INSOURCING AND OUTSOURCING FOR U.S. DEPARTMENT OF DEFENSE IT PROJECTS:
A MODEL

KARLA MARQUIS[1,]
Industry Fellow

CSC

kmarquis@csc.com

ABSTRACT

A vigorous public debate is occurring over the definition of "inherently governmental" and whether it is more effective and efficient for the U.S. Department of Defense (DoD) to outsource IT efforts to contracting organizations or insource work into the DoD civilian workforce, i.e., perform these efforts in-house.

Questions often arise over how the DoD can best provide an environment that fosters innovation and maintain a healthy Defense Industrial Base (DIB), ensuring force readiness and a competitive U.S. position in the global marketplace, from both a military/defense standpoint as well as an economic one. Too often today, the DoD is insourcing work without enough forethought and planning, and as an unintended consequence, the U.S. could suffer from poorer global economic positioning or reduced force readiness.

This paper provides an introduction to the insourcing and outsourcing dilemma in today's fiscally challenged environment. It discusses past mistakes and lessons learned, the history of contracting within DoD, best practices for outsourcing and the misconceptions in cost comparisons between insourcing and outsourcing. It then presents a model for determining when to insource and when to outsource based on the type of technology being implemented, its maturity and the stage in the development life cycle that the effort covers. This model can be used by DoD to assist in deciding which roles are most effectively outsourced over the life cycle of an IT program and which roles are better kept in-house. Using this model can potentially lead to improved decision making helping the government identify where to allocate their constrained budget to return the best value for both U.S. taxpayers and soldiers.

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1 Business Transformation Agency Research Fellowship. MR. TOM HAUSER, RESEARCH ADVISOR, The Industrial College of the Armed Forces, National Defense University, Fort McNair, Washington, D.C. 20319-5062

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"Only those functions that must be performed by the Defense Department should be kept by the Defense Department"
- An internal Defense Department study concluded shortly after 11 Sept., 2001. [1]

"A final recommendation that will have a significant impact on how defense organizations are staffed and operated... we will reduce the number of support service contractors from our current 39 percent of the workforce to the pre-2001 level of 26 percent and replace them with full-time government employees. Our goal is to hire as many as 13,000 new civil servants in FY10 to replace contractors and up to 30,000 new civil servants in place of contractors over the next five years."
- Secretary of Defense Robert M. Gates, 6 April, 2009. [2]

INTRODUCTION

The Defense Integrated Military Human Resource System ("DIMHRS") program was an Information Technology ("IT") program designed to dramatically transform the way the Department of Defense ("DoD") does business within the Human Resources community. The seed for this significant transformation was planted in the late 1990s when DoD leadership determined that there was an immediate requirement for a new system to integrate the numerous diverse personnel and pay systems across the DoD. DIMHRS would also allow the DoD to retire outdated legacy systems, thus avoiding the substantial and increasing costs of maintenance. The Joint Requirements and Integration Office began assembling requirements for the system in 2004 and systems design and development began in 2006. The program had a clear and important goal of supporting our military personnel with an enterprise-wide personnel and pay system. However, the program did not end well for a variety of reasons.

Approximately a half billion dollars was spent on the DIMHRS effort by the time Secretary of Defense Robert Gates and Admiral Mike Mullen, Chairman of the Joint Chiefs of Staff, cancelled the program for failure to deliver to expectations. Probably the most significant of the reasons behind the program's failure were a lack of strong senior leadership support and a failure of decision-makers to act in a timely and effective manner. The development phase was rushed, requirements constantly changed, and leadership failed to engage fully with functional process owners to ensure they captured desired requirements.[3] The DoD learned many lessons from this situation. One of the most valuable of these lessons learned is that the success of large IT efforts is largely dependent upon having strong leadership and the right people to work the effort.

During the Clinton Administration and in the aftermath of the September 11, 2001 terrorist attacks on the United States, the federal government identified that too much of the Department of Defense ("DoD") workforce was performing non–core tasks. The government then directed a significant change. Resources were allocated to outsource significant parts of the DoD's non-core activities. As such, the DoD began its increase in IT outsourcing. In 2009; however, the Obama Administration and Secretary of Defense Robert Gates directed a fundamental shift in the government's workforce policy. The rules of the game have been changed, leaving us to question whether the current administration has yet again altered the definition of inherently governmental.

The DoD is currently charged with hiring a larger workforce by insourcing from the current working contractor base. This is creating confusion in both the government and contractor workforce. Current DOD leadership appears to be retreating from, rather than continuing to reach to the Defense Industrial Base ("DIB") for its IT needs. This not only takes time away from performing inherently governmental work but also detracts from the country's ability to project significant power as well as be innovative and nimble in responding to events.

The newly-imposed practice of insourcing has also disrupted private industry, resulting in many delayed contract awards and less business. In some cases, this has resulted in serious readiness issues for the nation. Our strong economy was built upon a free market system with less government intervention and more competition in industry,[4] but the recent changes seem to be altering the status quo and have the potential to irreparably harm our nation's Defense Industrial Base ("DIB") that relies on a continued symbiotic relationship with the government.[5] Has this change in the rules of operations pushed the U.S. into becoming a late-adopter on the technology adoption curve,

and how will this negatively impact our national security and military readiness? Being a late adopter could suggest that the terms "adequate" and "maintenance" are more important than being a technological power in the world.

A number of high ranked individuals have questioned DoD's current commitment to acquiring IT. One such person is General James Cartwright, Vice Chairman, Joint Chiefs of Staff, who often criticizes the Pentagon's lack of speed in acquiring information technology through statements like, "the U.S. isn't keeping up with the fights we're in by keeping pace with changing enemy tactics and technology."[6] If the U.S. cannot keep pace with technological advancements, how can it adequately defend our nation's security? This important issue requires more scrutiny, particularly with regards to the impact of insourced workforce in the Cyber domain.[7]

The issue of contractor numbers and capabilities has vexed the DoD for a number of years. Despite genuine attempts by many to create a clear objective for contractor use, there does not seem to be a more tangible solution today than in the past. Additional questions relevant to this discussion include what the appropriate and maximum number of contractors should be, and where and when they should be used. In part, this confusion has been caused by conflicting opinions and directions from the U.S. political establishment, including Congress, who seem to have specific agendas and no clear cut view of the longer-term repercussions. A case in point is that the current administration appears to be in the process of reversing staff decisions implemented by the previous two secretaries of defense. The DoD had previously undertaken a program of significant outsourcing in order to increase agility and efficiency; now it appears to be reversing this trend through insourcing what were traditionally viewed as non-core activities. IT is one of these. The current administration's policy of arbitrarily assigning a percentage for organic DoD employees of the total workforce could be disastrous. To ensure that disaster does not occur, it is imperative that this plan of hiring practices and its potential ramifications are fully considered prior to proceeding. This is especially true when leadership directions to insource are vague. This should include assessing whether an increase in government headcount leads to a corresponding increase in productivity and actual reduction in costs. Further, in order to ensure that changed hiring practices have a positive outcome, it is important that government provide strong and sensible guidance to what is meant by inherently governmental. The thesis of this paper is that the DoD must provide for the proper balance of government and contractor skills in order to ensure success across its major IT programs. Currently, the DoD's staffing policies may be detrimental to the management and execution of these IT programs. A set decision process of when to insource and when to outsource must be quickly implemented.

To prove this thesis, this paper will review and evaluate the current changing balance of outsourcing and resurgence of insourcing key IT capabilities. It will do so by describing the best mode of staffing IT efforts given the current rule set and examining what are the right questions to ask before making appropriate IT decisions. These are important questions. The wrong answers can have a serious and lasting effect on the readiness of our forces in a world of increasing danger.

BACKGROUND

Technology has always played a part in the development of great powers throughout the ages. New and advanced technologies applied in the U.S. have made it the superpower that it now is. Technological advances like the steam engine, the atomic bomb, and the computer chip have enabled us to project ourselves as a global power as well as do much more, with fewer people.[8] Today, in an age of increasing terrorist threats and a globally competitive economy, it is imperative that the U.S. focus on its global technology leadership and national defense. Competition in the global economy requires continuous technological innovation, through which the U.S. has excelled in the past. The U.S. government must do all it can to bolster our global competitive standing, by fostering innovation.

There is currently an ongoing debate over whether the U.S. is losing its technological and innovative standing in the world and how this impacts not only our ability to compete globally but also our ability to protect U.S. interests. Without an emphasis on innovation, the U.S. could risk loss to its global competitive posture, which in turn could impact the ability of the U.S. to defend itself by hampering national security. Despite this possible trend, the current U.S. policy of insourcing for services work is perhaps contributing to the unintended effect of reducing the U.S. global

competitive standing and our economy at-large. Our GDP and economy are at decreased levels, and our national defense relies on continuous innovation in weapons to defend us from the changing enemies we face.

