Constructing Successful Business Relationships

Innovation in Contractual Incentives

FINAL

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For the Deputy Assistant Secretary of the Army (Procurement)

Abstract

The changes in acquisition practices taking place today are unprecedented. In the area of business relationships, the Army is taking the lead; it understands that a crucial benefit of acquisition reform is giving the government more leeway to structure business arrangements with industry in ways that increase the probability that contractors will deliver successful results to government customers.

To achieve this flexibility, the Army is working to change the structure and the effectiveness of its business relationships with industry. It is doing so by improving the effectiveness of the contractual incentives applied within these relationships—an area the Army has recognized provides great opportunity for payback—by:

- Reducing Total Ownership Costs (TOC) across the acquisition life cycle;
- Improving the basic terms of underlying business relationships to preclude inappropriate contractor behavior;
- Improving the structure of business relationships with industry to increase the chances that contractors will successfully deliver results to government customers;
- Focusing on better planning and use of existing contractual incentives;
- Developing new and innovative approaches to incentivizing performance;
- Improving the ability of the contracting and acquisition workforce to construct successful business relationships that maximize contractor performance through the application of contractual incentives; and
- Leveraging the efficiencies inherent in knowledge management to support the contracting and acquisition workforce.

One of an organization's most valuable assets is its knowledge base. It is also the hardest to manage. Connecting the contracting workforce with the information and tools they need is essential. Structured approaches to understanding the procurement business case, such as the development and deployment of an incentive application decision tool discussed in this study, combined with an understanding of the financial aspects of incentive application, can make the contracting and acquisition workforce far more efficient.

Pushing the successes of acquisition reform to the front lines of the contracting workforce is a necessity. Transforming the vision for change into practical application and training must be the contracting and acquisition professional's everyday approach to constructing and executing successful business relationships.

This study is the first step in this major change process within the Army Contracting and Acquisition Community.

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Executive Summary

The Army, under the leadership of Dr. Kenneth J. Oscar, Deputy Assistant Secretary of the Army (Procurement), commissioned a two phase, "Study of Innovation in Contractual Incentives," to improve the Army's ability to construct more successful business relationships through effectively applying contractual incentives. Phase I developed a contractual incentive baseline for further research. Phase II explores more innovative applications of contractual incentives and proposes new processes and models to leverage the acquisition workforce in their efforts.

The study, with the focus on successful contractor performance and results, will not only move Army acquisition reform forward, but also will enable the Army contracting and acquisition workforce to better understand the changes necessary to create successful business relationships.

The government and the contractor generally share a common set of top-level goals. These goals include the achievement of customer satisfaction, program stability, and positive program and financial performance. Participants in successful business relationships develop a shared ability to find mutually beneficial solutions to achieve these goals.

This requires a strategy that focuses not only upon the areas of performance interest, but also requires real understanding of the business case. For the government, this will likely include reduced total operating costs and performance that meets or exceeds stated performance requirements. For the contractor, it includes a stable program, the generation of positive cash flow and profit, and a satisfied government customer. Contractual strategies not based on a sound understanding of the business case risk incentivizing the wrong behavior and jeopardizing successful delivery of the requirement.

One of an organization's most valuable assets is its knowledge base. It is also the hardest to manage. New approaches are necessary to connect the contracting and acquisition workforce with the information and tools they need.

One new approach is *Factor Collaboration*[SM] (FC). With the acquisition regulations and guidance as the framework, FC is presented as a useful and structured process to jointly assist the Army and industry in achieving a more comprehensive understanding of the overall procurement business case.

With this increased insight, the probability that the contractor will deliver what is required to the government can be improved. The study also presents a *Compendium of Contractual Incentives* (CCI). The CCI documents the characteristics of a baseline set of contractual incentives that can be considered by the contracting workforce as they construct the business relationship.

Finally, the study recommends the development and deployment of a web-based incentive application decision tool to support the contracting and acquisition workforce in more effectively applying contractual incentives. This decision tool uses an expert system that is based upon the *Contractual Incentives Application Model*[SM] and the *Factor Collaboration*[SM] process discussed in this study. Its use can enhance the ability of the Army and industry to construct successful business relationships through more effective application of targeted contractual incentives.

Pushing the changes and new concepts from the successes of acquisition reform to the front lines of the contracting workforce is a necessity. Transforming the vision for change into practical application and training must be the contracting and acquisition professional's everyday approach to constructing and executing successful business relationships.

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PHASE I – DEVELOPING THE BASELINE

Phase I, completed in March 1999, explored the history, development and application of contractual incentives and developed a baseline definition of *contractual incentive* that was further refined during Phase II. It also presented a cross section of concepts and initiatives currently in practice throughout government and industry. (The Phase I report is included as Appendix D of this report.)

Phase I comprised a search of books, periodicals, association publications, reports and observations, interviews with program and industry managers, and comments and insights from experts in the field of contracting and acquisition. The Army also solicited comments to the Phase I Study from industry, through the Commerce Business Daily (CBD), and from Army mid- and junior-level acquisition workforce professionals, through the Army Acquisition Reform website. The Phase I Study discussed the following major areas:

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FOCUS AREAS

Traditional approaches to the application of contractual incentives, from the culture instilled in the schoolhouse, to practical application in the field, need to change. Simply stated, incomplete understanding of the business case has resulted in business relationships whose terms, conditions, and structure incentivize contractor behavior different from that desired.

Changing the culture and providing the training to improve the ability of the workforce to craft more effective relationships is *as important* as improving the effectiveness of targeted contractual incentives. A composite approach to change in both training and application is necessary.

The study covered all six of the following areas. The two focus groups, within their limited timeframe, considered Areas 1, 2, 3, and 4, focusing on the definitions, the influences, the factors, and the application of incentives.

Area 1: What is a "contractual incentive?"

Area 2: What *influences* impact the creation and execution of a business relationship between the Army and its contractors?

Area 3: What *factors* are considered important by the Army and its contractor before entering into a business relationship?

Area 4: What innovative applications of *existing* contractual incentives can be developed to improve the likelihood of successful contractor performance? What *new and innovative* contractual incentives can be developed to improve the likelihood of successful contractor performance?

Area 5: What changes can be developed in the *process* of applying contractual incentives within the business relationship to increase effectiveness?

Area 6: How can the Army improve its *ability* to incentivize successful contractor performance?

Area 1: What is a contractual incentive?

To ensure a consistent baseline from which to discuss, explore and assess the multi-dimensional aspects of the subject, the group developed a consensus definition for contractual incentive.

Contractual incentives must be considered and selected within the context of a sound understanding of the business case surrounding the procurement. They must be applied in a manner consistent with and supporting the total business process.

Contractual Incentive, as used in this study, consists of both contract incentives, and incentive relationships and strategies.

Contract Incentive refers to the monetary or non-monetary structural motivators embodied in or arising from the terms and conditions of the contract that influence the behavior of the buyer and the seller toward accomplishing desired contractual outcomes.

Incentive Relationship/Strategy refers to those factors that influence the motivation of the buyer and the seller and directly impact their approach to the total business process.

Total Business Process includes requirements generation and definition, acquisition strategy and business case considerations, the award process, and post-award performance—all focused on attaining desired outcomes.

Area 2: What influences act upon the creation and execution of a business relationship between the Army and its contractors?

A business relationship provides a mutual forum in which the goals and influences that affect the achievement of a desired objective interact. In a successful business relationship, the parties achieve their individual and shared goals and objectives through the successful planning, execution, and delivery of their respective responsibilities.

Since this study focuses on the contractual relationship between the Army and its existing and potential contractors, it is necessary to understand these influences as they act upon the development and execution of this relationship. Focus Group 1 discussed these influences and their observations in each of the following areas:

- Structural
- Financial
- Programmatic
- Contractual
- Regulatory and Statutory
- Political

Key observations include the following:

- The government is too often focused on the profit earned by contractors, rather than on the results required. If they could more broadly recognize that incentivizing and rewarding cost reduction enables contractors to focus on cost reductions, the results can be increased performance at lower cost.
- Critical to targeting incentives is understanding the motivation of the parties. Not doing so results in a poor incentive structure, a problematic relationship, and undesired contractor behavior.
- Leadership must be committed to change, understand why change is necessary, and drive the necessary change through all levels of the Army.
- Changing the culture and the training is necessary to change the approach.
- Reward innovation even if it results in failure.
- Expectations of company performance by the capital markets are a critical factor in any decision to enter into a business relationship.
- Aligning motivations of the subcontractor with the goals of the prime contractor, and its government customer, is critical if the incentive structure is to be successful.
- A perception exists that regulations continue to drive what can be done. The process for waivers and deviations can be lengthy and creates missed opportunities for innovative changes.
- Program instability in funding and requirements increases risk and affects bid-no-bid decisions, as well as the ability to make long-term commitments with suppliers.
- Every successful program is the result of information and risk sharing, based on common motivation of the parties and sense of shared destiny in the results.
- Government accounting must be able to accommodate innovative incentive applications that support new funding and payment approaches.
- Incentives need to be sized to the effort and sufficiently large to impact behavior

Area 3: What factors are considered important by the Army and the contractor before entering into a business relationship?

Decision-makers carefully consider the environment, the influences, and the factors that comprise the business case before making a business decision. Focus Group 2 explored and discussed a baseline set of factors that government and industry considered critical to understand before entering into a business relationship. While some of the factors lend themselves more to determination and influence by either government or industry, both considered the factors important in their impact on the formation and outcome of the business relationship.

These factors are central to defining the "procurement business case." For the government, the factors are key decision points used in crafting the acquisition and contract strategy for the procurement. For the contractor, they go initially to the "bid decision" and then price, performance commitments, and other terms and

conditions they are willing to propose in entering into a business relationship with the government. They include the following:

Requirement	*Acquisition Phase*	*Primary Incentive Areas*
Size	*Contract Type*	*Program Stability*
Program/Contract Flexibility	*Competitive Environment*	*Entry Barriers*
Performance History	*Future Effort*	*Corporate Strategy*
Inherent Risk	*Industry Dynamic*	

Unique knowledge may drive a differing assessment of a given factor. Surfacing and discussing these differences provides an opportunity to improve the understanding of the business case and to provide the insight necessary for understanding each other's motivation. This understanding can logically lead to considering which contractual incentives are needed by industry and can be offered by government to meet the goals and objectives of both parties.

Area 4: What innovative applications of existing contractual incentives can be developed to improve the likelihood of successful contractor performance? What new and innovative contractual incentives can be developed to improve the likelihood of successful contractor performance?

A broad spectrum of contractual incentives is available to the contracting workforce in crafting effective business relationships. Some are traditional and some are new approaches to existing arrangements. Others are new, innovative, and reflect an understanding of the increasingly rapid pace of change in the structure of both the government and commercial marketplaces. These contractual incentives achieve their goals through the operation of the contract structure and through an acquisition or management approach or strategy. The final incentive strategy may also reflect a combination of several different approaches.

Building upon the contractual incentive baseline documented in Phase I, Focus Group 1 employed interactive decision-support technology (collaborative software) to explore various incentive situations and possibilities. Attendees used individual computers to vote (on a scale of one to ten) for the following:

- How much impact a candidate incentive would have on the contractual process and business relationship;
- The impact a candidate incentive would have if it were implemented successfully; and
- How much difficulty the incentive would face in implementation.

Several incentives viewed as having the highest impact were also voted the most difficult to implement. However, there were also contractual incentives that were considered to have high impact and relative ease of implementation. These included:

- *Award-term contracting*—the idea that contract length can be shortened or extended, based on attaining or surpassing specified results metrics, and
- *Output Contracting*—defining deliverables as outputs (for example, copies rather than copiers).

The cross section of contractual incentives from the Phase I study, the Phase II group efforts, and additional research are reflected in a *Compendium of Contractual Incentives* (Appendix B), intended as a baseline guide for the contracting and acquisition community in the development and crafting of more effective business relationships.

Area 5: What changes in the process for the application of contractual incentives within the business relationship can be developed to increase effectiveness?

Business relationships must be structured in a way that maximizes the chance of a successful win-win partnership. Not only must the relationship deliver to the government customer what is required, but also it must appropriately balance risk between the government and the contractor. Additionally, it must appropriately

reward the contractor for assuming the performance risks. Contracts must not be structured to offer incentives for contractors to behave in ways counterproductive to the purpose of the contract.

Traditionally, the government team developed and implemented an acquisition strategy for a competitive or sole source procurement that may or may not have included meaningful industry involvement and, if not, consequently lacked real insight to the business case and the industry issues.

As acquisition reform gained effectiveness, earlier teaming of all parties interested in the success of a procurement, including the contracting community, became a more common occurrence. In fact, today it is a hallmark of a successful procurement.

But early involvement alone is not sufficient for success. Rather, the process of early involvement creates a cooperative atmosphere that greatly influences the probability for success. A successful business relationship must include a clear understanding of the goals of the procurement and the motivations of all interested parties associated with the procurement. Further, for contractual incentives to be most effective, there must be mutual understanding of:

- The influences previously addressed that affect or can affect the business relationship;
- The factors relevant to planning the procurement; and
- The factors a contractor considers in determining whether they will participate in the procurement.

This study recommends the implementation of a new process—*Factor Collaboration*SM—the joint assessment of the influences and factors that impact the structure of a potential business relationship. It promotes and supports a "meeting of the minds" with respect to the procurement and its business case in these important areas:

- The requirements
- The influences and factors
- The motivation
- The most effective incentive

Factor Collaboration SM "forces to the surface" critical information necessary for the construction of a successful business relationship. It incorporates sound business practices with an innovative approach to constructing successful business relationships. Through the disclosure and sharing of information essential to the planning and execution of a successful business relationship, *Factor Collaboration*SM can increase the likelihood that contractors will deliver results to government customers successfully.

This process should be an integral part of the contracting process throughout the Army contracting and acquisition community. *Factor Collaboration*SM can effectively support both sole source and competitive procurements.

Area 6: How can the Army improve its ability to incentivize successful contractor performance?

Changing the culture is essential to achieving the gains in efficiency and effectiveness from improvements in the application of contractual incentives. Improving training and demonstrating positive results in practice can help to change the culture. These changes must take place not only in the schoolhouse, but also as part of the contracting process used by the professional workforce operating in the program offices and in the field.

The development and deployment of a web-based incentive decision tool can enhance the ability of the Army and industry to construct more effective business relationships. This tool would use an expert system that is based upon the *Factor Collaboration* SM process and the *tused deut Are of a poten participf0 -curemetrating peffective business relatio*

web-based, automated tool. An expert system can provide a shared, multi-dimensional understanding of the risk and the business case.

Figure 1 below displays a simplified decision model that forms the basis for the expert system model. The "decision points and discriminators" include the characteristics of the procurement and the results of the *Factor Collaboration*SM process that form a major part of the business case. The "decision rules and judgements" consist of the regulations, guidance, and a framework of decisions that are used in the contracting process. The "strategic dimension" defines the goal and the "realization dimension" accounts for the difficulty and feasibility of achieving the goal. Based on the alternatives, these factors are processed through an algorithm and a resulting "set of solutions" is presented.

The solution should by no means be a point solution. Instead, a set of solutions should be provided. The contracting officer then wields a set of alternatives from which to choose the best contractual incentives for this particular procurement, as well as the reasoning and logic trail for explaining the alternatives to the prospective contractors and the government acquisition team. The use of sound business judgement and common sense remains a requirement.

