sofwerx.org/). Under this recently formed PIA, which also is the first PIA designed to transition technology to naval aviation, "IMPAX has the ability to communicate directly with government agencies, industry, academia, and the public to assist with completing complex technical projects" (IMPAX, brochure, personal communication, 2018). The goal is for IMPAX to bring small and non-traditional suppliers with needed technology to NAVAIR/NAWCAD (IMPAX, brochure, personal communication, 2018). IMPAX advertises the following specialties: technology scans; the combining of multiple concepts and technologies; and prototyping and evaluation.

A partnership intermediary agreement (PIA) is authorized by Title 15 U.S.C., Section 3715. A PIA can be used to promote cooperative activities and to develop outreach programs to small businesses, state agencies and academia with the goal of expanding inter-utilization of emerging technology (R. Winston, personal communication, April 17, 2018). Since a PIA does not fall under the FAR or the DODI 5000.02 it allows for non-traditional means of transitioning technology to the warfighter and by its structure, can be more attractive to small companies that do not normally pursue business opportunities with the federal government. Additionally, a PIA can be resourced by multiple types of funding allowing greater flexibility. Figure 3 depicts a notional PIA.
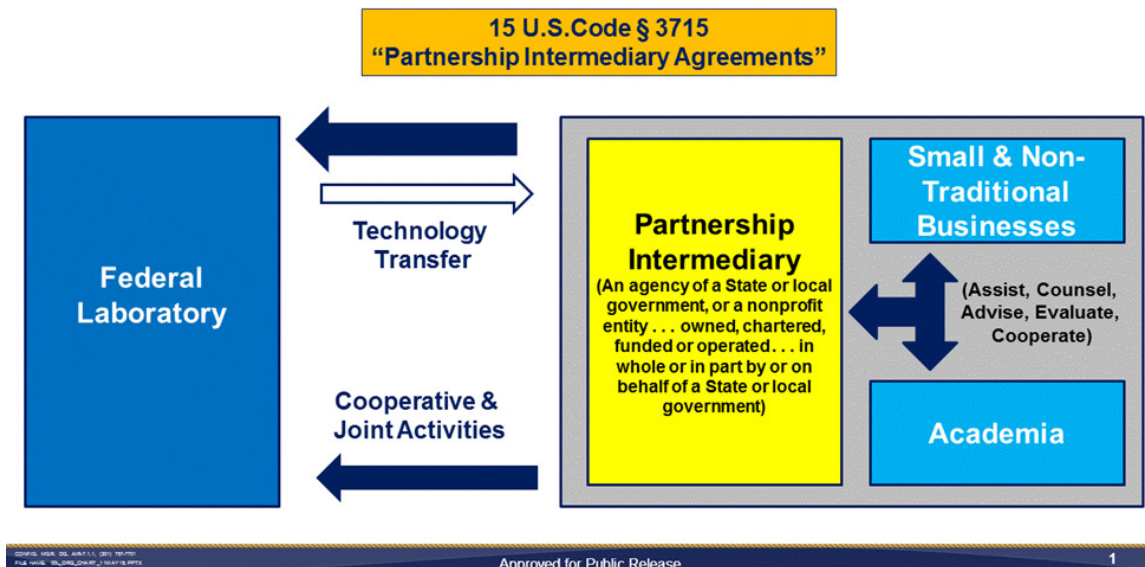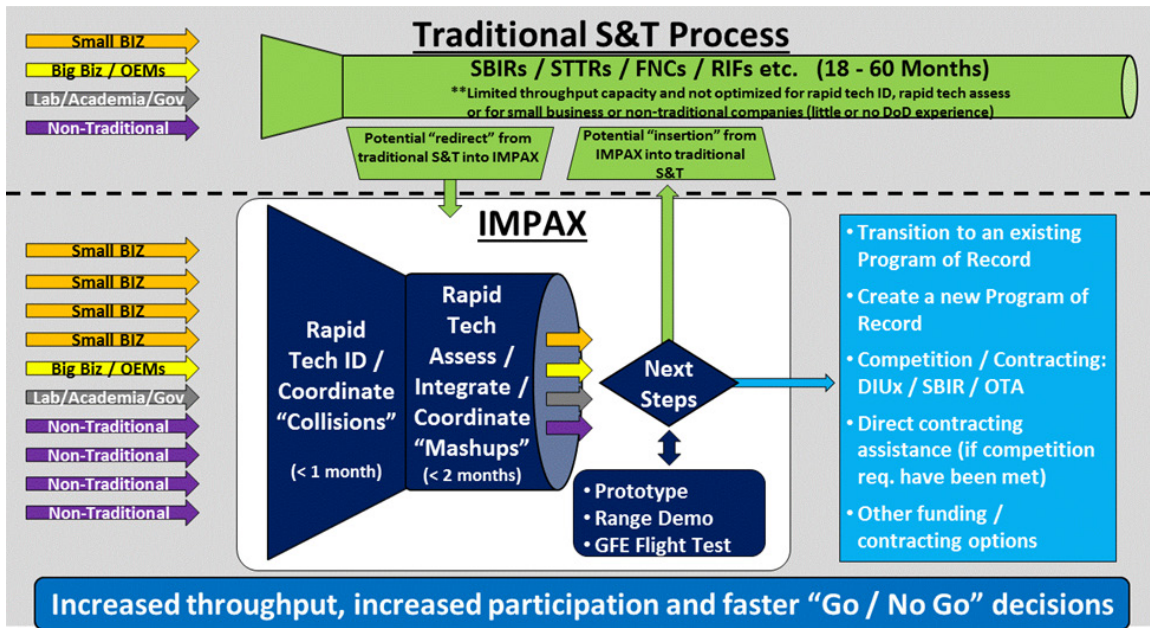
Source: IMPAX, brochure, personal communication, 2018.