The practice of outsourcing has been defined by the Opus College of Business as "contracting out in-house functions that companies do not do particularly well to outside firms that do. The strategy behind outsourcing is one where the organization is to focus on its handful of core competencies, and then hire out the remaining business functions to contractors."[9] The government's practice of contracting out is not a new phenomenon. In fact, it was done regularly in the U.S. during the Revolutionary and Civil Wars. For the past two decades, because of rapid technological advances,[10] the U.S. government has been in the midst of an increased trend of outsourcing[11] and a trend of shrinking the size of government. These trends have also impacted private industry. Bill Gates, in his book, @ The Speed of Thought, notes that, "an important reengineering principle is that companies should focus on their core competencies and outsource everything else."[12] It has been proven that contracting out non-core or temporary work (even for testing potential employees on-the-job for highly-skilled positions) works well in private industry.[13] The outsourcing trend in the government planted roots during the George H. W. Bush Administration following the end of the Cold War, and continued into the successive Clinton and George W. Bush Administrations.

The DoD did not escape this trend. The presiding rule set encompassed decreasing the size of the military and outsourcing non-core-mission capabilities to contractors, thereby freeing service personnel to perform their core capability: fighting wars. This trend gained the most momentum during the Bush Administration, pushed wholeheartedly by then Secretary of Defense, Donald Rumsfeld, who deemed "Pentagon's wasteful bureaucracy a threat to national security."[14] OMB Circular No. A-76 was enacted in the 1950s and streamlined in 2003 to enhance in-house government productivity by pushing the government to conduct a cost comparison between doing the work in-house and outsourcing.[15] It focused on activities that were qualified as "commercial" which the government was unable to justify as inherently governmental.[16] This legislation directly contributed to the DoD's increasing reliance on contractors.

In recent times, there has been significant debate with regard to how far DoD has integrated contractors in to day-to-day business. Many critics believe that the DoD went too far, becoming "over reliant" on contractors.[17] This debate is shown in the many statements from top officials and critics. Deputy Defense Secretary William J. Lynn III stated in 2009 that we need to recapture lost talent and expertise, especially in acquisition.[18] However, many assert that the way this is being performed is problematic: "Goals were set in a vacuum" and that appears to be the case today.19 It is important that the U.S. use better metrics in determining targets. In the past, we should have performed analyses before reducing the workforce.

The Obama Administration and Congress have reviewed the existing concept of outsourcing significant amounts of what was perceived as non-core duties and has signaled its intention to pursue a policy of swinging the pendulum back to insourcing.[20] The end result of this change will be an increased size of the government and potentially blur the lines between inherently governmental and non-inherently governmental. In terms of recent legislation, Congress, concerned about the government workforce, imposed a moratorium on A-76 competitions, and enacted Section 736 of the Omnibus Appropriations Act of March 2009, where special considerations were given to federal employees in sourcing projects,[21] and federal agencies (excluding DoD) were required to "devise and implement guidelines for insourcing new and contracted-out functions by mid-July 2009."[22]

Section 324 of the National Defense Authorization Act (NDAA) for FY08 required the DoD to develop & implement its insourcing guidelines,[23] and the Deputy Secretary of Defense released initial insourcing guidelines April 4, 2008, entitled "Implementation of Section 324 of the National Defense Authorization Act for Fiscal year 2008 – Guidelines and Procedures on Insourcing New and Contracted Out Functions." Its final guidance on insourcing was released May 28, 2009, and spoke to a decrease in funding for contract support by 7% in the first two years and an increase in funding for 33,400 new in-house positions. Approximately one third of these new positions were rightly slated for much-needed DoD acquisition personnel. It also provided a process and steps by which functions should be reviewed and prioritized prior to being insourced. Finally, the President required OMB to issue guidance by September 30,

2009, on when to outsource and when to not. The bottom line to these changes is that the associated controversy has led to much wasted time and cost due to confusion over cost comparisons and the definition of inherently governmental. Many critics also question how easily the DoD's culture can be changed.[24] Some agencies might have taken the insourcing initiative literally and reacted too quickly by immediately insourcing personnel without reason or economic analysis.

INHERENTLY GOVERNMENTAL AND NON-INHERENTLY GOVERNMENTAL

An inherently governmental function is one that only the government should perform, to maintain control and avoid conflicts of interest. The Office of Management and Budget ("OMB") published a 317 word definition for inherently governmental on September 23, 1992.[25] Below is an excerpt:

> *"A function that is so intimately related to the public interest as to mandate performance by government employees. These functions include those activities that require either the exercise of discretion in applying government authority or the making of value judgments in making decisions for the government. Government functions normally fall into two categories: (1) the act of governing, i.e., the discretionary exercise of governmental authority, and (2) monetary transactions and entitlements."[26]*

A non-inherently governmental function, by default, would therefore be one where the government lacks expertise or core competency. These are activities normally best performed by contractors. What is difficult is that the inherently governmental definition is not clearly defined in black and white. [27] It is confusing, as it lacks specifics on items such as timing or circumstance. However, there are a few functions that have been found to be undeniably inherently governmental, such as directly conducting or prosecuting a criminal prosecution, commanding the military, or determining an agency's priorities or program.[28] Some functions like contracting, budgeting, or managing efforts are *preferred* governmental. Since IT programs do not lie within any of the functions listed, and because they require specific in-depth expertise that requires continual training, it is arguable that the government is best-served by outsourcing many of these functions. Thus, it is very important to define the criteria by which evaluations should be made in order to determine the right mix of skills. It is also an imperative that an analysis of alternatives is performed for every situation to ensure there is a well-planned approach to insourcing or outsourcing. This is of even more importance when the size and dollar value of IT programs within the DoD are taken into account; they currently account for a large percentage of the DoD budget and are growing. These factors cause IT programs to be highly visible, and further escalate the need to get the labor mix and other factors right,[29] especially since success is largely about having the right people on-board.[30]

WHAT HAPPENED: HOW AND WHY DID THE RULE SET CHANGE?

There are many reasons behind the trend of outsourcing leading to today's changed rules. Some see the main causes as staffing limitations and ceilings, hiring restrictions, and budget cuts.[31] Since the 1997/1998 timeframe, the DoD has been plagued with budget issues. Even though the DoD budget grew after September 11, 2001, it is still under-funded to cover the increased functions with which it is tasked. The Clinton Administration's Secretary of Defense, William Cohen, chose to ameliorate these budgetary issues by shrinking the DoD non-core workforce and reaching to the private sector and their best practices. He coined this shift a "revolution in business affairs," whereby the DoD's fixed costs were reduced through personnel reduction, allowing the Pentagon to afford needed advanced systems and innovation that could "ensure continued military preeminence." [32] It was during this time that a possible over-dependence on contractors developed.

After the terrorist events of September 11, 2001 occurred, contractors were not just relied upon to support IT and business applications; they were also used heavily in war fighting efforts that ensued after the horrific event. Originally, the DoD's operational engagements were anticipated to be short-lived. This resulted in the short-term contractor workforce increasing in size, scope and application, and eventually becoming long-term because of the continued demand for skilled workforce. The problem identified by Secretary Gates that is now confronting DoD is

one where contractor influence has perhaps grown too much,[33] especially within the DoD's war fighting mission area. This problem, however, is more complicated when one considers the case for DoD's business mission area and IT applications - inherently governmental functions are not so obvious.

Over the past decade, we have seen an aging baby boomer workforce retire, leaving behind staffing holes in the government workforce. There is also a leadership gap between those retiring and a young, inexperienced workforce. This has negatively impacted the areas of acquisition, program and financial management, as well as systems engineering. It impacts the DoD's ability to be an "informed buyer."[34] Furthermore, recruitment has not yielded enough qualified replacements, so workforce is inadequate to perform the job well without contractor supplements. This is especially true in IT skills. We must take these points into consideration as we assemble our plan for government staffing of major IT programs.

A major concern in workforce composition is cost. For many years there has been a belief inside the DoD that outsourcing is cost-prohibitive. IT efforts tend to be high cost and consequently often draw strong criticism from permanent DoD staff. Yet, as analysts like Guy Ben-Ari assert, "critics of government contracting have yet to present an analysis showing that costs of contracting outweigh benefits."[35] There appears to be much misunderstanding over the measurement of contractor rates, one of the components of cost.[36] For example, DoD analyst Allison Stanger states that because people see a few key individuals leaving the DoD and joining contractor organizations at pay two to three times higher, the DOD has to pay this in rates.[37] Also, misinformed and unsubstantiated statements pervade the political scene, such as "contractors cost more because they have to make a significant profit to stay in business," claimed by John Threlkeld, legislative representative of the American Federation of Government Employees.[38] Others, including Moshe Schwartz, however, are objectively analyzing the situation and state that contractors are cheaper because "[they] can be hired when a particular need arises and be let go when their services are no longer needed."[39] The Pentagon currently claims it will save $44,000 per insourced employee.[40] However, upon evaluation the math seems questionable. For example, The RAND Corporation did a study in 2008, the results of which showed that contracting has doubled since 1967 to present, yet the relative workforce costs have decreased.[41] This is shown in the graphic, below, taken from the 2008 RAND Report.