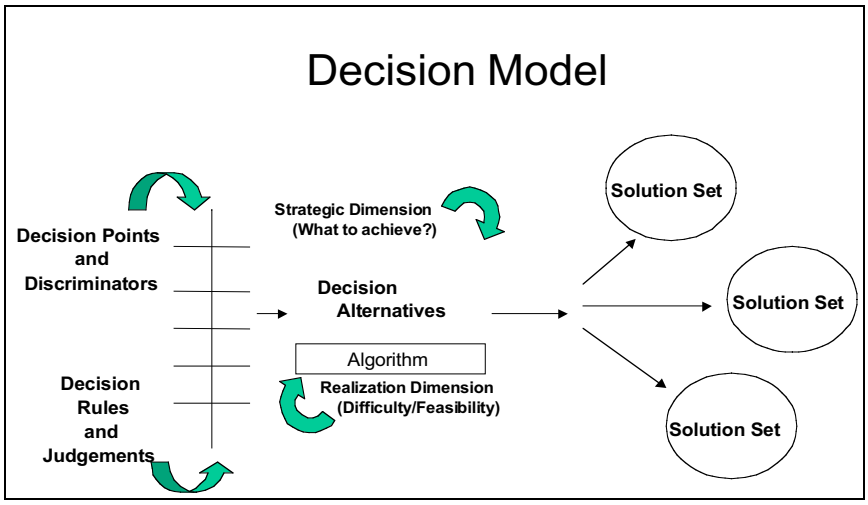

Figure 1 – CIAM Decision Model

FINDINGS

The findings from this study are:

1. Shared Common Goals

- The government and the contractor generally share a common set of top-level goals. These include the achievement of customer satisfaction, program stability, and positive program and financial performance.
- In successful business relationships:
  - the parties to the relationship achieve their individual and shared goals and objectives through the successful planning, execution, and delivery of their respective responsibilities; and

- the degree to which the parties achieve success depends upon the ability to find mutually derived solutions.

2. Key Prerequisite: Understand the Business Case

- The procurement business case consists of a set of overlapping events, processes, factors and influences.
- Mutual understanding of and insight into the business case is a prerequisite for successful application of an incentive strategy that properly focuses on the areas of performance interest.
- Business relationships built upon strategies not based on this insight risk implementing contractual incentives that incentivize the wrong behavior and fail to successfully deliver the requirement.

3. Traditional Contracting Process Lacks Necessary Collaboration

- The traditional contracting process may not result in win-win solutions because it lacks the collaboration required to mutually achieve program goals. Traditional approaches to the application of contractual incentives must change, from the culture instilled in the schoolhouse, to practical application in the field.

4. Changing the Culture is Essential

- Changing the culture and providing improved training are essential to achieving the gains in efficiency and effectiveness from improvements in the application of contractual incentives. Improved training and demonstration of positive results in practice can help to change the culture. These changes must take place not only in the schoolhouse, but also as part of the contracting process used by the contracting and acquisition workforce.
- We must be ready to accept some failures if we are going to innovate. We should reward people who are innovative, even if they fail. Supporting the workforce in overcoming the natural fear of failure by rewarding innovation even if it results in failure is important for success.

5. Open Communication Leads to Mutual Understanding of the Business Case

- Business relationships are affected by cultural, structural, statutory and regulatory, financial, contractual, programmatic, and political influences.
- Decision-makers carefully consider the environment, the influences, and the factors that comprise the business case before a business decision is made. Openly discussing these differences provides an opportunity to improve mutual understanding of the business case and provides real insight to each other's motivations. This can logically lead to consideration of effective incentives needed by industry and offered by government to meet the goals and objectives of both parties.
- A balance of risk and reward is required for a successful business relationship. Based on partnering, communication and trust, incentives can be applied that demonstrate to the contractor that its objectives can best be met by successfully meeting the government's objectives. This requires common sense, sound business judgement, and an enlightened approach.
- *Factor Collaboration*[SM] can be a useful and consistent mechanism to jointly assist the Army and industry to achieve a more comprehensive understanding of the overall business case. With increased insight, contractors will be more likely to meet government customer requirements.

6. Knowledge Management is Critical

- One of an organization's most valuable assets is its knowledge base. It is also the hardest to manage. Connecting the contracting workforce with the information and tools they need is essential. New approaches, such as development and deployment of a web-based incentive application decision tool,

combined with an understanding of the financial aspects of incentives, can improve the effectiveness of the contracting and acquisition workforce.

- Pushing the changes and new concepts from the successes of acquisition reform to the front lines of the contracting workforce is a necessity. The evolution of the vision for change into practical application and training must be the contracting and acquisition professional's everyday approach to defining and executing successful business relationships.

7. A Composite Approach in Both Training and Application is Necessary

This is necessary to provide a solid foundation for change across the contracting and acquisition community. It is accomplished through an implementation and support system that includes the following:

- Implementing guidance on the development and application of contractual incentives.
- An automated, web-based, incentive decision tool to support the contracting workforce.
- Opportunities for sharing and collaboration through an embedded lessons learned process.
- A leadership and workforce commitment to change at all levels of command.
- A strong framework of directives and instructional information.
- Established support mechanisms to assist the workforce in development and use of contractual incentives and the construction of better business relationships.
- Collaborative planning and management with industry.

NEXT STEPS

This study is the first step in a major change process within the Army Contracting and Acquisition Community.

Recommendations

1. Implementation Planning and Roadmap (PARCs and Senior Acquisition Leaders)

The Deputy Assistant Secretary of the Army (Procurement) should lead a *limited series of fast-reaction joint planning sessions* to develop a roadmap that incorporates the results of the "Innovation in Contractual Incentives" study with other similar and ongoing planning and initiatives within the Army acquisition and contracting community.

2. An Incentive Application Decision Tool Could Form the Basis of an Expanded Knowledge Management System

An incentive application decision tool could form the initial building block of a comprehensive *knowledge management* system. Developed and deployed in phases, an expert system, based upon the *Contractual Incentives Application Model*[SM] and *Factor Collaboration*[SM] process discussed in this study, can be a very effective knowledge leveraging tool. Effective not only in providing the improved training essential to achieving improvements in the application of contractual incentives, but also in supporting a change in the culture.

The concept is simple. Each contract awarded further defines the rules and supports an update of the knowledge base. The model captures the outcome of the contracting process for each procurement considered and documents additional information that becomes part of the body of knowledge that can be used by others. The result is a consistent and documented process that over time improves not only itself, but also the skills and decision-making of the contracting workforce.

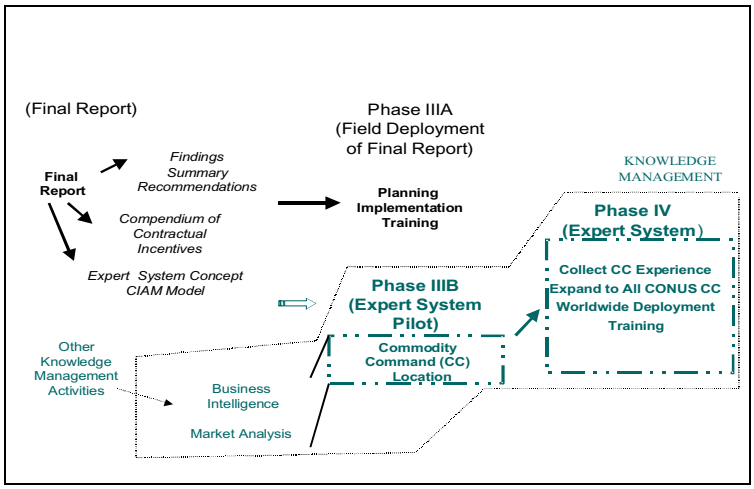

Figure 2 – Phased Implementation Approach

The deployment concept envisions a subsequent Phase III, as shown in Figure 2.

Phase IIIA is the planning, implementation, and training associated with the final report. This phase further develops the Compendium of Contractual Incentives (Appendix B) into a more comprehensive document incorporating the results of this study and other Army initiatives based on the roadmap developed immediately upon conclusion of this study and described above. Distribution is Army-wide.

Phase IIIB begins the development of the expert system based incentive application decision tool, in the following sequence:

1. Gather the "experts' knowledge"
2. Define an approach to the problems
3. Define the business rules and regulations
4. Tap into existing data
5. Derive an online interactive expertise solution

Initial development and deployment occurs at a single AMC Commodity Command (CC). The tool is deployed as a pilot system and may be linked with other *knowledge management* initiatives already in development. The initial pilot system includes specific "expert knowledge" associated with the type of procurement accomplished at that commodity command (e.g., systems vs. installation). The data from successive procurements at the pilot location is incorporated into the model. The tool is then deployed at other commodity commands, each offering its specific procurement expertise. Deployment is then accomplished throughout the Army incorporating the "body of knowledge" developed to date.

Assessment of factors and consideration of the influences affecting the business relationship can be brought together and highlighted more efficiently in this web-based, automated tool. As an expert system, the tool can provide a shared, multi-dimensional understanding of the risk and the business case. This phased approach could provide the government and the contractor with a comprehensive, consistent, and understandable framework to develop a solid understanding of the business case as a starting point in crafting sound and effective business relationships.

3. Draft Policy and Procedures For Use of an Incentive Application Decision Tool

A decision to deploy the tool requires the development of policy and procedures for its use by the workforce. This would include a description of the concept, an outline of the processes supporting the tool, and a time phased schedule for its deployment.

4. Develop and Implement an Outreach Plan for the Study Results

Visibility in Implementation Maximum visibility and emphasis of the study results and recommendations is essential so they are not viewed "casually" or as "just another initiative." Demonstration of the tool and concrete examples of its success can best be accomplished through the acquisition roadshow process.

Maximize Use of Electronic and Print Articles Maximum advantage should be taken of the electronic and print media available. Use of the Army Acquisition Reform website and other appropriate websites should be used as should all the available print media relevant to the subject matter.

Establish an Incentive Application Decision Tool Website After development and deployment, host the tool on a website and collect comments, suggestions, and post lessons learned from its use.

Spotlight the Study Results and the Incentive Application Decision Tool Concept at Major Conference Events Take advantage of the audience available at major contracting and acquisition events, such as at the NCMA World Congress (April 2000) and the next DoD Procurement Conference. Depending on the implementation and timing of Phase IIIB, demonstration scenarios, training modules, and descriptions of the tool and the underlying expert system based model (the CIAM) could be available to conference attendees.

5. Develop Web-based and Resident Training Modules

A set of professional-level training modules for broad use within the Army, and later throughout the DoD, would be required to institutionalize the results of this study and to integrate the incentive application decision tool into the contracting and acquisition process. These training sessions would provide the skills necessary to achieve quick success in the application of the tool throughout the workforce.

It is important that this initiative be universally understood and accepted by the workforce. Further, these modules would be available to industry for use and deployment within their organizations. Joint industry and government training should be considered after initial deployment within each organization.

Chapter One: The Study

SUMMARY

The Army, under the leadership of Dr. Kenneth J. Oscar, Deputy Assistant Secretary of the Army (Procurement), commissioned a two phase, "Study of Innovation in Contractual Incentives," to improve the Army's ability to construct more successful business relationships through effectively applying contractual incentives. Phase I developed a contractual incentive baseline for further research. Phase II explores more innovative applications of contractual incentives and proposes new processes and models to leverage the acquisition workforce in their efforts.

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Phase I comprised a search of books, periodicals, association publications, reports and observations; interviews with program and industry managers; and comments and insights from experts in the field of contracting and acquisition. The Army also solicited comments from industry for the Phase I Study, through the *Commerce Business Daily* (CBD), and from Army mid- and junior-level acquisition workforce professionals, through the Army Acquisition Reform website. The Phase I Study discussed the following major areas:

- The Dynamic Nature of the Contracting Environment
- Motivation as the "Cornerstone of the Business Relationship"
- Marketplace Barriers and Solutions
- Factors to Consider in Developing Effective Incentives
- Concepts and Initiatives in Practice

PHASE II – THE SEARCH FOR INNOVATION

Phase II was an extensive effort incorporating the Phase I baseline and comments as a starting point for further exploration and discussion of the subject. Phase II delivers to the Army real insight to opportunities for improving the success of their business relationships.

Objectives

The development of the baseline and completion of the cross-section of contractual incentives in Phase I provided a "jumping off point" for Phase II, which had two primary objectives:

- Develop new and innovative applications of contractual incentives to increase the opportunity for contractors to successfully deliver the required performance;
- Improve the ability of the contracting and acquisition workforce to successfully apply contractual incentives within the Army's business relationships with its contractors.

Approach

The Phase II effort centered on the results from two focus group sessions, comprising senior contracting and acquisition leaders from government and industry.[2] The goal of these sessions was to obtain their insights and advice on improving how the Army provides incentives in its relationships with contractors; *and* gain a mutual respect for the complexity of the environment in which a business case is developed and decisions are made.

The effort also incorporated results from the Phase I field and industry comments, solicited through the *CBD*, the Army Acquisition Reform website, and a study website created to collect comments on the findings and issues raised within the study to date.

Focus Group 1

Focus Group 1[3] examined several *influences* impacting the overall business relationship from a variety of perspectives. Based on these discussions, the group proposed candidate contractual incentives for consideration. The group then used collaborative software to vote for the degree of impact, on a scale of one to 10, an incentive would have if it were implemented successfully, along with how difficult the incentive would be to implement.

This initial discussion was in part captured in a preliminary matrix. This preliminary document balanced the acceptance of risk in the business relationship with the opportunity to earn more compensation for acceptance of that risk.[4] At the same time, this matrix emerged as a possible decision tool to assist the contracting and acquisition workforce in improving its ability to construct successful business relationships.

Focus Group 1 discussion results were posted to the study website created to support ongoing analysis and comment of the effort. The site was open to comment from any forum. The results from the website were used to develop the agenda and content for Focus Group 2.

Focus Group 2

Building on the results of Focus Group 1 and the discussion of influences affecting the business relationship, this session next examined the *factors* that industry and government consider critical when entering into a business relationship. Second, the group proposed additional contractual incentives, similar to Focus Group 1, and discussed how they viewed the applicability of the incentives when examined in light of these factors.

Factor Collaboration[SM] and the *Contractual Incentives Application Model*[SM]

After incorporating the focus group results, further efforts to develop the matrix into an effective incentive application decision tool led to the conclusion that it lacked the multi-dimensional aspects and ease of use required to be effective. However, the time spent on the matrix *did* lead to two innovative developments[5] and a different approach to the construction of a tool: the *Factor Collaboration* [SM] (FC) process and the *Contractual Incentives Application Model* [SM] (CIAM).

Factor Collaboration[SM] is the joint government and contractor assessment of the influences and factors that impact the structure of a potential business relationship. It promotes and supports a "meeting of the minds" with respect to the procurement and its business case.