Figure 3.   Notional PIA.

Figure 4 depicts the potential acceleration of technology by using the IMPAX model as opposed to the lengthy traditional science and technology process.

Source: IMPAX, brochure, personal communication, 2018.

Figure 4.　Role of IMPAX.

IMPAX participated in the Program Executive Office for Unmanned Aviation and Strike Weapons (PEOU&W) Industry Day held in California, MD, 17–19 April 2018. More information about IMPAX is available at https://www.impax.tech. Note: The technical information and functionality presented in this section was verified by the IMPAX point of contact.

F.　MARYLAND DEFENSE NETWORK

One member of our team participated in the briefing/demonstration of the Maryland Defense Network (MDN) to staff from PEO (U&W) in California, MD on February 15, 2018 and a follow-on briefing/demonstration to members of The Patuxent Partnership in Lexington Park, MD, on April 24, 2018. The information addressed in this section is based on information obtained during the two events as well as interaction with the MDN database in April 2018 available at https://marylanddefensenetwork.org accessed from a government workstation. Additionally, there is a beta site available at https://beta. marylanddefensenetwork.org/ where improvements in functionality for future deployment can be seen quickly among the development team.

In response to help to mitigate potential risks and problems and protect the economic livelihood of Maryland businesses in the event of a DoD budget cut, the DoD Office of Economic Adjustment (OEA) offered the Maryland Department of Commerce a Defense Industry Adjustment grant in 2015 to develop a database that would help diversify the defense industry within the state of Maryland. The projects "goals are to understand the depth of the DoD budget impacts on Maryland's industry sector and how they may affect regional economies, identify defense dependent businesses within the defense supply chain, and provide assistance in diversifying company portfolios in order to sustain in a competitive environment" (MDN website, 2018). Phase One was executed in conjunction with the Towson University's Regional Economic Studies Institute (RESI) (A. Buzzeo, personal communication, February 15, 2018). Additionally, a phase two grant is being executed with Maryland Department of Commerce and RESI with completion scheduled for October 2018 (A. Buzzeo, personal communication, February 15, 2018). At that time, the Maryland Department of Commerce will assume responsibility for the MDN (A. Buzzeo, personal communication, February 15, 2018).

The MDN is a database of defense reliance and supply chain networks of defense contractors. MDN is designed to provide information for and about prime and subcontractors, to help businesses conduct necessary MR, be aware of upcoming opportunities, and learn about companies with whom to partner. It is presented in the form of an interactive mapping tool that is available to the experts at the Maryland Department of Commerce, regional economic developers, and member companies. Users can create customized tables and charts that detail defense industry information in a specified region or across the state (G. Timberlake, personal communication, April 24, 2018).

1.   Functionality

It is important to note that the phase one capability of the MDN was developed in accordance with the scope of the OEA grant. Functional requirements were obtained by hosting user sessions across the state with industry, county economic development organizations, and state organizations. This collaboration allowed for an iterative development process. As described by Ashley Buzzeo, the MDN project manager, RESI,

at the event on 24 April "people don't know how to get involved until they see something, then the lightbulb goes on" (A. Buzzeo, personal communication, April 24, 2018). Feedback has increased as more people are introduced to the MDN. Additionally, six primary data sources were selected to feed the database. The first data source is the System for Award Management (SAM), which is an official website of the U.S. government. One can use this "site for FREE to register to do business with the U.S. government, update or renew your entity registration, check status of an entity registration, and search for entity registration and exclusion records" (GSA, n.d.-b). The second data source is the Federal Procurement Data System-Next Generation (FPDS-NG), which also is an official website of the U.S. government. Data from "FPDS-NG can be used for geographical analysis, market analysis, and analysis of the impact of the congressional and presidential initiatives in socio - economic areas such as small business. The data is also a reliable basis for measuring and assessing the impact of federal acquisition policy and management improvement" (FPDS-NG, n.d.).

The third data source is the Federal Business Opportunities (FBO), which is also an official website of the U.S. government. The FBO web-based portal is the port of entry for federal procurements and "the system is a web-based portal which allows vendors to review Federal Business Opportunities" (FBOVendor Guide 1.7, 2013). Generally, industry will not respond to an acquisition posted on FBO unless they have prior knowledge of the requirement. The fourth data source is the United States Small Business Administration (SBA) Dynamic Small Business Search (DSBS), which is also an official website of the U.S. government. This is generally a self-certifying database for companies seeking to do business with the federal government. As highlighted on the SBA DSBS website homepage at http://web.sba.gov/pronet/search/dsp_dsbs.cfm, "The SBA does not make any representation as to the accuracy of any of the data included, other than certifications relating to 8(a) Business Development, Historically Underutilized Business Zone (HUBZone) or Small Disadvantaged Business status" (Small Business Administration Dynamic Small Business Search, n.d.). The fifth data source is the Federal Subaward Reporting System (FSRS), which is also an official website of the U.S.

government. This website meets the intent of the Federal Funding Accountability and Transparency Act (FFATA) which is:

> to empower every American with the ability to hold the government accountable for each spending decision. The end result is to reduce wasteful spending in the government. The FFATA legislation requires information on federal awards (federal financial assistance and expenditures) be made available to the public via a single, searchable website, which is www.USASpending.gov. The FFATA Subaward Reporting System will collect data from Federal prime contractors on subcontracts they award and populate USASpending.gov. (Defense Pricing and Contracting, 2018)

The sixth and final data source is self-reporting. Users of the tool have the ability to add a company to the network if they do not exist (ex: have not done federal contracting in the past) or update information in the network for a company, such as address, contact information, annual revenue, and number of employees.