Figure 2
DoD Total Budget and Personnel Costs, Then-Year Dollars
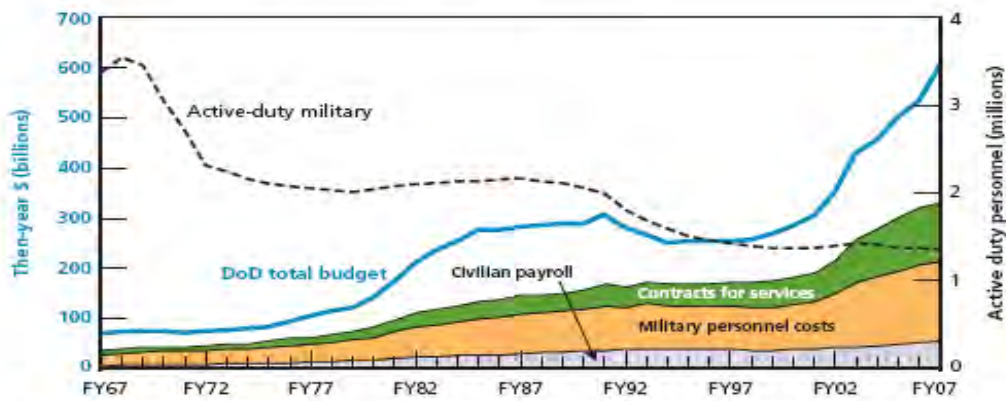
SOURCE: Chu and Eanes, 2008.
RAND OP240-2

Figure 2: RAND Study of DoD Budget and Personnel Costs[42]

Because of the discrepancies in cost perception in outsourcing, it is imperative that cost comparisons are performed to ensure we are comparing similar qualities, such as personnel skill sets and experience levels. It is important to note, however, that Federal services companies' margins are lower than expected, certainly much less than that of commercial services companies.[43] In 2008, the Congressional Budget Office ("CBO") released results of its study

that compared costs of a contractor versus a government employee performing the same job function.44 Their outcome surprised many, as they found the use of contractors to be cheaper, concluding that most comparisons are performed incorrectly. For example, most compare a contractor's rate to a government employee's rate, failing to consider that the billing rate is composed of overhead costs, indirect costs, training and profit, much of which is not factored into a government employee's rate. They also fail to adequately include pensions as well as indirect and overheard costs covering government agency support functions to the government employee. The misconceptions are worrying to private industry, which fears reductions in contracts and revenue. Stan Soloway, of the Professional Services Council, believes "[insourcing strategy] might prove counter-productive because the touted savings are based on fuzzy math and faulty analyses…the comparisons take into account the total, billed cost of a contractor versus the immediate salary and benefits of a federal employee…forget about the cost of the training…laptops and cell phones…lifetime benefits, and increasing the work for offices that manage personnel records and paychecks…the supposed savings might well turn into significant cost increases."[45]

There are many examples of failed IT efforts and their high costs, often cited when arguing against awarding an IT contract. Upon close inspection, one can find many reasons behind these arguments, from both the government side and the private company awarded the contract. Often, contractors are at fault, by over-promising results when bidding for work, or cutting costs too low to win a contract and then being unable to execute the work within the cost and schedule parameters. However, critics of outsourcing, including government officials, fail to admit the other side of the story: that costs have often been higher because the government managed these IT programs poorly.[46] They also do not admit that the majority of debated costing discrepancies are an undeniable result of the government's failure to provide effective and non-changing requirements – this issue can be cited in most major IT programs.

The bottom line to the cost argument is that cost is not a one-size-fits-all scenario. Skill sets and experiences vary considerably within the industry. Moreover, sticker shock is not a good way to form an opinion over cost, and until such time as an acceptable formula is presented on what the true cost of a contractor over a uniformed member is made, this issue is purely speculative and emotive. Finally, cost alone is not a good way to evaluate outsourcing; one must also consider the total package, including quality, performance, and on-time delivery.

Why does the DoD keep following this pattern? Since there is no concrete rule set for when to insource and outsource, too much of this decision is subject to change and political preferences of administrations in charge. Therefore, decisions can reverse with administrations. We must quickly establish this rule set, as is causes chaos and costs much money. It is important to fully examine the advantages and disadvantages of outsourcing IT work as well, to ensure a well-informed decision.

OUTSOURCING FOR IT EFFORTS: ADVANTAGES AND DISADVANTAGES:
Prior to deciding whether to insource or outsource, it is important that an agency weigh advantages against disadvantages for a given program in a given situation and time. First, though, it is helpful to take a look at what the particular advantages and disadvantages might be. Careful evaluation of these may lead to a more successful strategy in insourcing and outsourcing.

ADVANTAGES
The most important advantage of outsourcing is that it allows the DOD to make its support workforce leaner and focus better on its core competencies. Outsourcing helps the U.S. economy and should enable the DoD to function better as a business. This complements initiatives currently being undertaken as part of the DoD business transformation initiative to make the DoD operate more efficiently and effectively. A cost comparison would also show that it is cheaper to stay with the status quo of outsourcing. Insourcing is also time consuming and restrictive, with many departments having ceiling restrictions on the number of employees in organizations. Furthermore, the government does not have to pay contractors for the necessary continuous training required for organic IT personnel. The DoD is not set up to continually train its employees to ensure their technical skill sets do not become obsolete. Additionally, the use of contractors allows for quick and simple personnel ramp-ups and downs, which equals agility and flexibility in the workforce. Finally, as mentioned previously, there are cost considerations. Evidence shows that

when IT is implemented correctly, the cost of outsourcing is lower – this is especially true of temporary labor ("best value"). Outsourcing allows the DoD to turn its fixed costs into variable costs[47] and gain efficiencies by exploiting private industry's core area of expertise, like cutting-edge technology.[48] Contractor companies can access high-quality and lower-cost IT labor more easily and cheaply through economies of scale. With effective outsourcing, the DoD can achieve better cost control,[49] especially through competitive outsourcing, which helps the DoD customer gain best value. IT contractor companies make a living from being competitively innovative, which is what the DoD needs.

The process of weighing pros and cons of outsourcing is beneficial for agencies; they may find that insourcing is not necessarily the solution for every agency. For example, agencies should realize that "Managing employees under a contract is a completely different exercise than managing federal employees who report to you directly."[50] Another example is the ability to pay employees. While private industry does not necessarily pay more than the government,[51] industry has better job category and salary structures for IT professionals; whereas this area is problematic for the DoD.[52] This then contributes to the question of whether the DoD can even fill all open slots for insourcing, especially when the high-tech labor pool is relatively finite for cleared IT professionals and the availability of experienced personnel with the needed skill set is currently slim. Even in the current economic downturn, the IT professional is a sought-after commodity and may not be attracted to government employment.

Contractors have proven themselves to be more experienced and thus more efficient in implementing IT when it is their core competency. Simply put, they have the talent and experience to implement and deploy IT products, even tailored ones, more quickly. They already have the requisite training and knowledge of specific technologies and product sets, which leads to improved performance.[53] Ever-changing technology training is a perishable asset that is continually updated by IT companies as part of their core business practice. It benefits the DoD more to outsource high-skilled IT skill sets and let private industry incur the expensive, recurrent training costs. Journalist Amber Corrin states that the "DoD relies heavily on outside assistance to supply the military with innovations that the government can't always provide ad hoc" and that we must continue to look to industry to produce needed interim solutions.[54] A final advantage to note is that outsourcing enhances the important public/private partnership which is vital to protecting our national infrastructure, as stated by Melissa Hathaway, former acting Sr. Director of Cyberspace for the Obama Administration.[55]