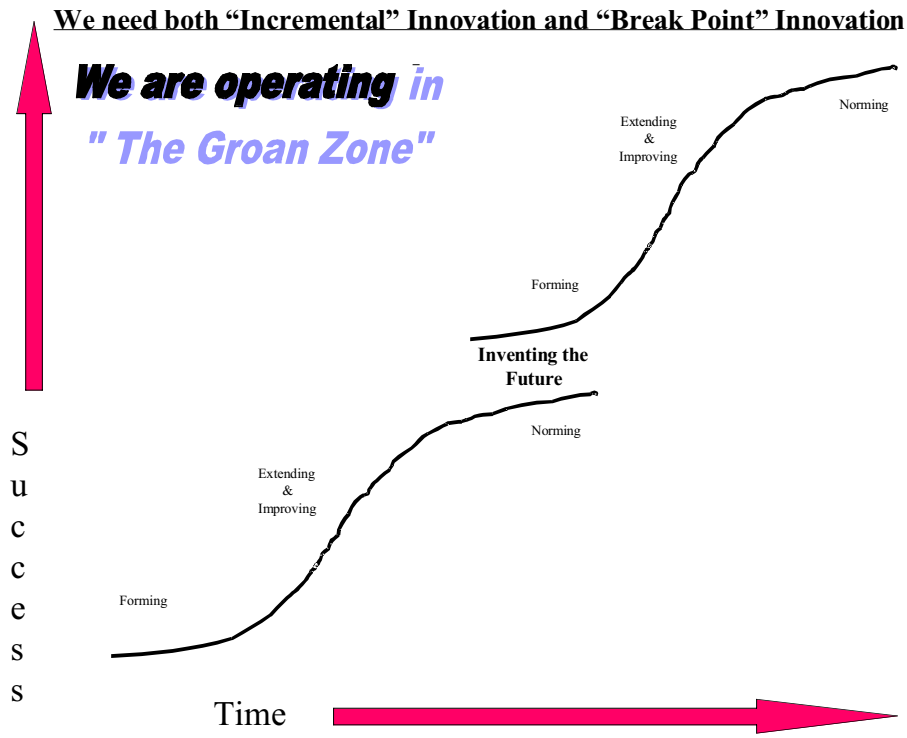
The *Contractual Incentives Application Model* [SM] forms the basis for an expert system[6] and is central to the incentive application decision tool. Incorporating FC, the model forms the basis of an effective, knowledge-leveraging tool for the acquisition workforce.

The Innovation Curve

Focus Group 2 discussed how to capture the successes of Focus Group 1 and keep the momentum moving, before beginning Focus Group 2. This discussion was important because in many initiatives that evolve from a baseline of activity or understanding, it is not uncommon for the innovation to stall or otherwise slow down.

Working with a brief overview of the concepts of George Land in his book, *Breakpoint and Beyond*, [7] the group discussed these concepts as a point of reference for understanding the approach to the second session.

The concept of innovation as both "incremental" and "revolutionary" (breakpoint) is represented in Figure 2. The results we hoped to achieve with Focus Group 2 were dependent on the understanding, by the participants, of this concept and where we were on the curve—in our case, the "groan zone". The "groan zone" marks the area of the curve where incremental (marginal) increases in innovation have begun to decrease and in fact may begin to turn downward. The challenge is to "jump" or shift on the curve (the breakpoint) to the next level of innovation and begin the innovation process again. In Focus Group 2, our objective was to move from "incremental innovation" to "breakpoint innovation," creating a link with the future, and identifying real areas of innovation in the application of contractual incentives.


We need both "Incremental" Innovation and "Break Point" Innovation
We are operating in
" The Groan Zone"
Norming
Extending
&
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Chapter Two: Focus Areas

Traditional approaches to the application of contractual incentives need to change, from the culture instilled in the schoolhouse, to practical application in the field. Simply stated, incomplete understanding of the business case has resulted in business relationships whose basic terms and conditions encourage contractor behavior different from the behavior desired.

Changing the culture and providing the training to improve the ability of the workforce to craft more effective relationships is *as important* as improving the effectiveness of targeted contractual incentives. A composite approach to change in both training and application is necessary.

The study covered all six of the following areas. The two focus groups, within their limited timeframe, considered Areas 1, 2, 3, and 4, focusing on the definitions, influences, factors, and application of incentives.

Area 1: What is a "contractual incentive?"

Area 2: What *influences* impact the creation and execution of a business relationship between the Army and its contractors?

Area 3: What *factors* are considered important by the Army and its contractor before entering into a business relationship?

Area 4: What innovative applications of *existing* contractual incentives can be developed to improve the likelihood of successful contractor performance? What *new and innovative* contractual incentives can be developed to improve the likelihood of successful contractor performance?

Area 5: What changes can be developed in the *process* of applying contractual incentives within the business relationship to increase effectiveness?

Area 6: How can the Army improve its *ability* to incentivize successful contractor performance?

AREA 1: WHAT IS A CONTRACTUAL INCENTIVE?

Summary

Many people have their own understanding of the concept of incentives. To ensure a consistent baseline from which to discuss, explore, and assess the multi-dimensional aspects of the subject, the group developed a consensus definition for contractual incentive.

Contractual incentives must be considered and selected within the context of a sound understanding of the business case surrounding the procurement. They must be applied in a manner consistent with and supporting the total business process.

Definitions

Contractual Incentive, as used in this study, consists of both contract incentives, and incentive relationships and strategies.

Contract Incentive refers to the monetary or non-monetary structural motivators, embodied in or arising from the terms and conditions of the contract, that influence the behavior of the buyer and the seller toward accomplishing desired contractual outcomes.

Incentive Relationship/Strategy refers to those factors that influence the motivation of the buyer and the seller and directly impact their approach to the total business process.

Total Business Process includes requirements generation and definition, acquisition strategy and business case considerations, the award process, and post-award performance—all focused on attaining desired outcomes.

AREA 2: WHAT INFLUENCES ACT UPON THE CREATION AND EXECUTION OF A BUSINESS RELATIONSHIP BETWEEN THE ARMY AND ITS CONTRACTORS?

Summary

A business relationship provides a mutual forum for the interaction of the goals and the influences that affect the achievement of a desired objective. In a successful business relationship, the parties achieve their individual and shared goals and objectives through the successful planning, execution, and delivery of their respective responsibilities.

Since this study focuses on the contractual relationship between the Army and its existing and potential contractors, it is necessary to understand these influences as they act upon the development and execution of this relationship. Focus Group 1 discussed these influences extensively; their observations in each of the following areas are presented:

- *Structural*
- *Financial*
- *Programmatic*
- *Contractual*
- *Regulatory and Statutory*
- *Political*

Key Observations

Key observations include the following:

- The government perceives that profits earned should be limited at the cost of poorer results.
- Understanding the motivation of the parties is critical to targeting incentives. Not doing so results in a poor incentive structure, a problematic relationship, and undesired contractor behavior.
- Leadership must be committed to change, understand why change is necessary, and drive the necessary change through all levels of the Army.
- Changing the culture and the training is necessary to changing the approach.
- Innovation should be rewarded even if it results in failure.
- Expectations of company performance by the capital markets are a critical factor in any decision to enter into a business relationship.
- Aligning the motivations of the subcontractor with the goals of the prime contractor, and its government customer, is critical if the incentive structure is to be successful.
- A perception exists that regulations continue to drive what can be done. The process for approving deviations is lengthy and creates missed opportunities for innovative changes.
- Program instability in funding and requirements increases risks, and affects "bid-no-bid" decisions, as well as the ability to make long-term commitments with suppliers.
- Every successful program is the result of information-and-risk sharing, based on common motivations of the parties and a sense of shared destiny in the results.
- Government accounting must be able to accommodate innovative incentive applications that support new funding and payment approaches.
- Incentives need to be sized to the effort and sufficiently large to impact behavior.

Cultural Influences Affecting the Business Relationship

Cultural influences include the beliefs held by industry and government regarding the operation of their business relationships. Many of these beliefs result from training and from specific patterns of business behavior that become ingrained over time in the contracting process. Key perspectives in this area include the following.

On the Requirements Process

- There is an increased need for the acquisition community to provide business advice early on in the requirements-generation process. A process for trading off requirements needs to be in place between the warfighter and the acquisition community.
- Relevant sectors of industry, in concert with the warfighters, must be involved in requirements generation to help understand the capabilities and limitations of the technology base.

On Contract Strategy

- Reliance on traditional approaches to incentivize contractors makes it hard to "get outside the box" and foster innovation and the use of new incentive concepts.
- The budgeting and appropriation process precludes program savings from being used within that program. This reduces the savings incentive and is reflected not only in the structure of the contract terms and conditions and application of incentives, but also in the contractor's performance toward *exceeding* program objectives.

On Profit

- Government continues to perceive that profits to be earned on a contract should be limited even at the cost of poorer results.
- Reductions in cost achieved through the contractor's good efforts should reduce the cost to the customer but should not reduce the profit levels for the contractor.
- Incentivizing cost reduction through additional opportunity to earn profit enables contractors to focus on "best price."

On Oversight

- The government's perception that its oversight role restricts innovation because those charged with this responsibility do not view the data or the processes they are examining in light of current acquisition reform initiatives, processes, and methodologies.

On Partnership

- The historically adversarial relationship between government and industry limits opportunities for maximizing improvement in the acquisition process and deriving common solutions that benefit both.
- The government and the contractor must have the opportunity to gain real insight to each other's motivation, to ensure that the goals of both parties are aligned to the maximum extent possible.

On Leadership

- Leadership must be committed to change, understand why change is necessary, and drive the necessary change through all levels of the Army.

On Training and Experience

- Training reinforces business processes and the approach to the business relationship. Changing the culture and the training is necessary to changing the approach.

- The contracting workforce needs to view themselves as "business managers," and broaden the narrow perspective they now have of "contracting," which is derived from existing training.
- When workforce training focuses on following the rules rather than "thinking through the nature of the deal," neither party benefits.
- We must be ready to accept some failures if we are going to innovate. We should reward people who are innovative, even if they fail. Supporting the workforce in overcoming the natural fear of failure by rewarding innovation, even if it results in failure, is important for success.
- Buyers must understand real-world costs, to gain a perspective on what is fair and reasonable. A corollary is the concept of only asking for the cost and pricing information that is actually needed to make a decision.
- We need to provide additional training in the "business issues" area for our program managers and other acquisition disciplines.

Structural Influences Affecting the Business Relationship

Structural influences include the mechanics of the approach to the business relationship and the processes that operate within this relationship. Key perspectives in this area include the following:

On the Requirements Process

- The requirement must be properly defined; the government should focus on defining the output and not the intermediate steps.

On Contract Strategy

- Understanding the motivation of the parties is critical to targeting incentives correctly. A failure to do so results in a poor incentive structures, a problematic relationship, and undesirable contractor behavior.
- Claiming to adopt commercial practices, yet being unable to resolve issues associated with access to commercial financial records, fuels distrust among commercial firms. This creates a lack of support for what might otherwise be a successful contracting approach.

On Funding

- Program funding instability, driven by the annual budgeting process, adds additional risk and is often a disincentive to doing business with the government.
- Bringing third party investment money into business relationships may support additional business opportunities that might otherwise not be considered because of funding limitations, originating with either the government or industry.

On Subcontracting

- Aligning subcontractor motivations with the goals of the prime contractor and its government customer is critical if the incentive structure and the business relationship are to be successful.

On Partnership

- Communication between government and industry, and within their respective business structures, directly impacts the ability of governmental incentives to influence contractor behavior.

On Outside Influences

- Outside influences often drive program direction or contracting strategy and execution in directions counter to approved program goals and objectives.

- Expectations of company performance by the capital markets are a critical factor in any decision to enter into a business relationship.

Statutory and Regulatory Influences Affecting the Business Relationship

This area includes restrictions, mandates, or guidance that affect the structure and execution of the business relationship. Key perspectives in this area include the following:

On The Regulatory Process

- There is a clear perception that regulations drive what "can" be done. Processes to address deviations from regulations are unwieldy and time-consuming. This results in missed opportunities for implementing innovative changes and approaches to contracting situations.
- Unique regulatory requirements imposed in order to do business with the Army create entry barriers for new industry and new technology to become part of the Army technology base.
- The current competitive environment precludes the ability to conduct detailed and timely discussions with each offeror in a competition to establish a "tailored incentive after award" crafted to motivate that particular offeror.

On Cost and Pricing Data

- Unjustified requests for cost and pricing data (certified) or other data (uncertified) are an obstacle to increased supplier participation in the government marketplace

On Past Performance

- Assessing and documenting past performance is a crucial element of contract administration. As well, the "chain of command" should have the confidence to back up field judgments of past performance made in accordance with guidelines, judgements, and common sense.

Financial Influences Affecting the Business Relationship

These factors include impacts to the business relationship from the appropriation process, and the internal process of allocating funds within the corporate industry and government management process. Key perspectives in this area include the following:

On Corporate Strategy

- The opportunity for future business resulting from the current contract is a major consideration for most companies.
- The uncertainty associated with annual funding of programs drives industry bid decisions regarding the ability to recover up-front investments.
- Contractors are less inclined to make investments in long-term cost-reduction opportunities, due to the uncertainty in the return on these investments.
- The long-term opportunity for continuing profit can be a major influence, given the reduced defense business opportunities.
- The most effective incentives today seem to be those that can influence the next quarter's earnings statement. The long-term business incentives do not motivate either the government or the contractor to perform better near-term, when rewards are realized only in the long-term.

On Funding

- Cash flow is a strong incentive. The government needs to recognize this influence on corporate decision-making and address it in the business relationship.

- The budgeting and funding process in the Department of Defense, as constrained by Congress, prevents or inhibits the making of long-term, firm promises of the kind that world-class customers can make to their suppliers.
- Government accounting must be able to accommodate innovative incentive applications that support new funding and payment approaches.

On Communication

- Every successful program is the result of a good relationship, based on common motivation of the parties and a sense of shared destiny in the results.

Contractual Influences Affecting the Business Relationship

These factors include the impacts on the contract agreement (structure) and the specific contractual relationship. Key perspectives in this area include the following:

On Contract Strategy

- Incentives should be matched to the scope of the effort. Consideration should be given to the impact of the incentive and its relevance to the total price of the contract or the effort. Incentives must be sufficiently large enough to affect behavior.
- The focus upon the instant contract makes it difficult to shape an effective incentive strategy or approach for the entire acquisition program.
- Government and industry often do not share a common understanding of risk and of each other's business case.
- It might be more effective to structure a contractual relationship based on risk versus profit rather than risk versus contract type.
- Incentives and profit can be supplemented by non-traditional forms of reward including “outside the contract” incentives.
- Consideration is more than monetary; the government should consider non-monetary factors in making award decisions. One way is to move beyond traditional requirements and relationships, and look at the underlying results government is trying to accomplish. Considerations can include exchanges of intangible items that have value in the marketplace, rewarding contractor innovation and capitalizing on contractor skills or capabilities, and providing opportunities that otherwise might not have been available.

On Source Selection

- Rather than rewarding the innovative company that initiates a new idea, the government tends to limit innovative thinking by assuring that everyone has an equal chance to pursue someone else's good idea.
- A strategy to “award without discussions” inhibits interaction and consequently the ability to tailor the best incentive arrangements.

On Subcontract Management

- Contract incentives often do not reach the subcontractor level.

On Communication

- There should be more use of Alternative Disputes Resolution (ADR) in resolving problems and issues within the business relationship. Often when disagreements arise, the default position is litigation versus principled resolution.

Programmatic Influences Affecting the Business Relationship

These include influences that affect the execution of the program management plan. Key perspectives include the following:

On Funding

- Funding profiles for development contracts are budgeted, based on government estimates made with historical models that often are not realistic or representative of current thinking on acquisition strategy.

On Training

- Program decision-makers at all levels need to be versed in understanding risk management philosophy and techniques.

Political Influences Affecting the Business Relationship

These include the impacts of congressional as well as corporate government and industry actions on the business relationship. Key perspectives in this area include the following:

- Perception by some members of Congress that partnership means government exploitation by industry.
- The spending of public funds is by definition a political process. The involvement of Congress, the administration, and the contractor community all assure that many of the budget decisions will be made for reasons other than military requirements or program efficiency.