a.   *Phase One*

Phase one of the MDN that commenced in 2015 provides a historical look at the data being pulled from the above data sources and the main data feed is usaspending.gov. Some of the current capabilities are the workflow of the defense dollars and supply chain mapping which depicts subcontracting, the vendor lookup provides the ability to search on a company or organization and view a profile page, explore data custom dashboards with filters, maps, charts and tables, and various custom reports such as the Vendors near Federal Installations report.

b.   *Phase Two*

Phase two includes additional functionality and will move the MDN to a more "forward-looking" database that will list active opportunities. However, as mentioned earlier in this section unless a company is aware of the requirement prior to the FBO posting, they generally will not respond. Phase two expands the existing Maryland Defense Network from a primarily data resource into a networking, training, and opportunity hub for defense contractors. The expanded tool will have many components that have been requested by industry users participating in the Phase one user groups, including, but not limited to: FBO integration, a collaboration forum for Business to Business opportunities,

additional reporting mechanisms, data and vendor lookup enhancements, the inclusion of Maryland manufacturers outside of the DoD supply chain for partnering opportunities, and a Roadmap to Diversification portal with training guides and resources on how defense-dependent companies can diversify their business. The phase two launch is planned for June 2018. All the above information was presented at the 24 April MDN briefing to TPP. (A. Buzzeo, personal communication, April 24, 2018)

2. Assessment

Although the MDN provides much useful information in various helpful formats, the existing functionality is still limited in scope because the tool had to be developed in accordance with the OEA grant and the data sources are generally historical in nature. For example, the usaspending.gov website lists dollars obligated not planned obligations. Additionally, there is no plan to upgrade the MDN once phase two is complete so it will lag behind databases that are periodically updated. One option under consideration is MDN finding a DoD sponsor to provide additional funding to allow for expansion in scope and capability. For example, if NAVAIR provided funding to increase the MDN to support NAVAIR business across all NAVAIR sites around the country, the tool could essentially expand to cover all NAVAIR suppliers that potentially could make MDN a national database. Finally, just generating general awareness of the MDN has proven difficult. One data point highlighting the continued need to advertise the MDN and capability to potential users is the attendance at the TPP demonstration on 24 April. From the TPP 2017 Annual Report, "The Patuxent Partnership connects the dots to foster collaboration among academia, industry, and government from technology to STEM initiatives in Southern Maryland and beyond to promote growth for the betterment of all" (The Patuxent Partnership, 2017). Based on a discussion with TPP staff after the event, it was determined that TPP has over 4000 contacts for events hosted by TPP (J Brown, personal communication, April 24, 2018). However, only 22 people registered for the event and of those only nine people actually attended the event (J Brown, personal communication, April 24, 2018). This was a follow-up demonstration from a year ago when phase one was shared with the membership. It is also interesting to note that the Maryland Procurement Technical Assistance Center (PTAC) located at the University of Maryland is not part of

the core MDN team, nor was our team able to confirm that the PTAC had even been consulted as part of the MDN development process. Overall, it is evident that a lot of hard work and collaboration across the state has gone on while RESI has been executing the OEA grants and that the MDN provides users with actionable information to help make defense-related business decisions.

3. Recommendations

- Maryland Department of Commerce find a DoD sponsor that will provide funding for increased capability of MDN, to include accessing agency forecasts and increasing the supplier data base

- Maryland Department of Commerce establish a communications plan to further advertise MDN to industry, academia and the federal government

- Maryland Department of Commerce investigate other web-tools with similar functionality to determine best in breed

Note: The technical information and functionality presented in this section was verified by the MDN Project Manager of RESI. However, the assessment and recommendations are solely the product of our thesis team.

G. CATEGORY MANAGEMENT

According to the General Services Administration (GSA) website "Category Management is an approach the Federal Government is applying to buy smarter and more like a single enterprise. Category Management enables the government to eliminate redundancies, increase efficiency, and deliver more value and savings from the government's acquisition programs" (GSA, n.d.-a).

Category management is a broader concept that encompasses strategic sourcing as one of its execution options. Category management is about optimizing all of the acquisition vehicles, processes and knowledge available to best address agencies needs and generate savings. The Federal Strategic Sourcing Initiatives (FSSI) is just one strategy (not mandatory) that can be utilized. The FFSI has a mandate to increase the number of small

business contracts and, in some instances, small businesses make up the majority of spend in certain categories.

Other strategies include demand management, supplier engagement, and development of shared services (K. Coleman, personal communication April 17, 2018). The category management process involves four core principles: identifying core areas of spend; collectively developing heightened levels of expertise; leveraging shared best practices; and providing acquisition, supply and demand management solutions (GSA, n.d.-a). The same information about category management is available on the DPAP website at https://www.acq.osd.mil/dpap/ss/index.html. The Office of Federal Procurement Policy (OFPP) intends to use this process to reduce contract duplication (DPAP, n.d.)