DISADVANTAGES

While there are significant positives to outsourcing, there are also a number of disadvantages. First, contractors traditionally provided too little documentation and training of DoD employees. At times this was due to ulterior motives, proprietary concerns, or operating within contracts that did not require it. This led to high or problematic maintenance costs or the DoD having to be unfairly tied to a particular development contractor. This may result in the DoD being constrained in the future by becoming reliant on a particular contractor for ongoing upgrades or maintenance. Outsourcing has also been problematic in providing knowledge transfer and human capital to government employees who use and maintain the IT product. Further, outsourcing could lead to loss or atrophy of needed in-house technical skills if the wrong – or too many – positions are contracted out.[56] This could even lead to problems for the DoD in managing IT efforts, because without sufficient technical knowledge and experience, an effort cannot be effectively contracted or led. Next, there is a general perception of high costs with outsourcing; however, as mentioned earlier, this isn't necessarily true upon evaluation. Cost misunderstanding is not alone, though. There is also a general lack of understanding over how and when outsourcing is most effectively applied and when it is not. This is demonstrated in the quote by analysts Sameer Kumar and Jason Eickhoff at the Opus School of Business: "Beyond the reduction of labor costs, there is not much general understanding in organizations about when and how outsourcing can be effective and when and how it should not be done, so all should be better understood."[57] Despite lack of understanding, though, contracting alone can sometimes carry high transaction costs.[58]

The issue of timing is also important: while the DoD is following its insourcing initiative, it also comes at a time when there is a large number of long term DoD officials retiring – This may result in the hiring process being more

voluminous than we anticipated![59] Other disadvantages of outsourcing to note include the issues of accountability, questions of reporting chains, and the loss of control of work to outsiders. Contractors are accountable to their companies and direct line of management, but not necessarily to their government customers. Reporting structures are often poorly understood. This is made more complex when sub contractors are employed; this can have the effect of further added layers within the reporting structure and can cause general lack of unification on strategy and purpose.[60]

There are also acquisition issues that accompany outsourcing. The DoD often demands deep technical knowledge and DoD experience from people working on a given project. Yet, the F.A.R.[61] prohibits the ability to request staff on individual bases; therefore, we risk losing key players when contracts expire. Organizational conflicts of interest ("OCIs") often accompany situations where contractors perform inherently governmental or preferred-governmental functions. These are often difficult to navigate and enforce. There are also not enough trained and experienced DoD acquisition officials and managers to effectively oversee the large numbers of contracts and contractors that are currently in place.[62] Moreover, effective, detailed, and upfront requirements for IT projects rarely exist; this point hampers acquisitions, contract performance and IT project outcomes. All of these factors have resulted in lack of workforce analysis, the wrong skills being contracted, poor requirements and thus cost overruns, and a lack of acceptance of contractors into DoD workforce.[63]

The bottom line for outsourcing is that it can be risky, especially when not managed well, contracted well or when poor requirements are provided. The below table sums up and compares the advantages and disadvantages of outsourcing that need to be carefully considered by the DoD.

Advantages of Outsourcing	Disadvantages of Outsourcing
Allows DoD to focus on core competencies	Contractors traditionally provided too little documentation/lessons learned/knowledge transfer in past
Private industry competition increases efficiency and decreases costs	When contracts end, often so does the product specific knowledge and maintenance can be costly
Paradigm shift to insourcing will be organizationally expensive	Can lead to loss or atrophy of DoD organic employee technical skill set
Private industry covers the cost of continuous IT training; free to DoD	Perceived loss of control of effort
Allows for flexibility in personnel ramp-ups and downs resulting in cost savings for project and long-term workforce	Accountability: contractors are accountable to their companies, not the DoD or the effort
Usually lower cost alternative	IT efforts appear pricey at first glance!
Access to economies of scale	Many IT efforts have been mismanaged, leading critics to question outsourcing as fault
Access to private industry allows for partnership on innovation and use of proven, best business practices	When over-performed, can deplete the DoD organic workforce talent
Lowers DoD's fixed costs	The timing of insourcing effort coincides with large workforce retirement-hiring - needs could be much more than expected
Industry can retain talent better with better job category and salary structures for IT jobs	Acquisition issues: DoD cannot pick the precise people to work effort - success is about having the right people work the effort at the right time
Private industry already has the people on-board.	Success requires strong leadership and well-defined requirements, which are often hard to obtain
Have requisite talent & experience to deploy solution faster	Can be risky when not poorly contracted and managed
Helps private industry and the U.S. economy	

Table 1: Comparison of advantages and disadvantages of outsourcing

If consideration of all these advantages and disadvantages doesn't make decision-making difficult enough, then adding to the list of negatives is the perception that this paradigm shift to insourcing is a Democratic Party attempt to grow the federal government.[64] Many U.S. citizens are wary of large government.

After the DoD has analyzed and weighed the advantages against the disadvantages of outsourcing, the next step is to institutionalize its plan of action. The correct analysis, performed upfront, can potentially decrease the occurrence of disruptive paradigm shifts whenever there is a change in administration. There are two foci that must be planned: short-term and long-term, both of which are described below.

SHORT-TERM FOCUS**:**
In the short-term, organizations within the DoD should begin to develop specific and strategic plans for when to insource or outsource; these plans will vary according to organization, what type of activity is being performed, and other factors such as timing and location. It is important that the organization does not arbitrarily decide on a percentage for insourcing, but first perform studies and assemble plans for its future. As staffing analyst Stephen Goldsmith writes, "[this is] an impossible question. Without specifics of what the organization does and what services are available in the market, there's no way to know what the right answer might be."[65] Also, organizations must first ensure they decide upon a workforce strategy based upon the work to be performed before considering quotas.[66] DoD organizations must not jump blindly; they should first realize that the insourcing thrust was designed as a recommendation and not as a mandate to provide for government staffing, a point which has been confused by many.[67] It is imperative that DoD organizations first ask the correct questions and research the market, always ensuring the U.S. Citizens' best interests are being served. Then, organizations can proceed to insource when it makes sense and meets desired criteria, with "detailed guidance and discipline."[68] However, while this process is being worked out (analysis, planning and insourcing take time), the only way to meet staffing demands and work requirements is to continue to rely on contractors through typical outsourcing methods and competitively sourced procurements.

The DoD should also continue to review and audit its current contracts to ensure efficiency, effectiveness, and that the right kind and quality of work are being performed by contractors. Contracts should mandate that the contractors train DoD employees for areas of technical expertise, such as maintenance of the products that are developed. In the near-term, the DoD should also continue to heavily leverage contractor staff augmentation in government functions like acquisition, and then contractually require these contractor employees to assist in the training of new government employees, phasing out contractor staff in these areas as trained government replacements become ready. Training of DoD acquisition staff is crucial to ensure successful acquisition and execution of outsourced work, and becomes part of the DoD's preparedness in becoming a "smart buyer." The DoD acquisition staff must be grown, as current staffing levels are too small to meet requirements. The DoD must also take steps to improve its acquisition process: it must instill more discipline, provide better requirements, decide upon the best contract structures to promote competition, and get the best performance possible out of outsourcing (i.e., more fixed price contracts).[69] Throughout this short-term phase, the DoD should be recruiting and hiring experienced staff in areas where decisions have been made in favor of insourcing as the best approach.[70]

Lastly, the DoD should also examine the possibility and efficiency of using alternative arrangements for its IT services work.[71] These should be leveraged in both the short-term and the long-term. Examples of these are cooperative partnerships (joint governmental initiatives) or inter-service agreements between the organization and in-house government fee-for-service agencies experienced in IT. These can be accessed using simple memorandums of agreement and funds transfer between agencies. Further, Federal Government Corporations, which are internal business-like entities within the government, can be used, as well as Federally-Funded Research and Development Centers ("FFRDCs"), for both research and development needs. FFRDCs are quickly-accessible, and understand the government well. Caution in their use should be practiced, however, as FFRDCs tend to be expensive and at times difficult to manage. A few other possible arrangements are government-owned contractor operated, private management (commercially-operated government-owned assets), public/private partnerships or joint ventures (contractual relationships where the government owns facility and private enterprise invests in the design/development of property, and both share resulting income), or government-sponsored enterprises (federally-chartered but privately-owned financial institutions). In applying cutting-edge technology, it is important to have a government/contractor partnership in which both share a portion of the cost and risk, and both are incentivized to

succeed. The bottom line to these arrangements is that the future might be "strategic sourcing," where long-term, mutually-advantageous partnerships occur amongst complementary firms, allowing for efficiency in operations.[72]

LONG-TERM

DoD organizations must continue to plan and prepare for their staffing needs in the long-term, strictly following their plans in determining when to in-source or outsource. They must also continue to build some in-house capabilities, but continue to also reach to private industry, especially for a private industry core competency like IT, for surge needs, temporary needs, or subject matter expert needs. Additionally, the DoD should continue to leverage the alternative arrangements mentioned in the short-term section. When outsourcing, the best competitive contracting methods should be employed (i.e., Cost Plus Incentive Fee and use of Service Level Agreements). Similarly, the DoD should employ performance-based employment to incentivize government employees to perform at high standards, which has been done well in private industry for many years. The bottom line is that as the debate for insourcing versus outsourcing moves forward, all personnel, whether DoD organic or contractors, must be held accountable.