AREA 3: WHAT FACTORS ARE CONSIDERED IMPORTANT BY THE ARMY AND THE CONTRACTOR BEFORE ENTERING INTO A BUSINESS RELATIONSHIP?

Summary

Decision-makers carefully consider the environment, the influences, and the factors that comprise the business case before making a business decision. Focus Group 2 explored and discussed a baseline set of factors[8] that government and industry considered critical to understand before entering into a business relationship. While some of the factors lend themselves more to determination and influence by either government or industry, both considered the factors important in their impact on the formation and outcome of the business relationship.

These factors are central to defining the "procurement business case."[9] For the government, the factors are key decision points used in crafting the acquisition and contract strategy for the procurement. For the contractor, they go initially to the "bid decision" and then price, performance commitments, and other terms and conditions they are willing to propose in entering into a business relationship with the government. These include the following:

Requirement	*Acquisition Phase*	*Primary Incentive Areas*
Size	*Contract Type*	*Program Stability*
Program/Contract Flexibility	*Competitive Environment*	*Entry Barriers*
Performance History	*Future Effort*	*Corporate Strategy*
Inherent Risk	*Industry Dynamic*	

Unique knowledge may drive a differing assessment of a given factor. Surfacing and discussing these differences provides an opportunity to improve the understanding of the business case and to provide the insight necessary for understanding each other's motivation. This understanding can lead logically to considering which contractual incentives are needed by industry and can be offered by government to meet the goals and objectives of both parties.

Business Case Factors

The factors presented here reflect a baseline from the groups' discussions. The factors that lend themselves to influence by the government are essential to planning the procurement and fulfilling the requirement. The factors that are inherently influenced by the contractor are those that guide its corporate planning, decision-making and participation decisions (e.g. bid and no-bid). Together, this spectrum of factors constitutes a major part of the business case.

Requirement

- What is needed and being purchased—systems, spares, base support, services, construction, commercial items, or information technology (IT)—and how it is specified or described.

Acquisition Phase

- The major phase of the acquisition cycle[10] – research and development (R&D), production, or sustainment.

Primary Performance Risk Parameters

- Three main performance parameters targeted by contractual incentives: technical performance, cost, and schedule.

Size

- Relative assessment as a "large" or "small" procurement. For industry, relativity is a function of internal or corporate definitions of size. For the government, it is defined by the Federal Acquisition Regulation (FAR).

Contract Type

- While vehicles such as "other transactions" may be considered, the two major types of contract vehicles of interest here are *fixed price* or *cost reimbursement*.

Program Stability

- Susceptibility to disruptions in funding, schedule, requirements, and political and other support. While the government and the contractor will view basic program stability more or less in the same light, the contractor may also view stability in additional ways, including:
  - The ability to project forward with certainty
  - The stability to develop an efficient supply chain
  - The ability to recover front-loaded costs

Program/Contract Flexibility

This factor refers to the flexibility of the program and adaptable contract vehicles. This can be viewed in a variety of ways, such as:

- Ability of the contract structure to allow for terms and conditions (T&C) to evolve with the program
- Process for how this contract will/can evolve as a result of changes. (An example of this is the opportunity or ability to negotiate a strategic alliance or overarching partnership agreement that includes problem-solving rules. The program is viewed as a whole rather than as specific projects and contracts.)
- The mechanism for the contract change process

Competitive Environment

The government, within the laws that require competition or a justification for its absence, evaluates the opportunities to compete the procurement and the effectiveness of competition in successfully fulfilling requirements. Examples include the following:

- Competition in general
- Ability to structure incentives to maintain contractor efficiency throughout the period of performance
- Assessing the option of introducing competition when a contractor is performing poorly
- In circumstances where there is limited or no competition, incentivizing participation

The contractor evaluates its chances of competing and winning. Issues can include the following:

- The chance of recovering the "costs of competition" and in some instances the "nonrecurring costs of market entry"
- Opportunities for successive, related, or follow-on contracts

Entry Barriers

The government evaluates the marketplace for the goods or services required and assesses the conditions that might adversely affect the opportunities for contractors to successfully compete. With respect to incentives, the degree of incentivization applied may directly affect the number and type of offerors that consider the procurement opportunity.

The contractors assess the obstacles or challenges they face to become a "player" in the procurement. The perceived importance and value of the incentives will determine participation. Examples include:

- Period of performance considerations—time to recoup investment in front-loaded costs
- Relative competitive advantage with respect to costs of performance
- Incentive considerations—sufficient incentive opportunity to be earned to justify an investment by the contractor

Performance History

- The government considers the past performance of the contractor(s) as an indicator of future performance.
- The contractor, in considering this factor, is interested not only in how this assessment will affect its win probability, but also how they are viewed within the industry or marketplace – their competition.

Future Effort

- The opportunity for future contracts for follow-on work, related work to other programs, spares and other support

Corporate Strategy

While the government is concerned with a contractor's approach to the procurement, this area primarily involves the contractor. Areas of importance include the following:

- Impact of the procurement to return on investment (ROI)
- Impact to cash-flow timing
- Impact on market share
- Access or opportunity for access/improvement in technology
- Timing considerations, such as "first to market" advantages
- Supply chain considerations, including maintaining good relationships with suppliers and processes that lend themselves to an advantage for other contracts

Inherent Risk

The government views this factor as an assessment of contractor capability to handle or mitigate the commonly understood areas of risk (cost, schedule, and performance) during the performance of the contract. There are two components: the probability of failure to achieve the desired goals and the consequences of that failure.

The contractor also views this factor within the context of business and market risk. This includes the opportunity costs of investment in this effort, compared to other investments and the costs associated with failure in the marketplace. Business risk also includes such areas as the potential for changes in business base, rates, and inflation during the terms of the contract.

Industry Dynamic

This factor addresses the maturity of the industry area that would be covered by the procurement. The government focus can include assessing the opportunity for participation and the necessity and structure of incentives to attract interest.

The contractor is interested in the opportunity for growth within its industry: Is it increasing? (i.e., in a new and innovative technology area); Has it leveled off; or are opportunities declining?

AREA 4: WHAT INNOVATIVE APPLICATIONS OF EXISTING CONTRACTUAL INCENTIVES CAN BE DEVELOPED TO IMPROVE THE LIKELIHOOD OF SUCCESSFUL CONTRACTOR PERFORMANCE?

WHAT NEW AND INNOVATIVE CONTRACTUAL INCENTIVES CAN BE DEVELOPED TO IMPROVE THE LIKELIHOOD OF SUCCESSFUL CONTRACTOR PERFORMANCE?

Summary

There is a broad spectrum of contractual incentives available to the contracting workforce in crafting effective business relationships. Some are traditional and some are new approaches to existing arrangements. Others are new and innovative, and reflect an understanding of the increasingly rapid pace of change in the structure of both the government and commercial marketplaces.

These contractual incentives achieve their goals through the operation of the contract structure, and through an acquisition or management approach or strategy. The final incentive strategy may also reflect a combination of several different approaches.

Building upon the contractual incentive baseline documented in Phase I, Focus Group 1 employed interactive decision-support technology (collaborative software) to explore various incentive situations and possibilities. Attendees used individual computers to vote (on a scale of one to ten) for the following:

- *How much impact a candidate incentive would have, on the contractual process and business relationship;*
- *The impact a candidate incentive would have if it were implemented successfully; and*
- *How much difficulty the incentive would face in implementation.*

Several incentives viewed as having the highest impact were also voted the most difficult to implement. There were also contractual incentives, however, that were viewed as having high impact yet relative ease of implementation. These included:

- *Award-term contracting—the idea that contract length can be shortened or extended, based on attaining or surpassing specified results metrics*
- *Output Contracting— Defining deliverables as outputs (for example, copies rather than copiers).*

The cross-section of contractual incentives from the Phase I study[11], the Phase II group efforts, and additional research are reflected in a Compendium of Contractual Incentives (Appendix B) intended as a baseline guide for the contracting officer in the development and crafting of more effective business relationships.

Incentive Application and Difficulty Considered

The following figures (Figures 4-6) summarize the group's initial effort. Twenty-six (26) incentives were nominated and then rated. Members voted, on a scale of one to 10, on the *impact* an incentive would have on the contractual process and business relationship if implemented successfully, and how much *difficulty* the incentive would pose in implementation. The incentives were identified based on the anonymous code of the group member and then assigned a number from 1 to 26. The original list is as follows:

structure Contracting
racting
gs Reinvestment
ı Contracting
ıcility Award Fee (pre-negotiation
racting
Definition (examine nature of the
ımercial Products Produced to ements.
location Pricing
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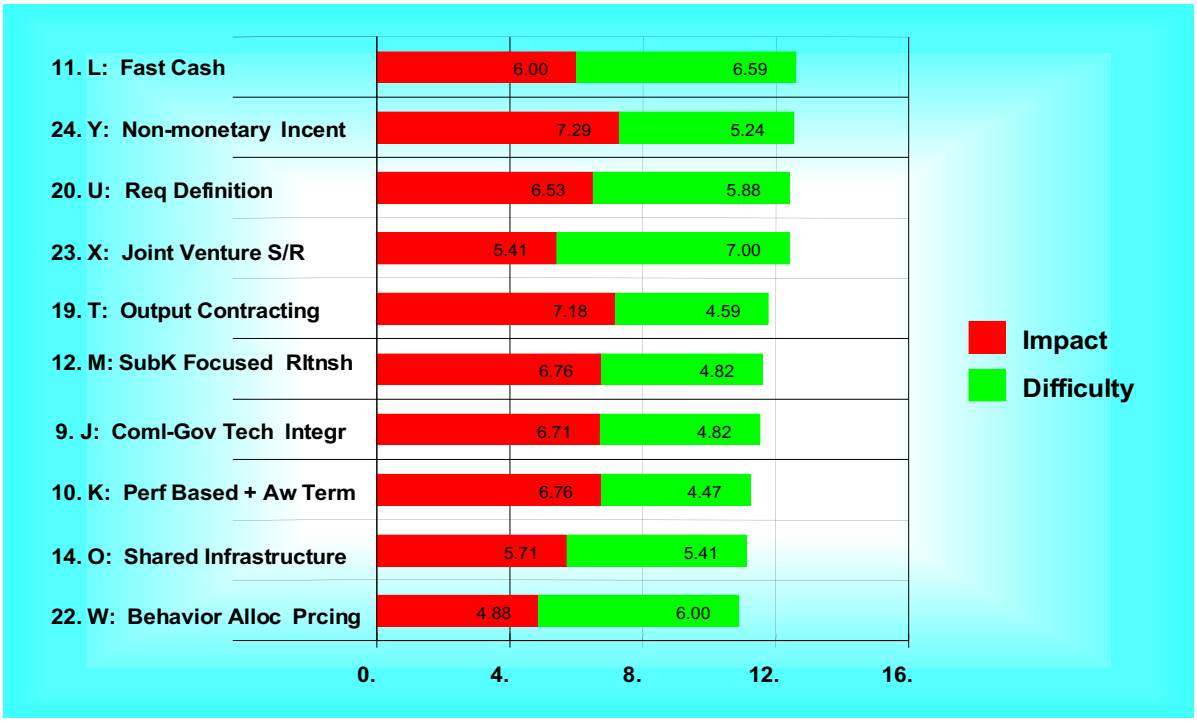

Figure 5

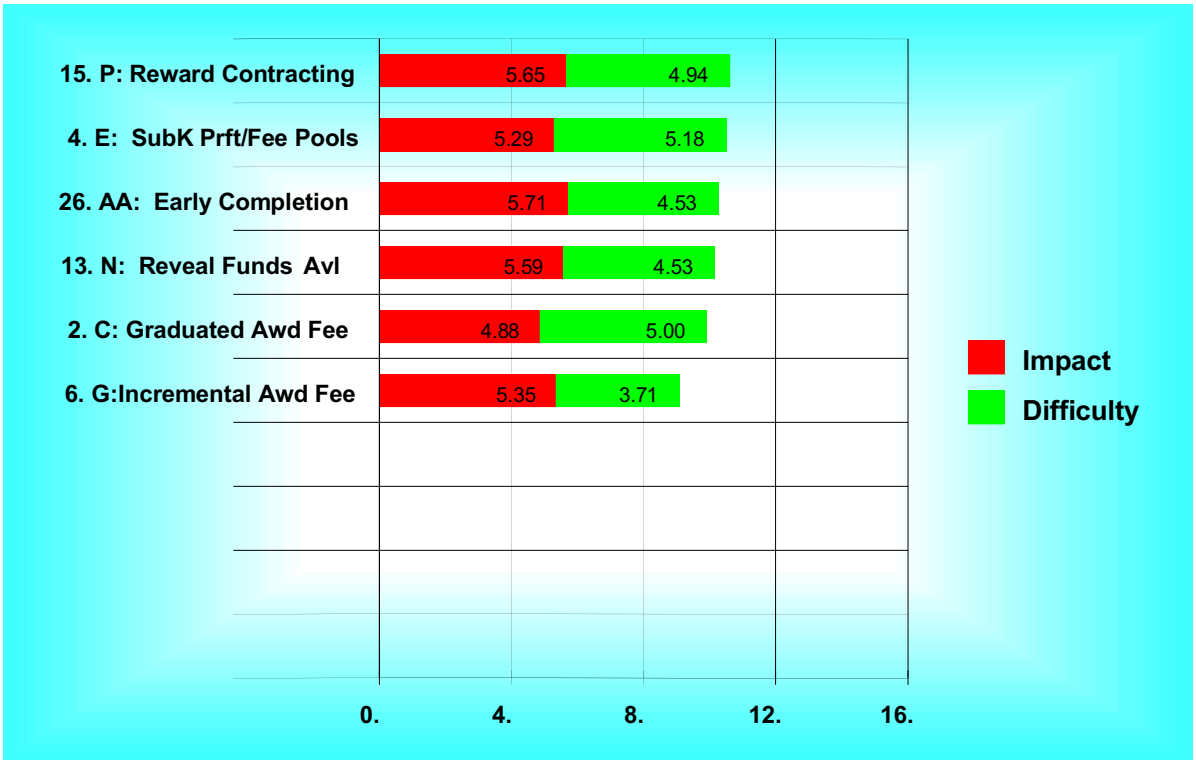

Figure 6

These results were then plotted on a quad chart (Figure 7) with *impact* on the *x*-axis and *difficulty* on the *y*-axis. The farther from the origin, the greater the impact and the greater the difficulty. Those with the greatest impact included incentivizing reduction/control in total ownership costs, life-cycle contracting, award term contracting, non-monetary incentives, and output contracting.

Those with the greatest difficulty included incentives for government organizations, joint-venture shared responsibility, incentivizing reduction/control in total ownership costs, pre-negotiated award fee for all contracts within a contractor facility, and share in savings with reinvestment incentive.