In a Federal News Radio report cited in a Virtual Acquisition Office article on 3 May 2018, the OFPP strategy was described in the following: "After trying to reduce contract duplication for the past decade, OFPP says the solution lies in category management and its subcategory best-in-class (BIC) contracts" (VAO, 2018d). The article goes on to detail how OFPP is working on a strategic plan to reduce the number of contracts in each of 10 categories (VAO, 2018d). The 10 government-wide categories as listed on the DPAP website include "information technology; professional services; security and protection; facilities and construction; industrial procedures and services; office management; transportation and logistics services; travel and lodging; human capital; and medical" (DPAP, n.d.). There is concern among the small business community that category management may have a detrimental impact on small businesses as a whole. This sentiment was articulated in an email from, James Galvin, Director, DoD OSBP to the Under Secretary of Defense for Acquisition, Technology and Logistics of 29 November 2017. Galvin states:

> New initiatives around Category Management and online procurement, such as FedMall, may provide excellent access to those firms capable of operating in those domains, but may substantially limit the potential size of the industrial base. Consolidation of contract vehicles and requirements eliminates breakout opportunities for small business. DoD must ensure appropriate provisions are included within acquisition strategies for contract

vehicles to ensure fair opportunities for small business. (J. Galvin, personal communication, November 29, 2017)

Additionally, several witnesses recently testified before the House Committee on Small Business and addressed negative consequences of category management on small businesses. These consequences addressed by Alan Chvotkin (Executive Vice President at the Professional Services Council) include limiting an agency's ability to contract to meet mission needs by limiting acquisitions to certain vehicles; placing too much emphasis on lowest-price technically acceptable evaluations which have greater impact on small business providers of knowledge-based or professional services; and emphasizing favorable terms and conditions rather than past performance of potential vendors. (VAO, 2018a). This significant issue is beyond the scope of this thesis and warrants further investigation by a future joint applied project.

As part of the government-wide shift to category management, GSA is developing customer facing tableau storyboards for the Army, Navy and Air Force to better enable the acquisition workforce to understand their spending in the government-wide categories. The storyboards are available at https://d2d.gsa.gov/report/government-wide-category-management-oversight-performance-management-tools (K. Coleman, personal communication, April 17, 2018). The customer engagement storyboards contain all the data in FPDS. Category Management and their storyboards focus on the ten categories mentioned above. The products linked above and the GSA product work in tandem to assist customer agencies with managing their spending. In order to gain a better understanding of this process, a representative from the GSA Federal Acquisition Office and the GSA National Account Manager (NAM) were invited to brief the staff of the Director, Secretary of the Navy, OSBP at the Washington Navy Yard on 17 April 2018. One member of our team participated in that briefing/demonstration.

1.   **Assessment**

At the outset of the brief, the GSA NAM provided a two-page fact sheet that provided the following bottom line up front (BLUF) "The U.S. Navy Customer Facing Tableau Storyboard is a spend intelligence tool that provides a visual interactive of the

Navy's obligated dollars from the Federal Procurement Data System (FPDS) in order to gain a greater understanding of expiring contracts to plan and forecast future acquisition" (K. Coleman, personal communication, April 17, 2018). The overall development has been ongoing for approximately 18 months and the storyboards have been resident in the GSA Data to Decisions (D2D) portal for approximately six months (S. Carlson, personal communication, April 17, 2018). Each GSA customer has his or her own engagement dashboard in the D2D portal (S. Carlson, personal communication, April 17, 2018). The Navy Customer Engagement Storyboard that was demonstrated is located at https://d2d.gsa.gov/report/dod-storyboards (S. Carlson, personal communication, April 17, 2018). The data is pulled quarterly from FPDS-NG (S. Carlson, personal communication, April 17, 2018). An Office of Management and Budget (OMB) Max.gov account is required for access to the GSA storyboards (S. Carlson, personal communication, April 17, 2018). The small business performance is based on the SBA goal report protocols (S. Carlson, personal communication, April 17, 2018). The storyboard supports the OMB BIC initiative (S. Carlson, personal communication, April 17, 2018). All of the GSA support and training is provided free of charge to their federal government customers (S. Carlson, personal communication, April 17, 2018). Overall, this tool provides actionable data but the spend intelligence is obviously based on historical data that is most likely of interest to contracting officers and SBPs who are much more familiar with FPDS-NG. Although the storyboards were developed using customer input, when questioned about any interface with government program managers to gather their data requirements for MR and acquisition planning, it was confirmed that no such coordination had been conducted. Since MR is primarily the responsibility of the requirements owner, broadening the capability of the tool to provide information that would be of more relevance to program managers would potentially expand the user base. At the demonstration, our team member offered up the following capability suggestions for tool incorporation to assist program managers as they look to get on contract as quickly as possible; what contract vehicles are available and is there ceiling on those contract vehicles.

2.   Recommendations

- GSA needs to continue to advertise this capability with a rigorous communications strategy

- GSA should talk with government program managers to see what type of data they require to help with their MR

- Since all information in FPDS is already publically available, GSA should allow industry to access these storyboards to aid companies with their pursuit of business opportunities. This collation of information will certainly aid small businesses and help reduce barriers to entry.

- GSA should consider adding functionality that will provide a list of government contract vehicles available for use, potential ceiling and a point of contact

Note: The technical information and functionality presented in this section was verified by the GSA Federal Acquisition Office representative. However, the assessment and recommendations are solely the product of our thesis team.

H.   NAVAIR OFFICE OF SMALL BUSINESS PROGRAMS SMALL BUSINESS LIFE CYCLE

The Associate Director, NAVAIR OSBP is developing a Small Business Life Cycle that is intended to track the flow of each small business from initial contact through the NAVAIR acquisition process. Based on the original developmental timeline and planned deployment in December 2017, our team intended to conduct a mini-assessment as part of our project plan. However, the project has significantly increased in cost, scope and complexity and implementation continues to be delayed. Therefore, our team was unable to complete this task.