TECHNOLOGY ADOPTION

As a good business practice, the DoD should usually attempt to implement tested, proven, and somewhat mature technology. However, when a cost/benefit analysis demonstrates that a situation is vital to our national defense, requiring strong force projection and the application of the nation's technological leadership, the DoD is often required to implement more cutting-edge technologies. This allows the U.S. to be proactive in fending off threats that are emerging from state and non–state actors, especially in cyber warfare. This would place us in the "early adopter" phase of technology adoption, as depicted below. Here, if risk is managed well, we are rewarded with high technological capability returns for our national defense. Technology can act as a force multiplier where we can do more with fewer resources – and faster. Conversely, in the late adoption mode, the risk of implementing more mainstream and proven technologies is low. However, the corresponding payoff is also low. It is important to make the decision to be an early or late adopter upfront and to understand the risks involved. Currently, the DoD requires technological updates. IT is implemented as an afterthought. To get the most benefit from IT, leadership needs to become involved and embrace IT, practicing less risk aversion than it currently does.
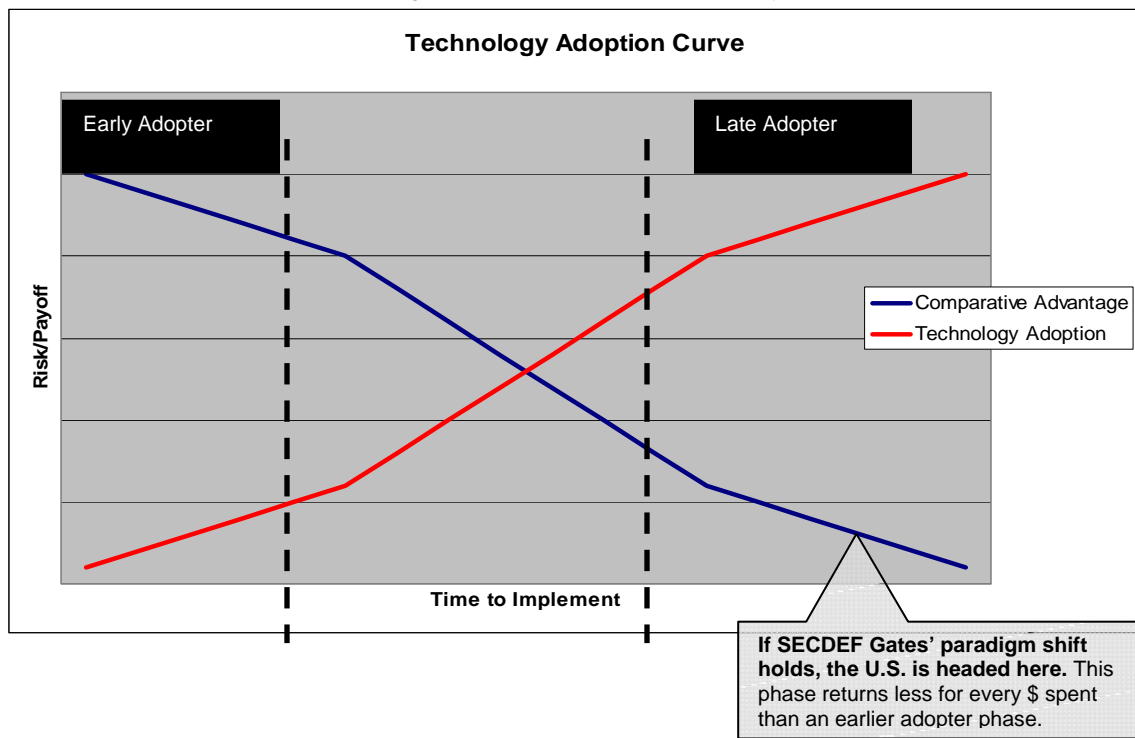

Figure 2: Technology Adoption Curve and Risk/Reward

Risk aversion can be more risky to the nation's defense in the long run. The risk of the current administration's policy changes in staffing is twofold. First, we are attempting to save money by extending the use of legacy or outdated systems and technologies far beyond their usefulness. The result is that we less able to compete or defend our nation. Second, the process of insourcing will cost more and benefit us less in technology programs. It will result in fewer people to work the effort, and whose skill sets become atrophied over time. This will severely impact the nation's ability to adopt technology and innovate. While the nation's ability to adopt technology may be somewhat hampered in the current economy and budget constraints, we do have control over when to outsource. We must act quickly to ensure the government has the right mix of in-house and contract personnel to accomplish critical IT missions.

DECISION TREE

It is helpful to divide IT into three discrete areas to assist in an organization's decision making process of whether to in-source or outsource. Andrew McAfee, in his paper, "Mastering the Three Worlds of Information Technology," has classified IT into three logical categories, listed and defined below, that "can help [DoD] leaders understand which technologies they must invest in as well as what they should do to maximize returns.[73] The classification can also indicate which IT initiatives are going to be relatively easy to implement."[74] These classifications will be used as a framework in the ensuing decision tree to help leaders decide when to insource or outsource within their organizations.

Function Information Technology ("FIT") is defined by McAfee as "IT that assists personnel with the execution of discrete tasks." Some examples of FIT that McAfee provided are simulations, spreadsheets, computer aided design, and statistical software. [75] Another example is word processor software. FIT has many characteristics: it enhances productivity and optimizes performance, and can be easily adopted without the need for complements. Its impact is increased when complementary software packages are in place. FIT also acts as an enabler for the workforce to perform their jobs better, faster, or more cost-effectively. An organization will be less efficient and effective by not implementing and using FIT. Examples of such penalties in the DoD include higher costs due to the need for more personnel to perform a function and loss in global competitiveness due to the need to perform a task manually when competitors use automation.

Network Information Technology ("NIT") is defined by McAfee as "IT that facilitates interactions without specifying their parameters," meaning that it allows people to interact, but doesn't define how they interact.[76] People are able to use these tools for whatever and however they wish. Some examples of NIT are email, instant messaging software, wikis, blogs, and mashups. NIT characteristics are: it increases collaboration, it accepts data in many formats, and its use is optional. Further, NIT "brings complements with it but allows users to implement and modify them over time." NIT is both an enabler and a multiplier for a workforce. There is a penalty for not implementing NIT and a reward for risk, meaning that an organization will lose out on the network effects of collaboration, resulting in increased personnel and organizational costs, if NIT is not employed.

Enterprise Information Technology ("EIT") is defined by McAfee as "technology that specifies business processes" for an organization.[77] EIT fundamentally changes how the organization does business. Some examples of EIT are Enterprise Resource Planning software, Customer Relationship Management software, Supply Chain Management software, Service Oriented Architecture software, and Business Intelligence software. Characteristics of EIT are: it helps standardize and monitor work, it defines tasks and sequences; it accepts data in many formats, and its use is mandatory by all. Finally EIT is characterized as inflexible for organizations and developers; "it imposes complements throughout the organization," meaning that the implementer has little flexibility. EIT acts as both an enabler and a multiplier for an organization. There is a penalty for not using EIT and a high reward for risk, meaning standardization of many business processes can be helpful for the DoD, but these solutions can be difficult and costly to implement, especially when they significantly alter already-established business processes. For example, ERP implementations could save personnel costs and time in the long haul, but many have failed in the DoD because of poor management and failure to change the culture of the organization using it.