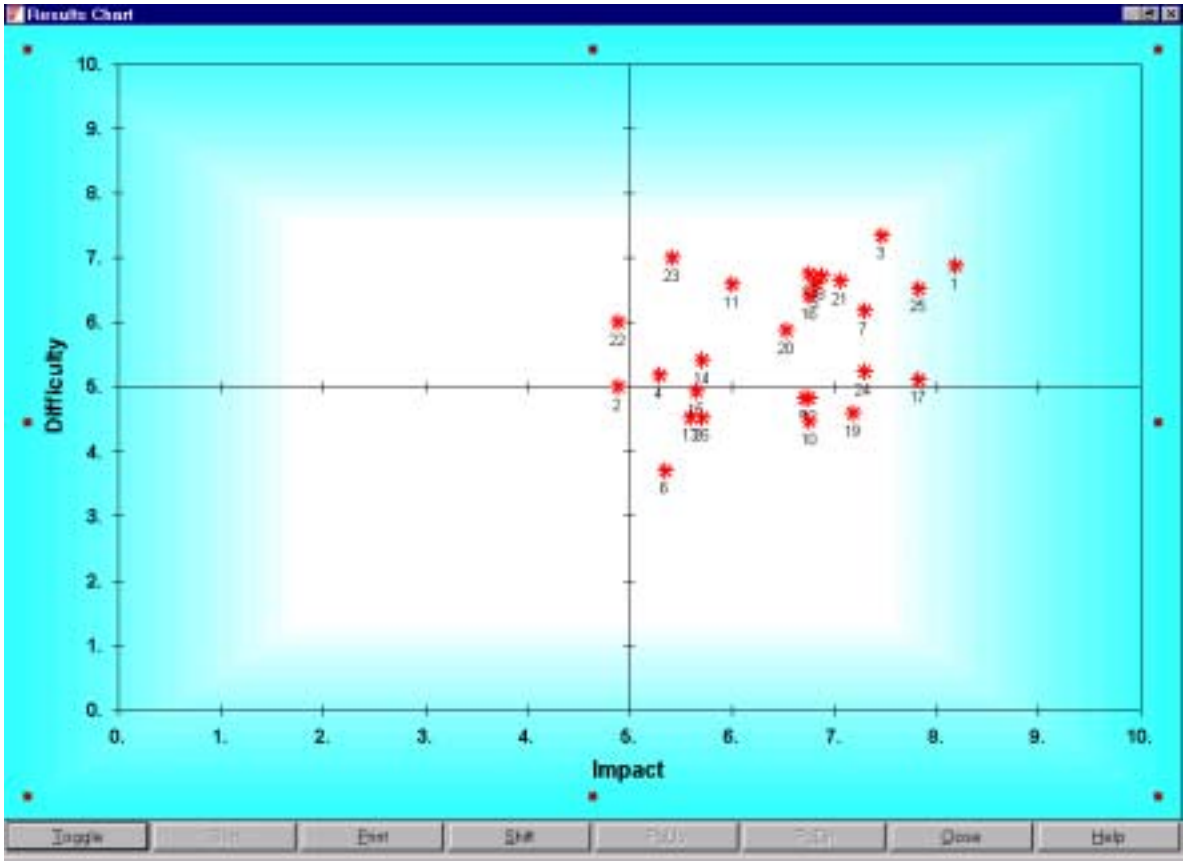

Figure 7 – Quad Chart

Generally, incentives with the highest-perceived impact also were voted the most difficult to implement. These included developing incentives for government personnel and lowering life-cycle costs rather than just initial acquisition costs.

A few incentives, however, stood out as having high impact and relative ease of implementation. Two clear leaders are *award-term contracting* (17) and *output contracting* (19).

Award-term contracting is based on the idea that the contract period of performance can be shortened or extended, based on attaining or surpassing specified results metrics. It tied for the second-highest score in terms of impact and was considerably above average in ease of implementation.

Output contracting refers to writing contracts around outputs rather than the processes and products used to produce those outputs (for example, copies rather than copiers).

The incentives were mostly clustered within a small range, reflecting a general consensus concerning the 26 incentives identified; that is, with the exception of a few outlyers, the impact was great enough to pursue most all incentives, given the relatively small differences in difficulty.

Compendium of Contractual Incentives

The *Compendium of Contractual Incentives* (CCI) captures a baseline list of contractual incentives (Appendix B). It is the intended initial step in the development of a comprehensive incentive-decision tool for use in designing more effective incentive strategies. The compendium has been developed from Chapter 6 of the Phase I report, "Concepts and Initiatives in Practice," the efforts of the focus groups, and continuing research during the study.

Each incentive is presented individually and contains the following information:

1. Title
2. Category Identification (as a "contract incentive" or "incentive relationship/strategy")
3. Description of the Incentive (e.g., characteristics, structure)
4. Target of Use (e.g., applicability based on factors and influences)
5. Elements of Use (notes on the structure and characteristics of the incentive)
6. Pros (benefits of use)
7. Cautions (areas of concern or issues associated with the incentive's characteristics)
8. Examples (of the incentive in use, where applicable)

AREA 5: WHAT CHANGES CAN BE DEVELOPED IN THE PROCESS OF APPLYING CONTRACTUAL INCENTIVES WITHIN THE BUSINESS RELATIONSHIP TO INCREASE EFFECTIVENESS?

Summary

Business relationships must be structured in a way that maximizes the chance of a successful win-win partnership. Not only must the relationship deliver what is required to the government customer, but it must also appropriately balance risk between the government and the contractor. In addition, it must appropriately reward the contractor for assuming the performance risks. Contracts should not be structured to offer incentives for contractors to behave in ways counterproductive to the purpose of the contract.

Traditionally, the government team developed and implemented an acquisition strategy for a competitive or sole source procurement that may or may not have included meaningful industry involvement. If it did not, consequently the team lacked real insight to the business case and the industry issues.

As acquisition reform gained effectiveness, earlier teaming of all parties interested in the success of a procurement, including the contracting community, became a more common occurrence. Today, it is a hallmark of a successful procurement.

But early involvement alone is not sufficient for success. Rather, the process of early involvement creates a cooperative atmosphere that greatly influences the probability for success. A successful business relationship must include a clear understanding of the goals of the procurement and the motivations of all interested parties associated with the procurement. Further, for contractual incentives to be most effective, there must be mutual understanding of:

- *The influences previously addressed that affect or can affect the business relationship*
- *The factors relevant to planning the procurement*
- *The factors a contractor considers in determining whether they will participate in the procurement*

Factor Collaboration[SM] *"forces to the surface" critical information necessary for the construction of a successful business relationship.*

The "Factor Collaboration [SM]" (FC) Process

Background

As the study progressed, we considered an incentive matrix (Appendix C) that related the influences (indirectly) and factors (directly) associated with the business relationship to the contractual incentives explored during the study. This matrix placed the contractual incentives on the *y-axis* and the factors on the *x-axis*. It displayed the relationship between the factors relevant to a given procurement situation and applicable contractual incentives. The matrix also provided a perspective of the breadth of influences and factors that guide the government's decisions on strategy and the contractor's decision on participation.

The focus group examined the idea of developing this matrix into an incentive decision tool to assist the contracting professional in constructing successful business relationships and effectively applying contractual incentives. While the matrix did not provide the multi-dimensional effectiveness and ease of use required to be an effective tool, the *concept* remained sound. Research subsequent to the focus group efforts pointed to development of this incentive tool as an "expert system" application.[12] The matrix was also useful in one other way. It formed the basis for developing the concept of *Factor Collaboration*[SM] *(FC)*.[13]

Factor Collaboration[SM] Defined

Factor Collaboration[SM] is the joint assessment of the influences and factors that impact the structure of a potential business relationship. It promotes and supports a "meeting of the minds" with respect to the procurement and its business case in these important areas:

- The requirements
- The influences and factors
- The motivation
- The most effective incentive.

Through the disclosure and sharing of information essential to the planning and execution of a successful business relationship, Factor Collaboration can increase the likelihood that contractors will deliver successful results to government customers. This process must be an integral part of the contracting process throughout the Army contracting and acquisition community. Factor Collaboration can effectively support both sole source and competitive procurements.

Sole Source

As early as possible, both the Army and the contractor review the factors they believe are relevant to the procurement. The government will generally have greater initial insight into the factors relevant to the requirement and procurement strategy, while the contractor will generally have greater initial insight into factors relevant to their internal decision-making.

The Army and the contractor must openly and honestly assess all of the factors, because their unique perspectives define the most effective contractual incentives for the instant acquisition. In some cases, perspectives will overlap, while in other cases, perspectives will diverge given the factor considered and the level of insight and information available to each party.

Exploring these "*differences in perspective*" should surface critical information necessary for a more complete understanding of the business case. This process will help the parties collaboratively define an incentive approach that:

- recognizes the needs and motivations of the parties at that particular point in time and through the period of performance; and
- reflects a contract strategy that the government believes will ensure delivery of the requirement successfully and at "greatest value."[14]

Competitive

Factor Collaboration [SM] can be particularly useful within a competitive environment. Although certain information may not be available initially as in the sole source environment, given the recent changes to FAR Part 15[15] on communication between the government and the offerors, it may now be easier to conduct the analysis discussed above without affecting the integrity of the source selection process. Exchanges with potential offerors, prior to release of the request for proposal (RFP) and receipt of proposal, would be similar to the current process involving early involvement, such as industry forums, draft RFP exchanges, and so on. There needs to be latitude in Section L and Section M of the RFP for offerors to propose different or innovative incentives.

After receipt of proposals, discussions based on the individual contractor's approach and perspective on the factors could include tailoring contractual incentives appropriate for that offeror and its potential relationship with the government. One example might be the prospective tailoring of incentives to improve performance of the potential offeror in an area identified as weak, but necessary for the success of the delivery, through evaluation of past contractor performance.

Individual contract arrangements might differ among contractors. The integrity of the source selection process, however, must be maintained. Discussions may not impart a unique advantage or provide insight to another's proposal or approach. The goal is to enable the offeror to provide the best possible proposal and for the government to improve the probability of the successful delivery of the requirement.

As part of the award, the terms and conditions of the successful offeror's contract could address tailoring the incentives through an "incentive adjustment plan" laid out in the successful offeror's proposal. During the subsequent period of performance, this post-award tailoring could address improvements to the incentives that were applied, based upon changes in the factors affecting the business relationship.

In summary, *Factor Collaboration*[SM], as part of a comprehensive examination and understanding of the business case, facilitates the gathering of critical information necessary to the construction of a successful business relationship.

AREA 6: HOW CAN THE ARMY IMPROVE ITS ABILITY TO INCENTIVIZE SUCCESSFUL CONTRACTOR PERFORMANCE?

Summary

Changing the culture and providing improved training are essential to achieving gains in efficiency and effectiveness from improvements in the application of contractual incentives.

By improving the skills, training, and tools available to its workforce and demonstrating positive results in practice, the Army can help to change its culture. These changes must take place not only in the schoolhouse, but also as part of the contracting process used by the professional workforce operating in the program offices and in the field.

The development and deployment of an incentive application decision tool combined with an understanding of the financial aspects of incentive application can enhance the ability of the Army and industry to construct more effective business relationships. This tool uses an expert system that is based upon the Contractual Incentives Application Model℠ and the Factor Collaboration℠ process discussed in this study. The tool can facilitate a more complete understanding of the business case and provide a solid baseline from which to make choices. An understanding of "net present value" provides added insight to incentive application strategy.

Changing the Mindset – Changing the Culture

To understand the business case completely, the contracting workforce must change its mindset. The goal in contracting is not only to issue contracts, but also more importantly to support the development and execution of a business relationship that successfully delivers a product or service.

Several Examples of the Issue

Changing the mindset regarding the definition of a product, service or deliverable begins by changing how the objectives are viewed, as a whole. What is really wanted? The goals of the program can define a "something" or it can define an "output."

For example, consider a services contract where the requirement is for copy services. The deliverable might be expressed as providing x number of copy machines. A better way to express the requirement might be as *x number of copies*. The requirement focuses on the output (the "what") and not the tool by which output is delivered (the "how").

In another example, consider a supply and sustainment contract for an operational system. In many instances, a contract of this type might provide incentives for contractor performance through an award fee. In this example, assume that the contractor's performance meets requirements. Traditionally, award fees in this area might be relatively small and tied to subjective measures, not strongly enough to results; and do not include specific disincentives for poor performance.

As an alternative, consider incentivizing the contractor to lower downstream support costs, through an early investment in process improvements to improve maintainability of parts and systems. Rather than specifying the specific parts needed, provide metrics that measure successful completion of the requirements for sustainment (e.g. operational readiness rates). If successful, the incentive might be additional periods of performance. If unsuccessful, the penalty might be a reduction in the period of performance.

The fee may not be the most effective incentive for this procurement and this contractor. The motivation of the contractor may not necessarily be instant profit or immediate cash flow, but a long-term relationship in which costs can be stabilized along with its workforce.

On a larger scope, consider the change in the industry perspective on research and development (R&D). The DoD share of R&D spending is shrinking and fewer companies are willing to deal with the red tape associated with competing for it. In fact, the strong economy has created a wave of technology development and gadgetry and driven companies that might otherwise be interested in military work to more marketable endeavors where there is no question who can profit from new innovations. The ability of the DoD, and the

Army, to leverage the commercial industry in the development and integration of new technology into weapon systems that must meet ever changing threats is absolutely critical. At the same time, incentivizing industry to do business with the DoD when there are other lucrative markets with less stringent "rules of engagement" is becoming more and more challenging. What is the best way to do capture this technology and innovation and how best can the DoD and the Army achieve this goal?

The point is that determining the best approach requires a change in the mutual thinking and understanding of the procurement business case and then effectively applying this knowledge and insight through planned application of an effective incentive strategy.

Improving Communication

The path to better understanding is better communication and the formation of partnerships. In different areas of industry and government, however, many contractors and agencies still do not see themselves as "true partners." This historical relationship between government and industry is a limiting factor in developing new approaches to acquisition problems and common solutions that benefit both parties.

As discussed in both focus groups and presented in the discussion of Area 2, both government and industry must concentrate on gaining insight to each other's motivation on a given procurement, through an open dialogue that seeks to align the goals of both parties to the maximum extent possible. Building trust is essential to creating and sustaining a successful business relationship.

Improving Leadership

Leadership that is committed to and understands change is necessary at all levels to ensure that "new" or "different" approaches become embedded in the culture. For example, the contracting workforce has not yet made the transition to thinking of themselves as "business advisors and managers," with a key role in thinking through and proposing solid incentive strategies.

Leadership within the contracting community is needed to guide and support this role transition. The contracting workforce must be involved in early planning that supports the development of the business strategy. If engaged at a later point in the acquisition, the contracting workforce will only be exposed to part of the planning process, with a less than ideal business relationship the result.

Improving Training

Training reinforces the business process that the workforce uses in developing its approach to business relationships with industry. To change the approach, the government must change its culture and training.

The contracting workforce must expand their thinking and understand issues across the acquisition disciplines, moving away from the narrow perspective they have of contracting derived from a culture embedded by training. Training in the schoolhouse and on the job in field locations must change the focus of the workforce from "following the rules," to include "thinking through the nature of the deal" and ensuring that both parties' goals are satisfied.

Rewarding Innovation Will Drive Cultural Change

A likely consequence may be some failures; these must be accepted if innovation is to succeed. Innovators should be rewarded, even if they fail. Rewarding innovation continually incentivizes the progress that innovation can bring. This support to the workforce is needed and required to overcome the natural fear of failure and the consequent reluctance to be innovative. The workforce should be convinced that there is no punishment for risk-taking. In fact, it should be demonstrated that the "no penalty, safe business as usual approach" is fast becoming outdated.

Incentives can be provided as a reward for innovation. There are a number of different ways to reward those who take risks within the government to implement innovation. These include incentives such as office gain sharing, individual gain sharing, and highlighting their contributions in lessons learned activities. It will take leadership at all levels for innovation to be successful.