I.   GOVERNMENT–INDUSTRY–ACADEMIA CONSORTIUM

Another area investigated by our team was regional consortiums that are comprised of government, industry and academia. These consortiums facilitate the development of

technology and may be valuable sources of information as part of MR. Traditionally, these three enterprises are looked at as a triad or three-legged stool. However, a representative from the University of Massachusetts (Lowell), Katie Stebbins put forth a new concept while speaking on the State Collaboration: What's Our Business Model panel at the DoD SBIR/Small Business Technology Transitions (STTR) Primes Summit in Crystal City, VA on 12 April 2018 that we should really be looking at a four-legged chair comprised of both federal and state government agencies, as well as industry and academia (K. Stebbins, class notes, April 12, 2018). Notwithstanding the different procurement regulations for federal and state agencies, our team feels these innovation clusters are the way of the future and will definitely be valuable resources to federal program managers conducting MR. This paper introduces a couple of examples that were briefed at the same DoD SBIR/STTR Primes Summit on 12 April 2018. Additionally, Emily Harman, Director Secretary of the Navy (SECNAV) OSBP recently attended Congresswoman Marcy Kaptur's 2018 One Ohio Series Defense Summit. As reported in her DoN OSBP Situation Summary (SITSUM) of 4 Jun 2018, "the purpose of the event was to educate the attendees on Ohio's innovation eco-systems that can provide unique advantages to the DoD and industry in supporting the development of critical emerging technologies and providing research into new solutions across a broad spectrum of needs" (E. Harman, personal communication, June 4, 2018). Harman's attendance at the event and then her reporting the event to Navy leadership highlights the growing importance of networking within these consortiums and ecosystems as part of the MR process.

1. The Florida High Tech Corridor

The following information is taken directly from the Florida High Tech Corridor website "Florida's High Tech Corridor spans 23 counties across the state, connected by three research universities, more than 20 local and regional economic development organizations, 14 community and state colleges, 12 regional workforce boards, countless industry groups and the thousands of innovative companies that call this region home" (The Florida High Tech Corridor, n.d.). The corridor targets 10 high tech sectors for growth. The corridor is comprised of University Partners, Community, State and Other Colleges, Economic Development Organizations, Venture Capital Organizations, CareerSource

Boards, Technology Incubators, and Statewide & Regional Support Organizations. This corridor is a resource that could be accessed by DoD as part of their MR and communicating with industry processes.

2.   Economic Growth Institute - University of Michigan

The following information is taken directly from the Economic Growth Institute (EGI) – University of Michigan (UM) website:

> The institute leverages the University of Michigan's resources, research, technologies, and expertise to foster innovation and create positive economic impact for local, state, national and global communities and economies by working with small- and medium-sized enterprises. The institute has helped create or preserve 52,883 jobs.

- Maintains a database of more than 1,200 experts/service providers;

- Works with more than 100 universities around the country (UM EGI, n.d.)

The EGI is a resource that could be accessed by DoD as part of their MR and communicating with industry processes.

3.   Office of Entrepreneurship & Economic Development - University of Massachusetts Lowell

The following information is taken directly from the – University of Massachusetts Lowell website "The UMass Lowell Office of Innovation and Workforce Development offers start up labs and space, idea competitions and resources that help inventors bring ideas to market" (UMASS Lowell Office of Innovation and Workforce Development, n.d.). The Office of Entrepreneurship & Economic Development is a resource that could be accessed by DoD as part of their MR and communicating with industry processes.

J.   PRIVATE COMPANY ANALYTICS

There is a growing market of private companies that provide analytic tools and services to assist with scouting for technology. Some examples identified by our team include:

1.   The Innovation Scout

The Innovation Scout is a public-facing commercial software program that can be used to search for innovative technologies. The following information is taken directly from The Innovation Scout website "The Innovation Scout is a Software as a Service (SaaS) platform that helps corporations to discover, engage and run pilots with startups and open research. What is special about our platform is the use of artificial intelligence (AI) to match relevant startups with corporate business challenges" (The Innovation Scout, n.d.). This tool was mentioned as one of the MR tools used by the representative from General Dynamics Electric Boat while she was on the Naval Sustainment Panel: Primes/Platforms/SBIR at the DoD SBIR/STTR Primes Summit on 12 April 2018 ((P. Hicks, personal communication, April 12, 2018). Any individual can request an account for access to the tool (P. Hicks, personal communication, April 23, 2018).

2.   Ratio Exchange

Ratio is a private sector exchange that provides streamlined MR services with a registry of over 680,000 companies authorized to do business with the federal government. The exchange pulls data from FPDS, GSA, USAspending.gov, FBO, SAM, SBIR.gov and various DoD websites. According to their Innovation Challenge handout, the exchange focuses on their ecosystem across the United States and in London, UK of innovative companies, government/university labs, think tanks, incubators, accelerator and entrepreneurs to discover new and emerging products, platforms and technologies (Ratio, personal communication, June 27, 2018). The exchange was introduced at the industry day hosted by the Fredericksburg Regional Chamber of Commerce in Fredericksburg, VA on 27 June 2018. One member of our team participated in the event.

3.   Repperio Incorporated

Based on information available from Bloomberg, Repperio "provides a federal contracting analytics platform and consulting service" (Bloomberg, n.d.). The data provided includes predicted competition, prior similar contracts, information on awardees and past offerors, past performance information, and other information that can be used for determining competitors and teaming considerations.

This company was identified by the DoD OSBP during the MRCOE demonstration to DPAP on 6 February 2018 (T. Bujewski, personal communication, February 6, 2018). The company website is available at https://www.repper.io/ and it provides federal contracting competitive analytics as a fee for service. However, access is sometimes blocked on the Navy/Marine Corps Intranet (NMCI) by the Naval Network Warfare Command (NETWARCOM). The following warning is provided to the NMCI user when access to a website is denied "Access Denied by NETWARCOM Policy. Site_Uncategorized." There are procedures available to request website categorization posted on the website, but each request would need to be handled separately. The processing time in unknown and would place a burden on the individual performing MR. Additionally, since all Internet usage is monitored and logged by NETWARCOM, these alerts become part of the user's record.