The below table is a generalized and simplified view of where insourcing and outsourcing are best applied in an organization. One thing to note is that there are always exceptions to this rule and specifics that dictate different rules. Specific questions can be asked to validate when insourcing or outsourcing is the best fit for an organization. These will be depicted in the ensuing decision processes.
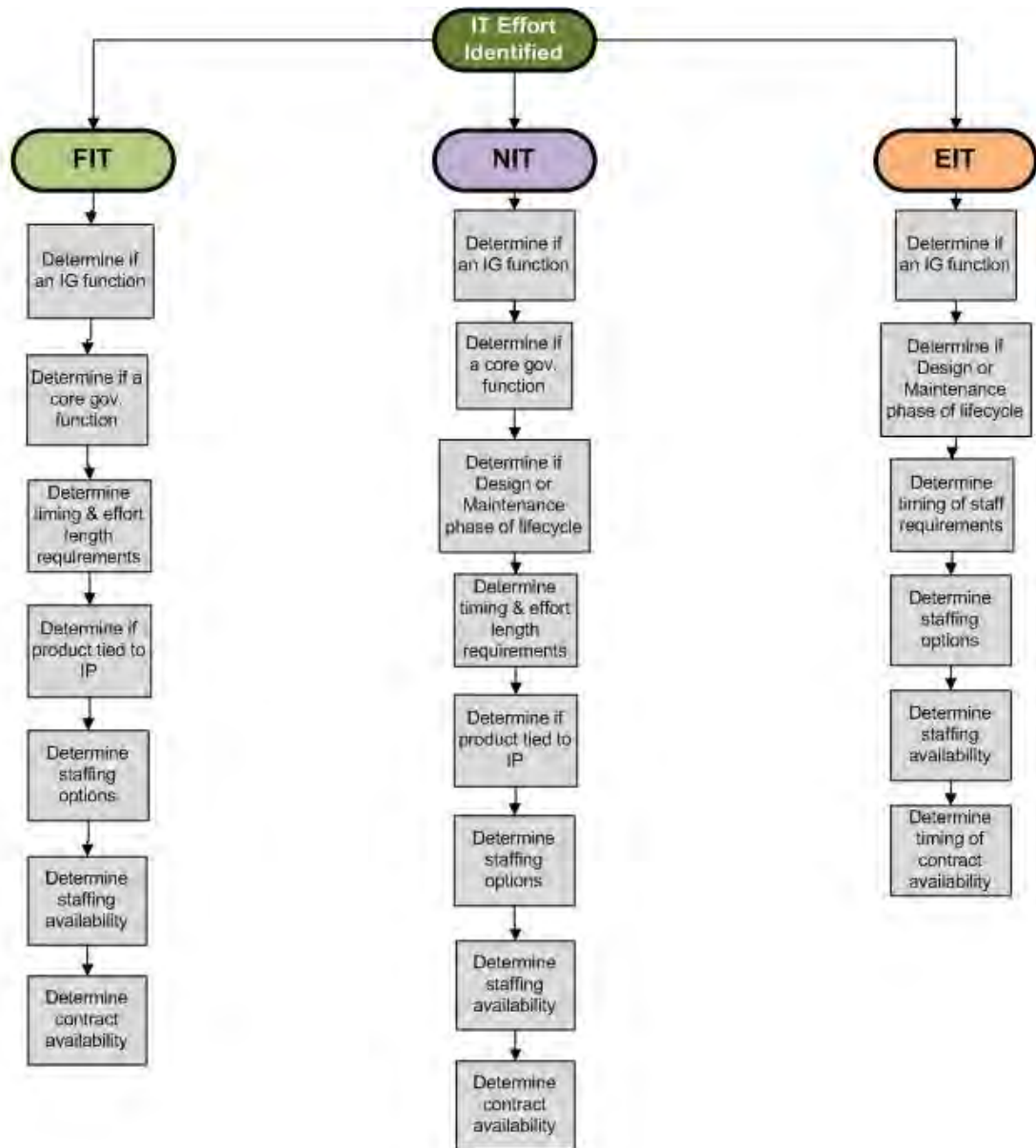
	IT Type	Design	Develop	Deploy/Train	Sustain
In-source	FIT	X	X	X	X
	NIT	X		X	X
	EIT			X	
Outsource	FIT	only for staff scarcity or ramp-ups	only for staff scarcity or ramp-ups	only for staff scarcity or ramp-ups	only for staff scarcity or ramp-ups
	NIT	X	X	X	X
	EIT	X	X	X	X

Table 2: Insource and Outsource comparisons by IT Lifecycle Phases. *The above table turns into a decision tree below. This table takes into account that the Acquisition Phase of the IT effort will be performed by the government as a "smart buyer," occurring before and during the Design phase.*

It is important to note that there are numerous items in an IT program that fall outside the realm of the table. This includes inherently governmental work such as defining policy, acquisition as mentioned above, program management (on the government side), information assurance and security tasks, SEDA contracting (government staff augmentation) knowledge management, configuration management, and contracting officer responsibilities. Most of these could be classified as inherently governmental or preferred governmental, although in pinch and temporary situations, contractors can perform most, except policy implementation and oversight. Requirements engineering is assumed to fit mostly within the Design stage.

The following process models depict the processes and questions an organization should undertake before insourcing or outsourcing for the three classifications of IT efforts. Many of these questions are listed in the "Outsourcing Brainstorm" by S. Kumar, et al, in their outsourcing article.[78] However, since this paper is only limited to IT and functions within the three types of IT herein; the questions differ somewhat. For FIT, it assumes out-of-the-box implementation of Commercial-off-the-Shelf software to the extent possible.
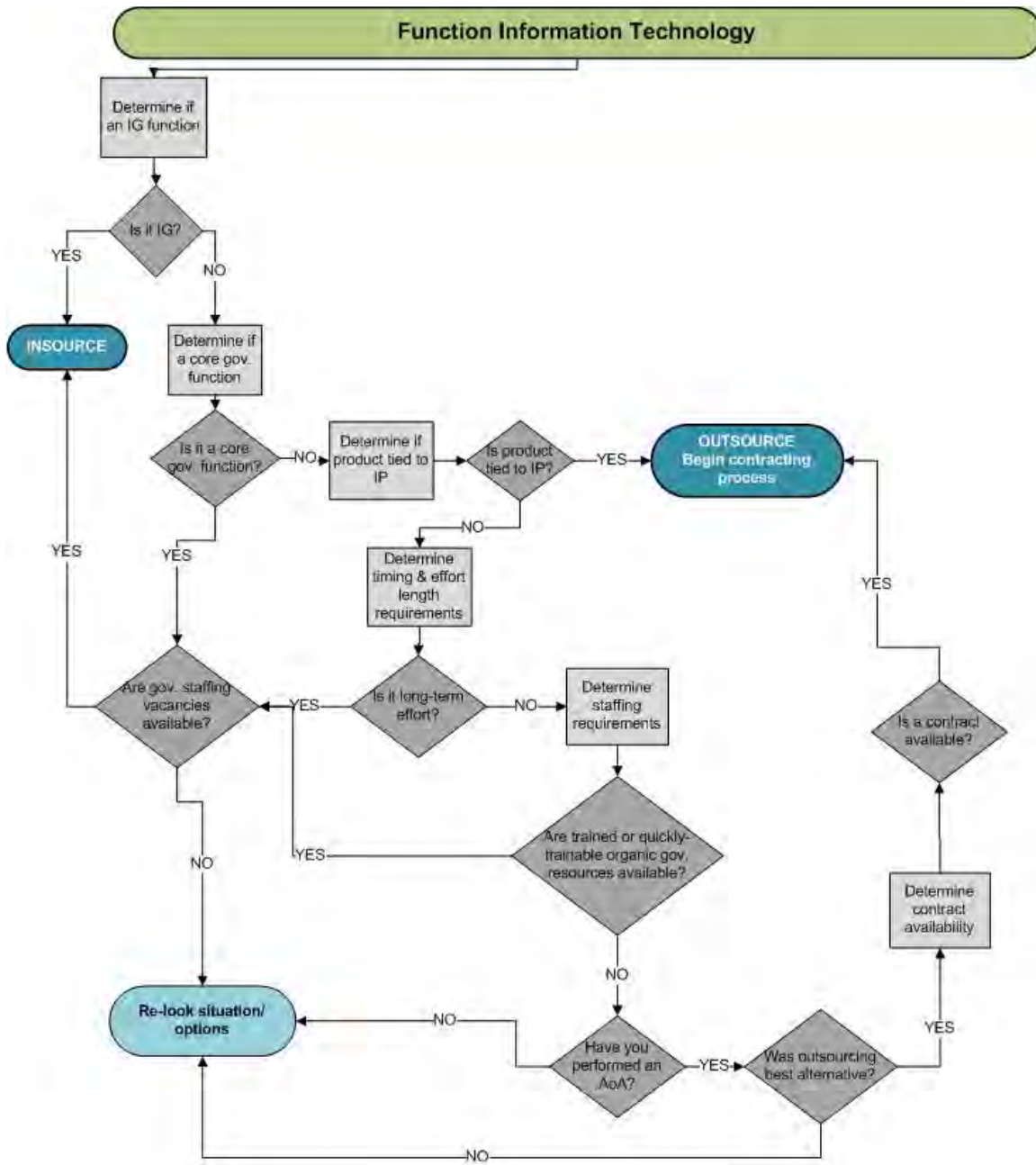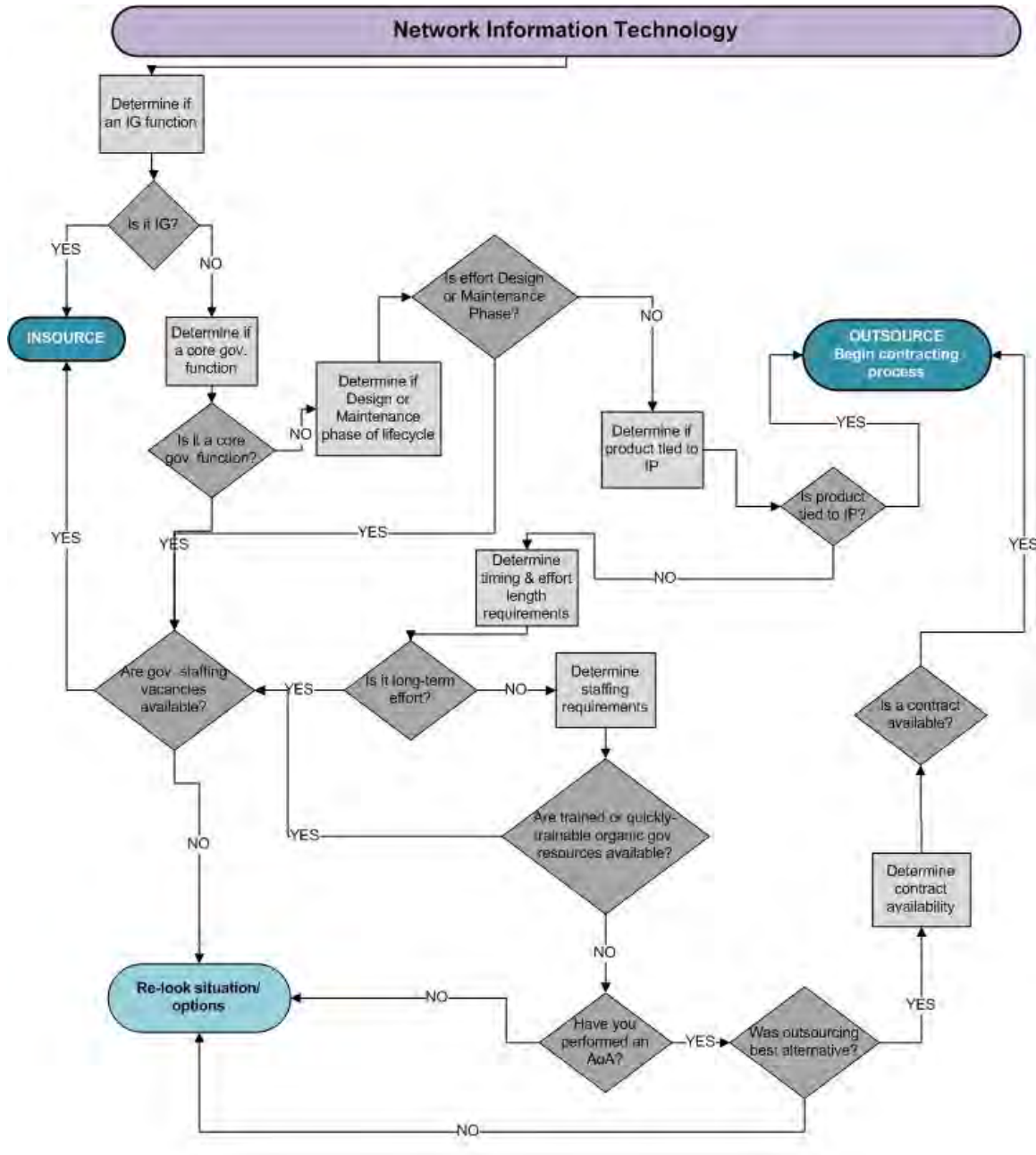
IT Effort Identified