Improved communication, improved training, and improved leadership are essential to "reinvesting" the lessons learned within schoolhouses and throughout the workforce. The transfer of knowledge and experience to all levels offers an exceptional opportunity to provide a continuum of innovation that can build upon itself. This can only happen if innovation and creativity is encouraged, recognized, and rewarded at all levels of the acquisition and contracting community.

The Incentive Application Decision Tool

The Incentive Application Decision Tool is Based Upon an Expert System

Every new business relationship doesn't have to be innovative, but when the situation provides the opportunity, innovation and creative thinking, *based on an understanding of the procurement business case*, should be the goal when constructing the business relationship.

An incentive application decision tool is central to this approach. As a hybrid[16] expert system, the tool can improve the ability of the acquisition workforce to construct more effective business relationships.

Each contract awarded further defines the rules and updates the knowledge base. The system captures the result of the contracting process for each procurement and documents additional information that becomes part of the body of knowledge, which in turn can be used by others. The result is a consistent and documented process that over time improves not only itself, but also the skills and decision-making of the contracting workforce.

The Contractual Incentives Application Model SM (CIAM) Forms the Basis of an "Expert System"

The two-dimensional aspects of the matrix previously discussed limited its effectiveness as an efficient and leverage producing tool. The number of paths that must be generated to consider all the possibilities effectively requires a tool to be complex in its use and display. This is particularly true when weights are assigned to the criteria, sensitivity analysis is applied, and environmental or other factors are considered for entry to the matrix.

The *Factor Collaboration* SM process, derived from the matrix, can be most effectively used with an expert system. Assessment of factors and consideration of the influences affecting the business relationship can be brought together and highlighted more efficiently. An expert system can provide a shared, multi-dimensional understanding of the risk and the business case.

Figure 8 displays a simplified picture of the *Contractual Incentive Application Model*SM from which the expert system would be developed. The "decision points and discriminators" include the characteristics of the procurement and the results of the *Factor Collaboration*SM process and form part of the business case. The "decision rules and judgements" consist of the regulations, guidance, and a framework of decisions that are used in the contracting process. The "strategic dimension" defines the goal and the "realization dimension" accounts for the difficulty and feasibility of achieving the goal. Based on the alternatives, these factors are processed through an algorithm and a resulting "set of solutions" is presented.

The solution should by no means be a point solution. Instead, a set of solutions should be provided. The contracting officer then has a set of alternatives from which to choose the best contractual incentives for this particular procurement as well as the reasoning and logic trail for explaining the alternatives to the prospective contractors and the government acquisition team. The use of sound business judgement and common sense remains a requirement.

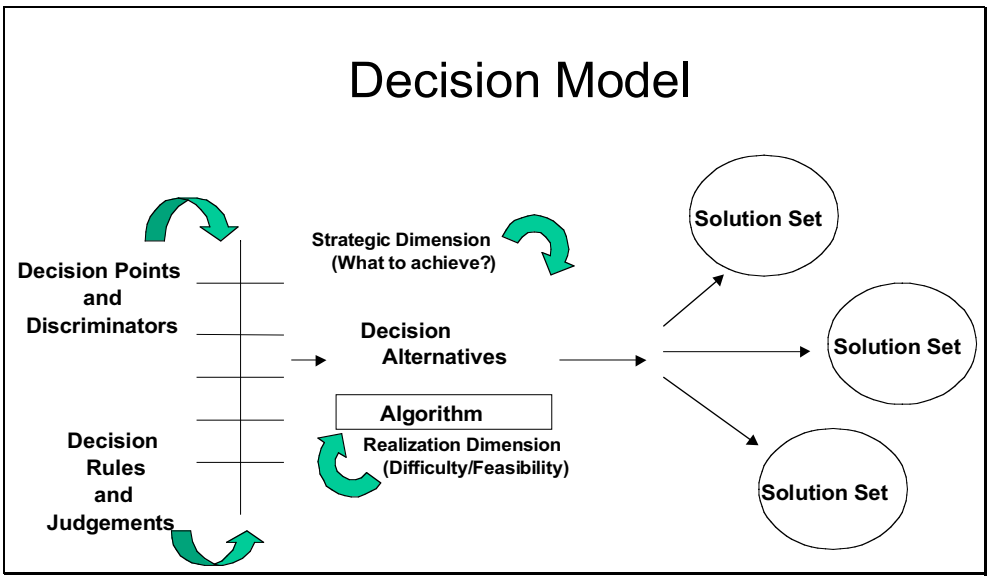

Figure 8 – CIAM Decision Model

An Approach to Incentive Evaluation[17]

There are several factors to consider when determining which incentivization approach is most likely to produce the behavior desired and be most attractive to the contractor. While strategic implications may be the overriding factor in some cases, normally contractors will want to accept the incentivization approach that has the best payoff.

Net Present Value

An excellent technique to determine this payoff is to conduct a *net present value* (NPV) analysis. For each incentive plan, the cash flows are mapped and discounted to the present value, then start-up costs are subtracted. The incentivization strategy with the largest net present value is likely to be applied.

In the simplest of terms, if a contractor was offered an incentive payment of $10,000 in one year, or $11,500 in two years, and the contractor's cost of capital is 12%, then, all other factors being equal, the contractor should opt for the two-year incentive.

The reason is that the NPV of the one-year offer is $8,929, while the two-year offer has a value of $9,168. If, however, the contractor's cost of capital is 18%, then the contractor should opt for the one-year incentive, since the one-year has an NPV of $8,475, while the two-year option is worth only $8,259.

Let's look at a more detailed example, with these parameters:

- A contractor has been delivering widgets to the government at a rate of 50,000 per month for $1 each.
- The total operating cost of his factory is 80 cents per widget.
- Depreciation of the capital equipment amounts to 10 cents per widget.
- Cost of capital is 12% and the tax rate is 38%.
- There are six months remaining on the contract.

The government has requested the contractor to accelerate the deliveries to complete the contract in four months, and has offered an $8,000 incentive to do so. The contractor estimates that it can make the four-month schedule by adding $2,000 overtime per month. But $2,000 X 4 months is $8,000 – the same amount as the Government is offering for the incentive – is this a better deal than just playing out the current contract?

The answer is yes – getting the cash earlier is what makes the difference. The following spreadsheet (Figure 9) displays the calculations. The "NPV" function in the spreadsheet is used to simplify the calculation process.

Calculating Net Present Value (NPV)

Cash flow for a specific time period (usually the month the contractor is paid) is the expected after-tax net cash. Basically, cash flow at time t (CF_t) is:

$$CF_t = (R - C - D)(1 - T) + D$$

Where R is revenue, C is operating cost, D is depreciation and T is the tax rate. Depreciation seems like a strange participant in determining cash flow, being subtracted then added back in like this. This is because depreciation is an accounting tool to determine appropriate taxes, it has to be added back once the tax is determined—no one writes a check to "depreciation."

Once the cash flow for each time period is determined, then the net present value is calculated by discounting each cash flow by the firm's cost of capital, then adding up all the resulting values. The mathematical representation of net present value (NPV) is:

$$NPV = \sum_{t=0}^{n} \frac{CF_t}{(1+k)^t}$$

Where CF_t is the cash flow at time t and k is the firm's cost of capital.

Of course, the easiest way to calculate NPV is to map the cash flows on a spreadsheet, then use the spreadsheet's "NPV" function.

Cash flows are usually mapped by month, but cost of capital is given in as an annual rate, so the cost of capital would have to be divided by 12 in the NPV calculation.

Option 1:Status Quo

	Jan	Feb	Mar	Apr	May	Jun
Revenue	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
Operating Cost	$ (40,000)	$ (40,000)	$ (40,000)	$ (40,000)	$ (40,000)	$ (40,000)
Depreciation	$ (5,000)	$ (5,000)	$ (5,000)	$ (5,000)	$ (5,000)	$ (5,000)
Before Tax Income	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Tax @ 38%	$ (1,900)	$ (1,900)	$ (1,900)	$ (1,900)	$ (1,900)	$ (1,900)
Net Income	$ 3,100	$ 3,100	$ 3,100	$ 3,100	$ 3,100	$ 3,100
Depreciation	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Net Cash Flow	$ 8,100	$ 8,100	$ 8,100	$ 8,100	$ 8,100	$ 8,100
Cost of Capital	12%					
NPV	**$46,943**					

Option 2: Accelerate 2 months

	Jan	Feb	Mar	Apr	May	Jun
Revenue	$ 75,000	$ 75,000	$ 75,000	$ 75,000	$ -	$ -
Incentive Bonus				$ 8,000		
Operating Cost	$ (62,000)	$ (62,000)	$ (62,000)	$ (62,000)	$ -	$ -
Depreciation	$ (7,500)	$ (7,500)	$ (7,500)	$ (7,500)	$ -	$ -
Before Tax Income	$ 5,500	$ 5,500	$ 5,500	$ 13,500	$ -	$ -
Tax @ 38%	$ (2,090)	$ (2,090)	$ (2,090)	$ (5,130)	$ -	$ -
Net Income	$ 3,410	$ 3,410	$ 3,410	$ 8,370	$ -	$ -
Depreciation	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ -	$ -
Net Cash Flow	$ 10,910	$ 10,910	$ 10,910	$ 15,870	$ -	$ -
Cost of Capital	12%					
NPV	**$ 47,337**					

Figure 9- Effect of Accelerating Product Delivery

Accelerating the delivery of the product provides the highest net present value to the company. Of course, other factors also have to be weighed, such as "Will the company be able to make additional sales to maintain factory production during May and June?" Each situation is unique. The incentives offered may be appropriate under the circumstances or they may need to be tailored for that particular firm (or thrown out entirely and a different incentive plan offered).

The Cost of Capital

The contractor's cost of capital is a significant factor in how that contractor should evaluate possible incentive deals. The cost of capital is a weighted-average of the cost of debt and the opportunity cost of equity. Opportunity cost of equity has to do with the contractor's relative position in the market and industry sector with respect to risk and return on investment. It is extremely important to understand that a contractor can show a profit but actually destroy its value if it does not produce a positive NPV on its projects.

This is especially true on government contracts. The culture maintains considerable pressure to keep profits "reasonable" and the government often leverages its position as the world's largest customer. A successful business relationship between government and industry can be executed if the parties understand how different incentivization strategies will affect both overall value and the bottom line. It is important to understand that various incentivization plans will affect contractors differently and uniquely.

Chapter Three: Summary and Findings

SUMMARY

Phase I of this study examined a historical timeline of acquisition and the use of contractual incentives over the past fifty years. It explored motivation as a force within the business relationship, established a baseline list of factors to consider in the application of contractual incentives, and developed a cross-section of innovative contractual incentives in use across industry and government.

Phase II used this Phase I baseline to explore six focus areas:

- ***Area 1:*** *What is a "contractual incentive?"*
- ***Area 2:*** *What influences impact the creation and execution of a business relationship between the Army and its contractors?*
- ***Area 3:*** *What factors are considered important by the Army and its contractor before entering into a business relationship?*
- ***Area 4:*** *What innovative applications of existing contractual incentives can be developed to improve the likelihood of successful contractor performance? What new and innovative contractual incentives can be developed to improve the likelihood of successful contractor performance?*
- ***Area 5:*** *What changes can be developed in the process for the application of contractual incentives within the business relationship to increase effectiveness?*
- ***Area 6:*** *How can the Army improve its ability to incentivize successful contractor performance?*

FINDINGS

The findings from this study are:

Shared Common Goals

- The government and the contractor generally share a common set of top-level goals. These goals include the achievement of customer satisfaction, program stability, and positive program and financial performance.
- In successful business relationships:
  - The parties to the relationship achieve their individual and shared goals and objectives through the successful planning, execution, and delivery of their respective responsibilities; and
  - The degree to which the parties achieve success depends upon their ability to find mutually derived solutions.

Key Prerequisite: Understand the Business Case

- The procurement business case consists of a set of overlapping events, processes, factors, and influences.
- Mutual understanding of and insight to the business case is a prerequisite for successful application of an incentive strategy that properly focuses on the areas of performance interest.
- Business relationships built upon strategies not based on this insight risk implementing contractual incentives that incentivize the wrong behavior and fail to successfully deliver the requirement.

Traditional Contracting Process Lacks Necessary Collaboration

- The traditional contracting process may not result in win-win solutions because it lacks the collaboration required to mutually achieve program goals. Traditional approaches to contractual incentives must change, from the culture instilled in the schoolhouse, to practical application in the field.

Changing the Culture is Essential

- Changing the culture and providing improved training are essential if the government is to achieve the gains in efficiency and effectiveness that come from improving the application of contractual incentives. Improved training and demonstration of positive results in practice can help to change the culture. These changes must take place not only in the schoolhouse, but also as part of the contracting process used by the contracting and acquisition workforce.
- We must be ready to accept some failures if we are going to innovate. We should reward people who are innovative, even if they fail. Supporting the workforce in overcoming the natural fear of failure by rewarding innovation even if it results in failure is important for success.

Open Communication Leads to Mutual Understanding of the Business Case

- Business relationships are affected by cultural, structural, statutory and regulatory, financial, contractual, programmatic, and political influences.
- Decision-makers must carefully consider the environment, the influences, and the factors that comprise the business case before a business decision is made. Openly discussing these differences provides an opportunity to improve mutual understanding of the business case and provides real insight into each other's motivations. Discussion can lead logically to consideration of effective incentives needed by industry and offered by government to meet the goals and objectives of both parties.
- A balance of risk and reward is required for a successful business relationship. Incentives can be applied—based on partnering, communication and trust—that demonstrate to the contractor that its objectives can best be met by successfully meeting the government's objectives. This requires common sense, sound business judgement, and an enlightened approach.
- *Factor Collaboration* [SM] is a useful and structured process to assist the Army and industry to jointly achieve a more comprehensive understanding of the overall business case. With increased insight, contractors will be more likely to meet government customer requirements.

Knowledge Management is Critical

- One of an organization's most valuable assets is its knowledge base. It is also the hardest to manage. Connecting the contracting workforce with the information and tools they need is essential.
- Development and deployment of an incentive application decision tool combined with an understanding of the financial aspects of incentive application can improve the effectiveness of the contracting and acquisition workforce.
- Pushing the changes and new concepts from the successes of acquisition reform to the front lines of the contracting workforce is a necessity. The evolution of the vision for change into practical application and training must be the contracting and acquisition professional's everyday approach to defining and executing successful business relationships.

A Composite Approach in Both Training and Application is Necessary

This is necessary to provide a solid foundation for change across the contracting and acquisition community. It is accomplished through an implementation and support system that includes the following:

- Implementing guidance on the development and application of contractual incentives

- An automated, web-based, incentive decision tool to support the contracting workforce
- Opportunities for sharing and collaboration through an embedded lessons learned process
- A leadership and workforce commitment to change at all levels of command
- A strong framework of directives and instructional information
- Established support mechanisms to assist the workforce in development and use of contractual incentives and the construction of better business relationships
- Collaborative planning and management with industry

Chapter Four: Next Steps

RECOMMENDATIONS

1. Implementation Planning and Roadmap (PARCs and Senior Acquisition Leaders)

The Deputy Assistant Secretary of the Army (Procurement) should lead a *limited series of fast-reaction joint-planning sessions* to develop a roadmap that incorporates the results of the *Innovation in Contractual Incentives* study with other similar and ongoing planning and initiatives within the Army acquisition and contracting community.