Another example is the website for the Fredericksburg Regional Chamber of Commerce (www.fxbgchamber.org). Our team representative from NAVAIR attended a Government Contracting (GOVCON) event the chamber hosted on 27 June called GOVCON Expo. However, he was unable t access the chamber's website for information about the event for planning purposes. This is a frustrating problem, since many MR searches on the Internet are blocked by NMCI and government personnel are being prevented from accessing needed information from the private sector due to NMCI policies.

These private company analytic tools could be accessed by DoD as part of their MR and communicating with industry processes. However, further analysis needs to be conducted to determine the real impact on MR by a restrictive NETWARCOM policy.

K.   SUMMARY OF ANALYSIS OF MARKET RESEARCH TOOLS

Our team analyzed the various MR tools and came up with three general findings and one specific finding. The first finding is that the websites are being developed without adequate interaction with program managers. Since program managers are primarily responsible to conduct MR to find potential solutions to their requirements, it makes sense to ascertain their requirements in order to broaden the usefulness of the tool. The second

finding is that the websites provide partial solutions, at best, to users so knowledge of multiple tools will remain critical to the conduct of effective MR. The third finding is that the developers of the various tools are not concurrently developing communications strategies to promote the awareness and use of the tools. Just as communicating with industry is important, communicating the availability and usefulness of MR tools with the acquisition workforce is important. Our specific finding is what our team has labeled the MR "Valley of Death." The concept comes from the renowned SBIR "Valley of Death" in which companies have trouble transitioning from phase II to phase III. The DoD OSBP SBIR/STTR website describes the situation as follows

> The SBIR program supports the funding stream through Phase II. However, at the completion of this phase, the small business must identify non-SBIR funding for technology maturity and validation efforts. At this transition point, often called the "Valley of Death," failure to incorporate SBIR into overall program planning can make it difficult to identify funding in a manner that supports timely insertion of the SBIR technology. (Department of Defense OSBP SBIR/STTR, n.d.)

Our concept is that MR processes and existing rear-ward looking databases are slow and cumbersome and are not keeping pace with technological innovation in the private sector. Adequate MR, especially for science and technology, needs to be conducted using databases that are interactive, can scout for technology and have near real-time information for review and analysis. Otherwise, the acquisition personnel performing the MR are at risk of always being behind hence in the MR "Valley of Death."

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V. COMMAND STAFFED MARKET RESEARCH CENTER OF EXCELLENCE

As we can see from the information previously provided, there are numerous MR tools available to the acquisition workforce. The research conducted, via questionnaires answered by differing level employees across the Army and Navy, illustrated the fact that the acquisition workforce is unaware of all the MR tools available to them. Because of this, we believe a MaRCOE could provide for improvement to MR being conducted and recommend staffing a Command Level pilot MaRCOE. The MaRCOE will provide numerous benefits to the acquisition workforce. Not only will the MaRCOE educate the workforce on the MR tools available, it will train the workforce on utilization of the tools. Because it will take time to both educate and train, the MaRCOE representatives will actually perform MR on procurements greater than $1M (total contract value), through utilization of the tools available, until the acquisition workforce can successfully perform MR on their own. Due to attrition and other factors, the acquisition workforce is constantly changing, and new members of the workforce will need to be educated and trained. For this reason, we believe the MaRCOE concept can be a permanent value added contributor to successful MR, with a high return on investment to the commands that stand up a MaRCOE.

There are numerous centers of excellence throughout the Department of Defense, the Federal Government, and the private sector. After researching numerous different centers of excellence, we discovered that the term "center of excellence" can be used in a variety of ways, for numerous differing purposes. In an attempt to narrow down our review of current organizations claiming to be centers of excellence, we focused in on the Army Acquisition Center of Excellence (AACOE) at University of Alabama-Huntsville, the Source Selection Support Center of Excellence (S3COE) at Army Contracting Command-Warren, and the Aviation Centers of Excellence Training Centers in Africa. These three centers all serve a different purpose, have differing missions, and are structured in different manners. With that being said, all three of them provide a benefit to those who utilize the services offered, and the objective of creating a center of excellence "in any sector is always

customer centric" (Subramany, 2011, p. 4). "The center is meant for providing unique solutions to all customers" (Subramany, 2011, p. 4).

According to a U.S. Army Acquisition Support Center article, the AACOE supports the Army Chief of Staff's objective to transform the Army. This will be accomplished "by providing an ideal training and learning environment to build and transform the Acquisition Logistics & Technology (AL&T) Workforce, on whom Soldiers depend to provide a decisive advantage in any mission by developing, acquiring, fielding, and sustaining the world's best equipment and services and leveraging technologies and capabilities to meet current and future Army needs" (Army Acquisition Center of Excellence, 2011).

The planning associated with the creation of the AACOE took more than a year. This particular center of excellence is important to the Army, because "it will save taxpayers' money while also providing better education and career development opportunities to the AL&T workforce" (Army Acquisition Center of Excellence, 2011). Furthermore, the workforce that goes through the training provided by the AACoE "will be better equipped to bring Soldiers the warfighting capabilities they need, when they need them" (Army Acquisition Center of Excellence, 2011). This particular center also provides opportunities for Soldiers and Army Civilians that participate in the AACOE allowing them to have the opportunity to interact with senior leaders throughout the acquisition community. By combining coursework with interaction from senior leaders throughout the AL&T community, acquisition workforce members that utilize the AACoE are better positioned to serve their customer, by getting the right product or service down range, at the right time, and at the right cost.