FIT
- Determine if an IG function
- Determine if a core gov. function
- Determine timing & effort length requirements
- Determine if product tied to IP
- Determine staffing options
- Determine staffing availability
- Determine contract availability

NIT
- Determine if an IG function
- Determine if a core gov. function
- Determine if Design or Maintenance phase of lifecycle
- Determine timing & effort length requirements
- Determine if product tied to IP
- Determine staffing options
- Determine staffing availability
- Determine contract availability

EIT
- Determine if an IG function
- Determine if Design or Maintenance phase of lifecycle
- Determine timing of staff requirements
- Determine staffing options
- Determine staffing availability
- Determine timing of contract availability

Legend:

"IG" = Inherently governmental

Figure 3. Processes by Types of IT

Function Information Technology

Determine if an IG function

Is it IG?
- YES → INSOURCE
- NO → Determine if a core gov. function

Is it a core gov. function?
- YES → Are gov. staffing vacancies available?
- NO → Determine if product tied to IP

Is product tied to IP?
- YES → OUTSOURCE Begin contracting process
- NO → Determine timing & effort length requirements

Is it long-term effort?
- YES → Are gov. staffing vacancies available?
- NO → Determine staffing requirements

Are gov. staffing vacancies available?
- YES (to INSOURCE)
- NO → Re-look situation/ options

Are trained or quickly-trainable organic gov. resources available?
- YES → Are gov. staffing vacancies available?
- NO → Have you performed an AoA?

Have you performed an AoA?
- YES → Was outsourcing best alternative?
- NO → Re-look situation/ options

Was outsourcing best alternative?
- YES → Determine contract availability
- NO → Re-look situation/ options

Determine contract availability

Is a contract available?
- YES → OUTSOURCE Begin contracting process

Legend:
"IG" = Inherently governmental
"AoA" = Analysis of Alternatives

Figure 4. FIT Staffing Decision Process

Network Information Technology
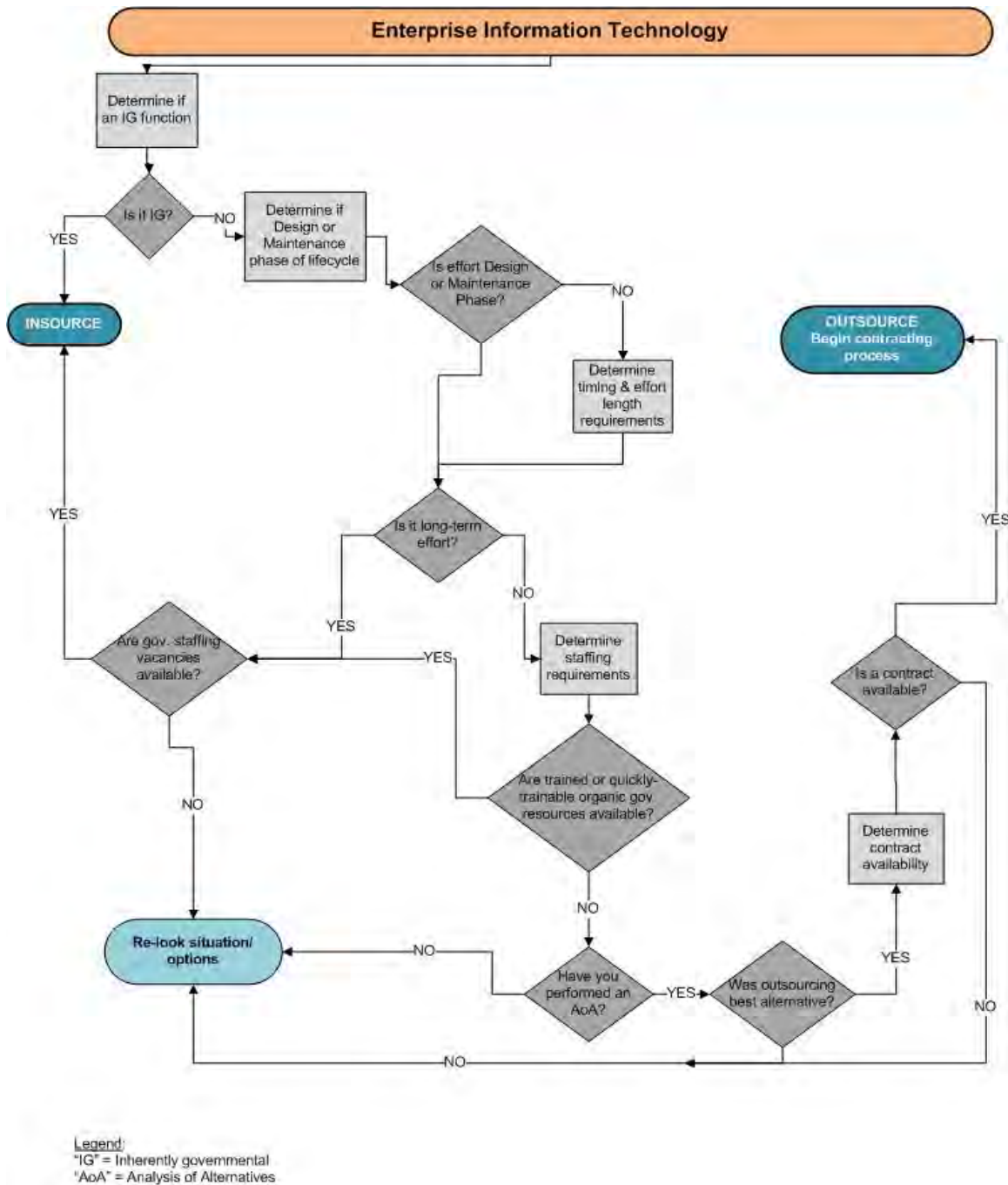
Determine if an IG function

Is it IG?