Suggested session minimum membership would include Army Material Command (AMC) Principal Assistants for Contracting (PARC), mid-level contracting professionals, senior acquisition leaders from other functional disciplines, and selected industry contracting and acquisition professionals. Additional membership could include contracting and acquisition professionals from other military services, Office of the Secretary of Defense (OSD), and other executive agencies.

The roadmap would be one baseline in a larger *effort* to improve the overall *knowledge management* process by which the Army constructs and manages business relationships. The first step would be to improve the process by which those responsible for the planning and execution of business relationships:

- Communicate with existing and potential contractors;
- Increase real understanding of both the government and contractor business cases relevant to a particular procurement; and
- Apply contractual incentives targeted to the issues and needs relevant to the business case.

2. An Incentive Application Decision Tool Could Form the Basis of an Expanded Knowledge Management System

An incentive application decision tool could form the initial building block of a comprehensive *knowledge management* system. Developed and deployed in phases, an expert system, based upon the *Contractual Incentives Application Model*[SM] and *Factor Collaboration*[SM] process discussed in this study, can be a very effective knowledge leveraging tool. Effective not only in providing the improved training essential to achieving improvements in the application of contractual incentives, but also in supporting a change in the culture.

The concept is simple. Each contract awarded further defines the rules and supports an update of the knowledge base. The expert system captures the outcome of the contracting process for each procurement considered and documents additional information that becomes part of the body of knowledge that can be used by others. The result is a consistent and documented process that over time improves not only itself, but also the skills and decision-making of the contracting workforce.

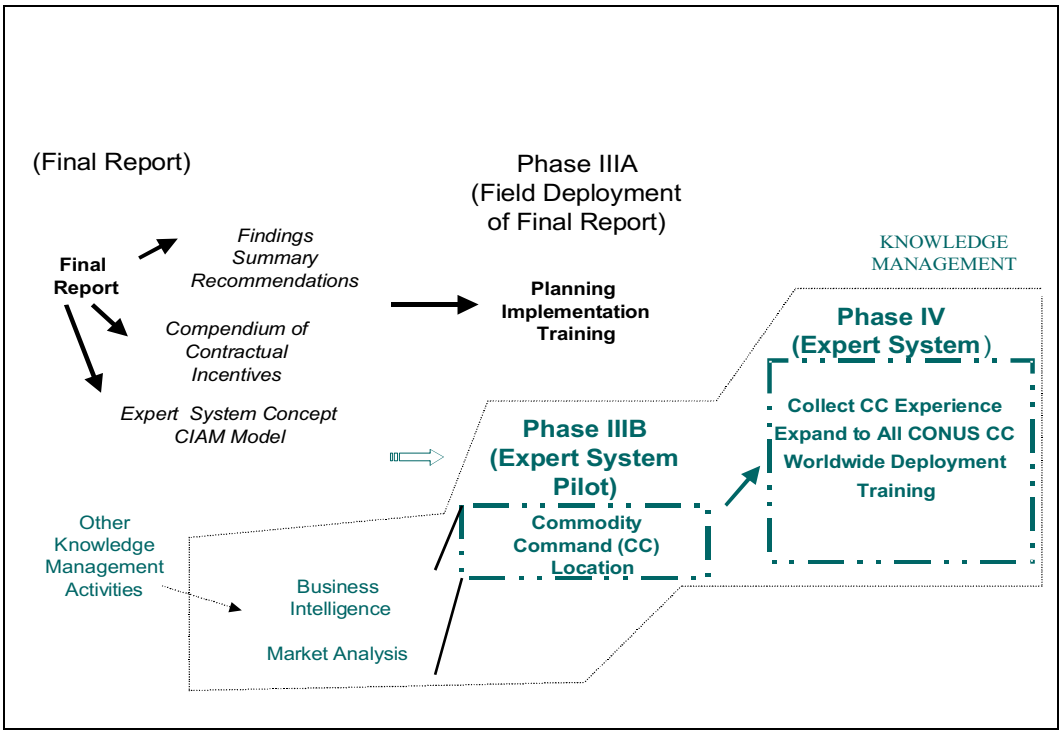

Figure 10 – Implementation Roadmap

The deployment concept envisions a subsequent Phase III, as shown in Figure 10.

Phase IIIA is the planning, implementation, and training associated with the final report. This phase further develops the *Compendium of Contractual Incentives* (Appendix B) into a more comprehensive document incorporating the results of this study and other Army initiatives based on the roadmap developed immediately upon conclusion of this study and described above. Distribution is Army-wide.

Phase IIIB begins the development of the expert system based incentive application decision tool, in the following sequence:

1. Gather the "experts' knowledge."
2. Define an approach to the problems.
3. Define the business rules and regulations.
4. Tap into existing data.
5. Derive an online interactive expertise solution.

Initial development and deployment occurs at a single AMC Commodity Command. The tool is deployed as a pilot system and may be linked with other *knowledge management* initiatives already in development. The initial pilot system includes specific "expert knowledge" associated with the type of procurement accomplished at that commodity center (e.g., systems vs. installation). The data from successive procurements at the pilot location is incorporated into the system (model). The tool is then deployed at other commodity commands, each offering and contributing its specific procurement expertise. Deployment is then accomplished throughout the Army incorporating the "body of knowledge" developed to date.

Assessment of factors and consideration of the influences affecting the business relationship can be brought together and highlighted more efficiently in this web-based, automated tool. An expert system can provide a shared, multi-dimensional understanding of the risk and the business case. This phased approach to deployment of a tool could provide the government and the contractor with a comprehensive, consistent, and understandable

framework to develop a solid understanding of the business case as a starting point in crafting sound and effective business relationships.

3. Draft Policy and Procedures for Use of an Incentive Application Decision Tool

A decision to deploy an expert system as the underlying architecture for the incentive application decision tool requires the development of policy and procedures for its use by the workforce. This would include a description of the tool, an outline of the processes and the underlying model, and a time-phased schedule for its deployment.

4. Develop and Implement an Outreach Plan for the Study Results

Visibility in Implementation

Maximum visibility and emphasis of the study results and recommendations is essential so they are not viewed "casually" or as "just another initiative." Demonstration of the tool and concrete examples of its success can best be accomplished through the Army acquisition roadshow process.

Maximize Use of Electronic and Print Media

Maximum advantage should be taken of the electronic and print media available. Use of the Army Acquisition Reform website and other appropriate websites should be used, as should all the available print media relevant to the subject matter.

Establish an Incentive Application Decision Tool Website

After development and deployment of the tool, host the tool on a website and collect comments, suggestions, and post lessons learned from its use

Spotlight the Study Results and Incentive Application Decision Tool Concept at Major Conference Events

Take advantage of the audience available at major contracting and acquisition events, such as at the NCMA World Congress (April 2000) and the next DoD Procurement Conference. Depending on the implementation and timing of Phase IIIB, demonstration scenarios, training modules, and descriptions of the tool and the underlying expert system based model (the CIAM) could be available to conference attendees.

5. Develop Web-based and Resident Training Modules

A set of professional-level training modules for broad use within the Army, and later throughout the DoD, would be required to institutionalize the results of this study and to integrate the incentive application decision tool into the contracting and acquisition process. These training sessions would provide the training skills necessary to achieve quick success in the tool's application within the workforce.

It is important that this initiative be universally understood and accepted by the workforce. Further, these modules would be available to industry for use and deployment within their organizations. Joint training may be an option to consider after initial deployment within each organization.

Appendix A: Focus Group Participants

The participants in the focus group included: senior vice presidents of contracts and contracting policy from Lockheed-Martin, Boeing and Raytheon; senior acquisition, contracting, and business management officials from the Army, Navy, and Air Force; a former Administrator for Federal Procurement Policy (OFPP); senior consultants in the field of contracting and acquisition; a Deputy Army Program Executive Officer; Principal Assistants Responsible for Contracting (PARC) from Army commodity commands; as well as other senior contracting and acquisition officials from Army staff and field organizations. Their contributions are based on a wealth of experience, observation of the changes in contracting and acquisition, and expertise and insight gathered from years of hands-on experience in the planning, formulation, and execution of numerous business relationships.

Industry

Nancy Archuleta, CEO, MEVATEC

Peter DeMayo, Vice President, Corporate Contract Policy, Lockheed Martin

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Appendix B: Compendium of Contractual Incentives

AWARD TERM CONTRACTING

Contract Incentive: X

Incentive Relationship Strategy:

Description:

The government establishes objective performance parameters in the underlying contract and announces up-front that it intends to shorten or lengthen the period of contract performance (minimum and maximum), based on the contractor's performance against those performance parameters.

Target of Use:

- Establishment of long-term contractor relationships with proven producer of products or services.
- Designed to incentivize the contractor to execute an orderly transition of workload, provide superior support, and control prices through extensions or reductions of the term directly based on performance.

Elements:

- Structure similar to award fee but the incentive is periods of performance rather than cash.
- Effective if performance metrics are objective.
- Effective when a long-term business relationship is of value to the government and the contractor.
- Points are awarded during each year of the contract based on performance in each performance measurement category.
- Decisions on extending or shortening the contract are made on a year-by-year basis, based on a moving multi-year average of the contractor's overall point total.
- Extensions can be set, based upon performance that exceeds requirements rather than just meeting requirements.

Pros:

- Strongly incentivizes contractor performance.
- Supports long-term sources of quality services and products.
- Enables supplier to make investments in process improvements that it might not otherwise make when facing short-term or uncertainty in periods of performance.
- Allows government to extend performance quickly and efficiently with a high-performing contractor
- Contractor will be rewarded for reducing cost while maintaining or exceeding performance parameters and accelerating completion.
- States government priorities explicitly and gives contractor more autonomy in achieving desired results.
- Contractor knows the expected outcome up-front and the requirements for success.

Cautions:

- Can be a challenge to monitor contractor progress accurately.

- Reward must be sufficient to drive desired behavior throughout contract performance.
- Can be a challenge to define the reward scheme precisely so that it drives proper behavior.
- Care must be taken in assessing pricing for extension periods.

Example(s):

Air Force Propulsion Business Area/Public-Private Competition (Engine Repair and Maintenance)

This effort, a public/private competition, was planned as a requirements contract with an initial ordering period of seven years. The initial seven-year ordering period may be extended or reduced, on the basis of contractor performance, resulting in an ordering period lasting a minimum of five years from completion of the transition period to a maximum of fifteen years from the date of contract award. The RFP contains an award-term clause, which will allow the successful offeror to earn extensions to the initial ordering period based on performance as described in an award-term plan.

The successful contractor's performance will be continually monitored against "measures of merit," outlined in the contract. Performance is reported to an Award Term Review Board (ATRB) who recommends award term points to a Term Determining Official (TDO). Accumulation of points over the basic period of performance determines the ultimate length of performance periods. Points awarded can be positive (add time) or negative (subtract time).

According to the PCO at Kelly AFB, this concept has great support from offerors. Success is measured in additional performance opportunities and development of a long-term relationship. Offerors stated that there is more pressure on them to provide exceptional performance in an award-term than in an award-fee situation, because failure to earn maximum points directly affects the period of performance and return on investment.

This technique for establishing an earned long-term relationship can be useful in competitive acquisitions in which the government would otherwise have to re-compete more frequently, even if the incumbent is performing well. While the Air Force has awarded several such contracts, and others are in source selection, none have been in effect long enough to evaluate their effectiveness and any potential problems. One possible issue is the need to price the entire period to which the potential performance extensions apply.

AWARD FEE

Contract Incentive: X

Incentive Relationship Strategy:

Description:

Award Fee can motivate the contractor to excellent performance. The government judgmentally determines and measures a contractor's performance within specifically designated performance categories, evaluation criteria, and evaluation periods. The process is defined in an award-fee plan.

Target of Use:

Cost Reimbursement and Fixed Price Contracts

Elements of Use:

- Define the evaluation periods and the amount of award fee available for each period.
- Describe the general procedures to determine the earned award fee for each evaluation period.
- Define the evaluation criteria.
- Identify the Fee Determining Official (FDO), the Award Fee Review Board (AFRB) members by position and the Performance Monitors by function with descriptions of their roles in the Award Fee Process

Pros:

- Plan can be revised when necessary to adapt to program changes.
- Can be adapted to flow down as individual worker bonuses, making the incentive real and personal.
- Incentives can be based on simple, reasonable, achievable, and measurable performance.
- Can construct based on the acquisition.
- All profit/fee can be based on performance.

Cautions:

- Requires careful review of the statement of work.
- Requires administrative time investment.
- Requires carefully documented record of performance and consistent records.
- Focus on end item performance.
- Doesn't link contractor performance evaluation to government actions.
- Requires balance between cost, schedule and task performance so that one area is not emphasized over another.

BUSINESS CASE NEGOTIATION OF INTELLECTUAL PROPERTY

Contract Incentive: X

Incentive Relationship Strategy:

Description: Government and contractor execute a contract with intellectual property terms and conditions tailored to the procurement and the business case. It enables the contractor to develop and exploit intellectual property developed under government contract and with government or mixed contractor-government funds.

Target of Use: Cost Reimbursement and Fixed Price Contracts

Elements of Use:

- Trade secrets, patents, and copyrights.
- Enables government and contractor to negotiate rights based on the individual procurement and the business case.
- Individual negotiation of each situation allows consideration to be defined relative to the business case.

Pros:

- Recognizes market forces in the commercial world and that there are many different market models in operation.
- Overcomes the concerns of technology dissemination and encourages development of new technology.
- Enables government partnership in the development and use of new technology.
- Addresses issue of companies owning and profiting from patents developed through government research.

Cautions:

- Requires change to the FAR or deviation to the FAR

COMMERCIAL-GOVERNMENT TECHNOLOGY INTEGRATION

Contract Incentive:

Incentive Relationship Strategy: X

Description:

Supports contracts for technology opportunities that industry is already pursuing for commercial application. Rides on industry's much shorter development and fielding times and increased quality, driven by competitive market forces and first-to-market goals.

Target of Use:

Effective when industry is the technology lead for a commercial application that will meet government requirements.

Elements of Use:

- Collaborate with industry to rationalize requirements.
- Cost share development.
- Many data rights options available and negotiable.
- Can write flexible terms and conditions.

Pros:

- Leverages industry investment.
- World-class development cycles make technology turnaround times more achievable.
- Industry builds to a performance specification and maintains configuration control—enables capture of best available technology (BAT).
- Government maintains real insight into the development activities.
- If "other transactions" or FAR Part 12 is used, Cost Accounting Standards are not required.
- Market forces set price.
- Contractor must provide product or service that is competitive across a much larger and varied customer base.
- Funding and requirements synergy.
- Contractor motivated by commercial market competition and, depending on the circumstances, "first to market" incentive.
- Commercial best practices more apt to be employed.
- Either party can terminate for default or convenience within strict parameters.

Cautions:

- Requires change in government mindset from oversight to insight.
- Probable issues with audit and inspection groups acquiring access to financial records, including those expressly commercial in nature.
- Must trust the contractor to have a rigorous and accountable configuration management process.

COMPOSITE FACILITY INTEGRATED AWARD FEE

Contract Incentive: X

Incentive Relationship Strategy:

Description: Establish pre-negotiated award fee layers (for major programs) at a single contractor facility and combine them into facility-wide award fee pool.

Target of Use: Contractors working on multiple critical programs at location defined as one facility.

Elements of Use:

- Award fee is established at facility level based on criteria such as:
  - Exceptional Performance in all programs - 100% of award pool
  - Above average in all programs - 50% of award fee pool
  - Above average in most programs - 25% of award fee pool
  - Above average in a single program - 5-10% of award fee pool.
- There would be an award fee board including the contractor, voting on performance.