The S3COE at Army Contracting Command-Warren provides training, guidance, and assistance to all acquisition professionals at Army Contracting Command-Warren that procure goods or services through the use of best value source selection procedures. Much like the need for improvement in the area of MR, Army Contracting Command – Warren identified a need for improvement during performance of best value source selections, so the S3COE was created. In June 2015, after years of planning, dedicated space was provided in Building 231 on the Warren, MI campus for the S3COE. A ribbon cutting ceremony took place and the S3COE had a dedicated place to plan, train, and host the

acquisition workforce participating in sequestered source selection evaluation boards (Liedke, 2015).

As explained by Kristan Myers, executive director at Army contracting Command – Warren, "the S3CoE's roots can be traced back to 1994 when the system acquisition assistance team was established at the direction of the Henry B. Jones, then director of the TACOM Acquisition Center" (Liedke, 2015).

Through hard work, dedication, and focus on each and every customer that came to the S3COE for assistance, the S3COE has solidified a major presence at Army Contracting Command – Warren. The scope of the S3COE evolved and the number of personnel working with the S3COE increased drastically from the days of the System Acquisition Assistance Team (1994) until now. The representatives that work within the S3COE are now required to attend both Solicitation and Award Peer Reviews as board members, the S3COE was directed to hire a dedicated Subject Matter Expert (SME) to serve as the Lead Cost/Price Analyst, and they also participate in numerous weekly Integrated Process Teams (IPT). Since the creation of the S3COE, both the number of protests received and the number of protests sustained has decreased dramatically. This is attributable to the increased level of education received by both contracting personnel and the customers they support

"The Aviation Training Centers of Excellence was initiated in response to the need for harmonization of training requirements and rationalization of training capacities in Africa" (Subramany, 2011, p. 4). It was "designed to harness pockets of excellence on the continent and spread this expertise throughout Africa with the explicit agenda of improving aviation safety" (Subramany, 2011, p. 4).

As explained in the document entitled "Criteria and Procedures for the Designation of Aviation Training Centers of Excellence," the term "Center of Excellence applies to any organization that wants to create and use excellent state of art procedures and showcase its technological, service, and business oriented capabilities in a competitive environment" (Subramany, 2011, p. 4). The article goes on to state that "A CoE is an organization, focused on optimizing application or service characteristics such as quality, performance,

or availability. It provides management an automation platform for processes, consulting, support services, leadership, as well as advocacy to optimize these attributes" (Subramany, 2011, p. 4).

In order to explain all the MaRCOE has to offer, we will describe the key points of engagement, services offered, and optimum construct of a command staffed MaRCOE organization. Our model will closely mirror the S3COE at Army Contracting Command - Warren; however, the MaRCOE will be involved with procurements from requirement identification through contract closeout, whereas the S3COE is only involved from solicitation through expiration of the protest period following contract award. Due to the fact that MR is required for all procurements, we envision the staff of the MaRCOE to be involved in many more actions than the aforementioned S3COE. It is important to right size the MaRCOE from inception, because if acquisition professionals are unable to get the attention they need, then they will continue to struggle with adequately performing MR.

The key points of engagement for the MaRCOE are:

- Requirement Identification

- Pre-Solicitation

- During Performance

At the time a requirement is identified, the MaRCOE will work closely with personnel in both the Acquisition and Contracting communities, in order to assess the market conditions of their particular item or service. Prior to release of a solicitation, the MaRCOE will assist in development and facilitation of RFI, Market Surveys, White Paper requests, and any other information that industry has, which could provide for a better understanding of the market surrounding a requirement. Since MR yields its best results when it is continually performed, the MaRCOE will remain involved during contract performance. Consistently and constantly performing research throughout performance of an effort will provide a better understanding of subcontracting opportunities, new suppliers in the marketplace, and market conditions that have either positive or negative effects of performance on a given effort.

Relationship development and trust are two actions that will be required, for both the MaRCOE to be successful, and acquisition professionals to become more proficient in MR. Those employed by the MaRCOE need to understand that they are support staff to the customers they serve. While not directly involved in the development of Performance Work Statements (PWS), Scopes of Work (SOW), or Statements of Objectives (SOO), the MaRCOE staff will need to understand the requirements being procured, so they can assist in the development of questions to be asked of industry, craft the content for white paper requests, and perform market surveys, as they work with their customers to better understand the market for the product or service being procured.

The customers of the MaRCOE will be from both contracting and requirements offices (technical and program personnel), so the MaRCOE staff will need to understand the full acquisition life cycle. As stated earlier, the MaRCOE will assist customers procuring both services and hardware, which means they also have to understand the laws and regulations associated with the differing types of procurements. In summation, representatives of the MaRCOE need to know their job, as well as their customers, in order to provide the best customer service possible.

Representatives from the MaRCOE will serve as advisors for all weapon systems programs, automated information systems programs, and service acquisitions. Because of this, it is important to staff the MaRCOE with personnel that have experience in these areas. As positions for the MaRCOE are solicited, the hiring panel will be required to carefully analyze the job history of the applicants, as well as each individual's personality traits, because technical capability, experience, and excellent people skills will be required in order to successfully develop relationships and train the personnel involved in the MR process. The desired employees of the MaRCOE will have great breadth and depth in federal procurement, as well as excellent communication skills (both oral and written). It is recommended that the MaRCOE Division Chief is identified first and serves as the Selecting Official for all hiring actions.