YES → INSOURCE

NO → Determine if a core gov. function

Is it a core gov. function?

Is effort Design or Maintenance Phase?

NO → Determine if product tied to IP

YES → OUTSOURCE Begin contracting process

Determine if Design or Maintenance phase of lifecycle

Is it a core gov. function? NO → Determine if Design or Maintenance phase of lifecycle

YES → Is product tied to IP?

YES → OUTSOURCE

NO → Determine timing & effort length requirements

YES → Are gov. staffing vacancies available?

YES → Is it long-term effort? NO → Determine staffing requirements

Are trained or quickly-trainable organic gov resources available?

Is a contract available?

YES → Determine contract availability

NO → Re-look situation/ options

NO → Have you performed an AoA? YES → Was outsourcing best alternative?

YES → Is a contract available? YES

NO → Re-look situation/ options

Legend:
"IG" = Inherently governmental
"AoA" = Analysis of Alternatives

Figure 5. NIT Staffing Decision Process

Figure 6. EIT Staffing Decision Process

CONCLUSION

In this age of persistent conflict, it is imperative that the U.S. place emphasis on its ability to remain the global leader in technology and innovation. The U.S. seems to be losing this battle in some areas. Certainly, we are extremely vulnerable in the cyber domain. Without this emphasis, the U.S. risks loss of its globally competitive standing and eventually its ability to provide security for the country and its people. Using Cyber as an example, our IT systems as a nation are under constant attack. To defend the nation, we must arm everyone with defensive systems to protect both private and public assets and there is no real central policy or governance structure at a national level. There is no rational border between inherently governmental and public/private interest here. Everyone is at risk all the time.

The DoD must therefore carefully consider options and ramifications before making its IT staffing decisions. Policies and procedures need to be implemented that better enable the U.S. private sector to innovate and compete, and the DoD needs to ensure that insourcing does not irreparably harm the private sector DIB. The paradigm shift to DoD insourcing is not only causing needless confusion, but also creating an unnecessary churn of spending money and time ineffectively. It could be argued that these changes are contrary to the DoD culture of the public-private partnership that has served the U.S. so well across the span of time. If not carefully implemented, the new insourcing paradigm has the potential to turn the U.S. into a late technology adopter. This will result in a risk-adverse pathology infecting technology adoption resulting in government personnel not be able to maintain the highly technical skill sets required to keep our nation a leader in technology.

Instilling arbitrary requirements limiting the numbers of contractors in a workforce in a world of constantly-evolving requirements and technology could become disastrous to innovation. While the DoD should be careful to not outsource core competencies (i.e., fighting wars), many support functions like IT should be outsourced to companies whose core competency is IT. Insourcing can be used to replace an aging workforce and for certain inherently governmental functions mentioned herein; we need to ensure a process is put in place without an arbitrary workforce quota – and this process needs to be well-thought out. Certainly there is a need for an organic professional acquisition corps and effective program management workforce. As journalist Jaime Garcia states in the title of his 21 January 2010 article, "Insourcing is about strategy, not numbers."79 Insourcing the "right" people will require time and will be difficult to achieve. In doing so, the DoD should always perform business cases and Analyses of Alternatives prior to proceeding. The DoD also needs to enact a more nimble IT-procurement process (while IT is tested but still in bleeding/leading edge) and to reform our educational institutions in the U.S. in order to remain a formidable force.

The beginning of this paper showed the cost of a large IT program failure like DIMHRS is largely due to staffing issues. It is vital that the DoD applies lessons learned from this failure to future IT efforts. We must ensure we have the right staff and the correct mix of leadership, skills, and experience working all aspects of large IT efforts. The question of what work is inherently governmental remains. And, the answer continues to be: "That depends." We must properly customize and analyze our DoD personnel selection to ensure we best support all our military personnel defending the nation.

RECOMMENDATIONS

There are a variety of recommendations that arise from this paper. The first is that the U.S. needs to re-think the current insourcing initiative to account for inherently governmental with respect to IT projects. The U.S. should also reconsider the push for a percentage of organic workforce in the DoD, especially with IT efforts. DoD organic capabilities do need to grow in certain areas, especially since many in the workforce are retiring and too many positions have been previously outsourced, but we must not proceed without a cost/benefit analysis for each agency. Using an "arbitrary" percentage for insourcing initiative is turning out to be costly, time consuming and confusing, particularly when performed in a vacuum. This is not a one-size fits-all scenario. We must think strategy and agency mission before undertaking any change. Moving forward, the U.S. should minimize paradigm shifts among administrations, like the current insourcing initiative, to the extent possible. However, it will nonetheless be useful for the DoD to perform a periodic audit of its current contracts to get a good picture of what jobs contractors are performing and what might need to change in order to make well-informed decisions and to be a "smart buyer."

Further recommendations include making improvement to the DoD's requirements process to better lay out work requirements, pursue opportunities for automation, and to determine skills needed, specifying whether the need is short-term or long-term. DoD agencies need to know that outsourcing will need to occur, especially in the IT realm, but they will be better off when they perform analyses of alternatives and assemble plans for their futures. This will help them to lay out their staffing needs in advance.

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the official policy or position of the National Defense University,
the Department of Defense or the U.S. Government.

DISCLAIMER

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[8] This is because of the enabler and multiplier effects of technology.

[9] Sameer Kumar and Jason H. Eickhoff of Opus College of Business, "Outsourcing: When and How Should it Be Done?" *Information Knowledge Systems Management,* 5 (2005/2006): 245-259.

[10] The DoD, among many, believe that technology is usually best-performed by contractors whose company core mission is technology contracting. The belief is that this will lead to decreased costs, efficiencies in scale and use of contractor core competencies.

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[19] Stephen Goldsmith, "Outsourcing, Insourcing, Rightsourcing,"*Governing*, (October 21, 2009): 1.

[20] Schumpeter, "Talent on Tap: The Fashion for Hiring Temps Has Reached the Executive Suite," *The Economist,* (2009): 2.

[21] Kimberly Buehler, "Army Implements Congressional Direction to Insourcing," *Army AL&T*, (Apr-Jun 2009): 1-2. Section 2463 of Title 10, U.S.C., directs that the DoD inventory what functions are currently being performed by contractors and precluded DoD from conducting public-private competitions and prohibited "limitations or restrictions on the number of functions that may be converted to performance by DoD civilian employees." It also directed special consideration to insourcing for: functions performed by DoD civilians in the last 10 years, functions that are close to the definition of IG, as defined in F.A. R. 7503(d), functions outsourced non-competitively, and "contracts with documented poor performance records resulting from excessive costs or inferior quality." Note: there seems to be no proof, though, that insourcing will actually ameliorate the situation.

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[23] Ibid, 3.

[24] Ibid, 8.

[25] OMB, "Inherently Governmental Functions," Policy Letter 92-1 (1992),
http://www.whitehouse.gov/omb/rewrite/procurement/policy_letters/92-1_092392.html.

[26] Matthew Weigelt, "Inherently Governmental Defies Quick Definition*," Federal Computer Week*, (January 8, 2010):
1. (Also, C.F.R. Title 48, policy).

27 Allan Burman is cited by Matthew Weigelt, saying There is no "black-and-white" characterization of inherently
governmental functions." (Matthew Weigelt, "Inherently Governmental Defies Quick Definition," Federal Computer
Week, (January 8, 2010): 1-4.

[28] Matthew Weigelt, "Inherently Governmental Defies Quick Definition*," Federal Computer Week*, (January 8, 2010):
1. (Also, C.F.R. Title 48, policy).
29 Since the price tag for IT programs is typically fairly high, and there have been many failures to deliver (such as
large ERP instantiations), many have deduced that the problem is a result of outsourcing rather than poor upfront
requirements and pushing a large, costly technology solution before there is a specific requirement. This has given IT
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[35] Guy Ben-Ari, "The Upside of Contracting: Government Contracting is Not All Bad," *DefenseNews,* (November 16,
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[36] Mark Cancian, "Contractors: The New Element of Military Force Structure," *Parameters*, 44.1 (2008): 72.

[37] Allison Stanger, *One Nation Under Contract* (New Haven and London: Yale University Press), 96. Note: an
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[38] Alice Lipowicz & Doug Beizer,"Industry Skeptical of Proposed Contractor Cuts," *Federal Computer Week*, (2009):
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[39] Moshe Schwartz, "Department of Defense Contractors in Iraq and Afghanistan: Background and Analysis,"
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after the September 11, 2001 terrorist attacks. The chart shows the decrease in the active-duty military size and the
increased contractor service staff. For specifics, in 1967, contractors accounted for 11% of the total force (35% of
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