Since Army Contracting Command – Warren and the acquisition professionals that are employed there are already familiar with a S3COE, we recommend that a pilot MaRCOE be deployed at this location. As the workforce becomes educated and trained,

less time will be utilized struggling through MR, and more time will be utilized executing and managing contracts. We also project that the vendor base will increase in size, creating more effective competition, which will reduce the price of both products and services paid for by the customers that the acquisition workforce supports. It is recommended that an assessment is conducted 24 months after deployment of the MaRCOE. The assessment will evaluate the effectiveness of the MaRCOE through metrics (price paid for products and services, size of vendor pools, quantity of offerors participating in solicitations, and number of people trained in MR) and customer satisfaction surveys. The MaRCOE can be easily tailored, in both size and scope, to fit the needs of its customer. For the pilot at Army Contracting Command – Warren, our JAP team recommends the structure identified below.
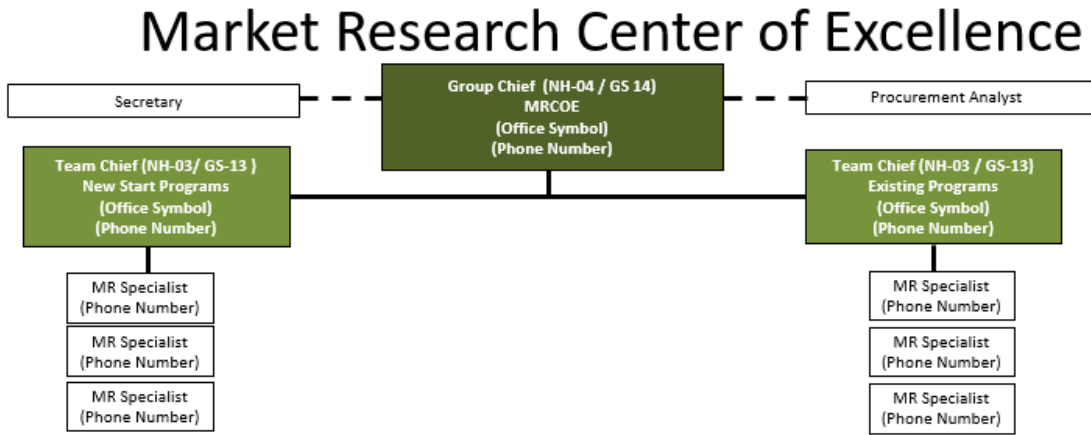

Figure 5.   Proposed Market Research Center of Excellence Structure

VI.   CONCLUSION AND RECOMMENDATIONS

This project started with the problem statement that there is needed improvement by DoD in the MR process, and specifically communicating with industry. Our team began by analyzing existing MR literature and MR training. Next, our team examined web-based MR tools either in use or under development by DoD, federal or state agencies. Our team also solicited feedback from acquisition personnel through a questionnaire, which helped validate our problem statement. Finally, our team recommended how to establish a MaRCOE. Since communication with industry and MR are important elements of the acquisition planning process, a more disciplined and collaborative MR process will help program managers develop strategies that enhance competition, promote affordability, access innovative technology and help preserve the defense industrial base of traditional and non-traditional partners. Although BBP has increased the focus on MR, there is significant room for improvement particularly with the training of the acquisition workforce and the use of next-generation web-enabled tools. Additionally, the concept of a staffed MaRCOE at a buying command warrants further exploration. These improvements will be critical to keeping ahead of our adversaries as well as maintaining affordability in DoD programs as the department executes the 2018 NMS.

Based on our analysis, the following recommendations are provided:

1.   Improve and increase MR training:

(a)   Standardize training for MR across the DoD acquisition workforce

(b)   DAU develop an updated comprehensive on-line MR training course

(c)   DAU encourage more industry participation to allow for more collaboration with acquisition professionals

(d)   Director, Acquisition Career Management should make this MR training mandatory for all acquisition professionals within the DoD

2.   The Defense Standardization Program update the SD-5

3.　　　DoD MRCOE

(a)　　　Embed the capability to access web-based MR tools within the DoD MRCOE, so the tool can function as a clearing house

(b)　　　Conduct further study with program managers of the utility of the DoD MRCOE

4.　　　VULCAN:

(a)　　　Continue to advertise the capability of VULCAN across the DoD research enterprise

(b)　　　ASNRDA develop DoN specific-requirements and establish a DoN corridor on VULCAN

(c)　　　ASNRDA require VULCAN to be used as the DoN research and engineering enterprise technical scouting tool

(d)　　　AIR-1.0, as the NAVAIR MR process owner, coordinate a pilot of VULCAN at NAVAIR

5.　　　Conduct a pilot of a MaRCOE at Army Contracting Command – Warren

6.　　　Since a review of any potential impacts on small business by Category Management was beyond the scope of this paper, recommend that a future NPS JAP study this issue

7.　　　AIR-1.0, as the NAVAIR MR process owner coordinate with NETWARCOM to review the Navy's web content filtering software impact on MR

APPENDIX: SURVEY QUESTIONNAIRE

October 2017
Subj: MARKET RESEARCH CENTER OF EXCELLENCE INTERVIEW QUESTIONS

Name: _____ (Optional)
Grade: _____ (ex. GS13)
Job Title/Series: _____ (ex. Contract
Specialist/1102)
Service: _____ (Navy/Army)
Email address: _____ (Optional)

What is your current acquisition position?

What Market Research knowledge, skills, and abilities are necessary to perform your job?

Are there current market research training opportunities available for DoD acquisition professionals? What are they?

In what ways has the requirement for market research expertise for DoD acquisition professionals changed over the last few years?

How do acquisition professionals distinguish between market research for services and market research for hardware.

Describe any known areas for market research improvement. What are the intended goals of these efforts?

Describe any known market research training and/or policy gaps.

Describe any commonly accepted best practices in market research.

Has the acquisition community expressed a need for a MaRCOE? If so, what are the anticipated benefits?

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