Pros:

- Large motivational tool for the contractor.
- Incentivizes the contractor to maximize best performance across all programs while focusing on the critical programs.
- Indicator to contractor where it needs to devote resources.
- Avoids situation where contractor chooses which program gets the best and brightest based upon fee/profit in individual contracts.
- Decreases gaming the system.
- Avoids individual negotiations on award fees.

Cautions:

- Award-fee plan must be carefully constructed.
- Requires additional administrative investment and more complex award fee process.
- Requires commitment and discipline from all parties.

CONTINGENT CONTRACTING[18]

Contract Incentive:

Incentive Relationship Strategy: X

Description:

Contingent contracts recognize that two parties with common interests can often fail to reach agreement because of different expectations about the outcome of terms and conditions that form part of the agreement. Contingent contracts provide an incentive to execute a successful business relationship that recognizes the needs of both parties. The terms are not finalized until the uncertain event in question actually occurs.

Target of Use:

- Resolves differences of opinion about future expectations of an event or events.
- Focuses the parties on their mutual interests and the potential gain available through a successful relationship.

Elements of Use:

- Requires continuing interaction between the parties.
- Requires an enforceable contract.
- Requires ability to observe and measure the contingent event.

Pros:

- Turns difference into value.
- Counters biases through establishing future scenarios reflecting each party's expectations of the outcome. This creates an incentive to execute the contract anticipating the outcome supported. Allows flexibility without feeling compromised.
- Levels the playing field regarding information available or known to each party.
- Addresses doubts about facts or projections in a non-confrontational manner.
- Enables risk sharing by accounting for changes in the outcomes and compensating for these changes in the contract.
- Motivates performance at or above the required levels to ensure that an individual party's expectations are supported to realization.

Cautions:

- Requires commitment.
- Requires trust.
- Requires innovative thinking.
- Requires understanding of the marketplace in which the business is transacted.

CORPORATE AND INDIVIDUAL CONTRACTOR INCENTIVES

Contract Incentive: X

Incentive Relationship Strategy:

Description:

Incentives for organizational and employee performance with cash for achievement of goals and objectives.

Target of Use:

- Any contractor.

Elements of Use:

- Contractor performance is embedded as a desired behavior within its organization.
- Contractor incentivizes individual employee performance with a direct monetary payout based on a percentage of savings or fee award, driving the incentives down to the lowest levels within the company.

Pros:

- Incentives for personnel to explore new, innovative, or creative approaches to incentive contracting.
- Encourages and supports collaboration and open communication between all parties involved.

Cautions:

- Requires coordination and buy-in by all communities.
- Requires careful definition of savings, sharing, and thresholds for success.
- Requires careful documentation of savings.

Example:

Air Force Peace Shield Program

The Peace Shield program delivered six months early and below cost on a $1B program. Peace Shield, a Foreign Military Sales (FMS) program managed by the Air Force Electronic Systems Center, delivers a software-intensive nationwide ground-air defense and C3 system to the Royal Saudi Air Force. It includes 17 radars, a central command and operation center, multiple other operation centers, communication links, and interfaces. The contract was awarded to complete a contract previously held by another contractor and terminated. Success for this program is a model of understanding motivation and the careful application of performance incentives at the corporate and individual team/employee levels. Incentives were structured as follows:

Corporate Incentive: The AF program office (PMO) developed a cost and schedule incentive to deliver three months ahead of schedule and below target. It included a $50M bonus for early delivery and up to $50M liquidated damages for late delivery. The contract was FFP/FPIF with a

75/25-share ratio below and above target. Ceiling price was 125 percent.

Employee Incentive: The contractor adapted an approach from a successfully completed 1989 NATO contract that included both long-term and near term incentives for early delivery. Because the Peace Shield program was software intensive, it was susceptible to individual motivation. The company constructed an incentive share program for employees with incentives broken down to interim achievable parts with early payments.

Overall success of the Peace Shield program and the effectiveness of the incentive structure resulted from recognition by the company of the need to succeed, motivated corporate and employee commitment based on interim team and individual awards. The bottom-line reasons for success can be summarized as careful attention to lessons learned coupled with an understanding of motivation and a concentrated effort on partnership.

COMMERCIAL PRODUCTS PRODUCED TO GOVERNMENT REQUIREMENTS

Contract Incentive:

Incentive Relationship Strategy: X

Description:

Commercial items specifically defined to include products produced to government requirements. The commercial source regularly produces similar products to the specifications of its commercial customers using the same production facilities and methods.

Target of Use:

Increases potential to use commercial sources at prime and subcontract level.

Pros:

- May make it possible for commercial suppliers of formed or machined parts, coatings, or other products to accomplish government business, without changing their systems and processes.
- Allows low-overhead, competitively driven, efficient commercial companies to supply government-peculiar products, under limited circumstances, without giving up commercial marketplace efficiencies.

Cautions:

- Requires legislative initiative to change definition of commercial items.
- Potential for perception by Congress that authority would be abused to buy truly government-unique designs for which suppliers would set up unique production lines, with no price comparability to commercial sales

EARLY COMPLETION BONUS

Contract Incentive:

Incentive Relationship Strategy: X

Description: Incentivizes early delivery of product or service.

Target of Use:

- Use when value of early completion is clear and value can be established for reward.

Elements of Use:

- Offerors bid a target completion date as well as a schedule of rewards/penalties for deviation from the target completion date.
- Both the target and the reward/penalty structure should be evaluation criteria for source selection if competitive procurement.

Pros:

- Places premium on schedule performance.

Cautions:

- Requires balance between other program objectives and schedule to ensure all requirements are met.
- Requires careful evaluation and substantiation for value of early completion.

FAST CASH

Contract Incentive:

Incentive Relationship Strategy: X

Description:

The government conveys the outcome desired to the contractor in terms of performance and/or cost. The contractor conveys his minimum expected return and the basis for such. The government and contractor partner in developing the price and payment terms that best meets each party's expectations.

Target of Use:

- Should be considered for use when funds available to government may not be enough to cover anticipated price using normal contracting procedures.

Elements of Use:

- Uses cash flow to drive faster performance and/or lower total price.
- Requires an open, trusting relationship between the parties.

Pros:

- Can lead to a contract that will have the greatest chance of successful performance.
- By speeding up cash flow to contractor, the government may be able to execute contract at a lower price. This could make an unaffordable acquisition more affordable.

Cautions:

- Requires successful collaboration and open communication.
- Cultural impediments may make implementation difficult.
- Motivations of each party must be clearly understood.
- Pricing arrangement may require higher authority approvals.

GRADUATED AWARD FEE

Contract Incentive: X

Incentive Relationship Strategy:

Description:

An approach to award fees that layers incentive elements.

Target of Use:

- Competing areas of focus within a program.
- Consider when attention to "macro" or "overriding" elements of performance is required.
- Consider when there is a good understanding of the tradeoffs between performance levels. (e.g., the push for superior technical performance would have to be balanced by its anticipated cost, given technical is a lower-level element and cost is a higher-level element.)

Elements of Use:

- As an example, the first layer of award fee elements might include strong technical performance in an area, on-time schedule performance as indicated by milestone achievement, and application of a cost tool such as CAIV.
- The next and "higher" level of award fee might be overall cost control.
- During award fee review and determinations, the first layer of elements are assessed and assigned "pure" element values. An overall award fee is established based on this first layer. This award fee then is subject to adjustment, up or down, based on evaluation of the higher-level award fee.

Pros:

- Better attention to "macro" or "overriding" performance elements.
- Improved synthesis of performance elements (inability to maximize one element at the expense of another).
- Flexibility in establishing the "right" performance hierarchy for a particular requirement.

Cautions:

- Award fee requires substantial resources to manage.
- Impact of award fee incentive can be magnified negatively if "wrong" higher-level performance element is selected.

INCENTIVES FOR GOVERNMENT ORGANIZATIONS

Contract Incentive: X

Incentive Relationship Strategy:

Description: Provide incentives for government acquisition programs and organizations.

Target of Use:

- Government organizations participating in program execution

Elements of Use:

- Structure shared savings incentives so that government organizations, working with contractors, are also graded on performance.
- Requires clear, understandable criteria for measuring those outcomes.
- If savings occur, both contractor and government program share in those savings. For government programs, this would mean that shared savings accrued would not be swept up in the current fiscal year under the guise of low obligation rates, and would not be taken out of the budget base in future fiscal years.
- Could be translated into funds that could be used for additional purchases, but might also be used for education and training or employee incentive bonuses or awards.

Pros:

- Incentives for government personnel to explore new, innovative, or creative approaches to incentive contracting.
- Encourages and supports collaboration and open communication between all parties involved.

Cautions:

- Requires coordination and buy-in by comptroller and personnel communities.
- Requires careful definition of savings, sharing, and thresholds for success.
- Requires careful documentation of savings.

INCREMENTAL AWARD FEE

Contract Incentive: X

Incentive Relationship Strategy:

Description:

A derivative of the standard award fee structure. Incentive consists of two areas—performance that is subjective and effort that is discrete.

Target of Use:

- This incentive is most appropriate in a cost-plus environment when you are not sure the optimum results have been defined as the contract objective.

Elements of Use:

- The performance portion of the fee is evaluated in the normal fashion with regular reviews.
- The discrete portion of the fee is tied to events or activities that are critical to program success.
- Meeting the predetermined objective as defined in the contract would warrant award of the determined fee at the time of achieving the objective.
- The increment of fee is a predetermined amount that would be awarded if the objective were achieved to a greater or lesser degree.

Pros:

- Provides process for exceeding requirements and being rewarded.
- Provides process for recognizing poor performance and compensating accordingly.
- Fee can be awarded earlier in the period of performance expediting contractor cash flow.

Cautions:

- There can be increased difficulty in ensuring objective, measurable accomplishment criteria for the triggering “event” or “activity.”

INTEREST-BASED NEGOTIATION

Contract Incentive:

Incentive Relationship Strategy: X

Description:

Changes the way we negotiate price. Uses "interest-based negotiations" approach instead of focusing only on price or cost-based negotiations.

Target of Use:

- Increase number of possible contractors/vendors.
- Could use with all levels of contracting.
- Larger contracts that have a major impact on a firm's investment strategy or a significant cost to the customer.

Elements of Use:

- Approach is more in line with industry practice.

Pros:

- May allow for greater and more willing participation in the government market by commercial firms. More entries in the government market should provide for more selection of products and services. The more firms competing in a market the lower the price, the better the quality of the products being offered in that market, and the greater the availability of those products to meet the customer's demands.
- It supports government recognition of other investment strategies used by a firm when establishing selling price.
- It allows for a better understanding of what incentives an industry or a particular firm may need.
- It places dollars in perspective with an industry or a particular firm's overall investment strategy.

Cautions:

- Requires a tremendous amount of trust between the parties.
- Requires both sides to reveal sensitive information about their internal operations and plans.
- Is also a major paradigm shift for the federal government.

JOINT VENTURE SHARED RESPONSIBILITY

Contract Incentive:

Incentive Relationship Strategy: X

Description:

Government and contractor share in the cost of developing and producing a product or service. This can result in the development of a contractual relationship along the lines of a commercial arrangement that could reside outside the FAR.

Target of Use:

- Could be applicable to development of lab efforts and emerging technologies or in the development of information technology.
- Competitive or sole source contracts.
- All acquisition cycles.
- Facilitates development of deeper relationships with technology firms.

Elements of Use:

- Base amount of appropriated funds contributed by the government.
- Commercial relationship with industry technology firms.
- Share in results and use of developing technology.
- No direct control of the corporate partners.

Pros:

- Takes advantage of private sector's ability to compete in the technology arena.
- Leverages the private sector's ability to turn technology development around in a very short time.
- Leverages private sector's ability to attract highly skilled technology developers and technicians though commercial compensation packages.
- The contractor can be guaranteed a minimum return if certain levels of performance are achieved.
- The government can be guaranteed that their costs will never exceed a certain threshold.
- If this "joint venture" is successful, it could be resold to others and the government and the contractor could share in the subsequent return.
- Sharing of development or performance risk.
- Limits on financial liability for both.
- Can be treated as a commercial venture and removed from the realm of the government regulatory and fiscal structure.
- Facilitates design of performance-incentive reward program that can produce measurable results.
- Opportunity to attract ideas for emerging technology and share and guide in its development.

Cautions:

- Requires considerable planning and attention to contracting and partnering issues.

Example:

Central Intelligence Agency Venture Capital Program
The CIA is seeking to stay on top of technology. It is developing a non-profit hybrid that will engage the commercial technology development world as a venture capital provider and business developer. The CIA intends to provide seed money to develop technology that the agency needs. The venture will begin with $28.5 million and all the work will be unclassified. The CIA will have no direct control over any corporate operations but will be a direct beneficiary of the technology development and products.[19]

LONG-TERM AWARD CONTRACTING (PRODUCTION)

Contract Incentive:

Incentive Relationship Strategy: X

Description: Contractor is rewarded for meeting or exceeding performance goals with a predetermined amount of future or follow-on business.

Target of Use:

- Competitive or sole source contract.
- Production and follow-on sustainment.

Elements of Use:

- Award of production contract accompanied by agreement to award follow-on logistics and sustainment effort as reward for meeting or exceeding agreed incentive goals.

Pros:

- Builds long-term relationship with performing contractor.
- Better able to design performance-incentive reward program that can produce measurable results.

Cautions:

- No guarantee of future business if funding changes.

NEW BUSINESS ENTRY INCENTIVES

Contract Incentive:

Incentive Relationship Strategy: X

Description:

During requirements development, government should think through the ultimate results it seeks and state the requirement in a way that incentivizes the contractor to drive for that result. The government should contract for the output or problem it wants solved and not for an interim step or government-proposed solution.

Targets of Use:

- Part of the acquisition strategy for any requirement.
- Can use when government is not sure of the best solution.
- Can use when government is looking for creative ideas.
- Supports performance-based solutions.

Pros:

- Encourages the government to rethink traditional requirements and to look at underlying results it is trying to accomplish.
- Rewards innovation and capitalizes on contractor skills or capabilities.
- Incentivizes contractor performance based on those results.

Cautions:

- Government must be able to identify criteria for assessment of performance.
- Government must be careful in setting the definition or risk incentivizing inappropriate behavior.
- Risk of performance rests on contractor.
- Contractor must have problem-solving capability.

Example(s):

- If the government wants to increase readiness for a platform, perhaps it should buy readiness, not spare parts. If the government buys spare parts, it incentivizes the contractor to sell more parts, rather than making the investment to increase durability and reliability beyond current contractual minimums.
- Contract for copies, not copy machines.

NON-TRADITIONAL INCENTIVES

Contract Incentive:

Incentive Relationship Strategy: X

Description: Consideration is a fundamental tenant of government contracts. However, consideration doesn't have to be monetary. Incentives for industry to do business with the government can take other forms.

Target of Use: Limited only by imagination.

Elements of Use:

- Can be an exchange of intangible items that have value in the marketplace.
- Can be an exchange of services or products that can be provided or shared by the parties.

Pros:

- Encourages rethinking traditional requirements and relationships and looking at underlying results government is trying to accomplish.
- Rewards contractor innovation and capitalizes on contractor skills or capabilities.
- Provides opportunities for success that otherwise might not have been available.

Cautions:

- Requires change of thinking that may not be broadly acceptable to the government contracting process.

Example(s):

U.S. Army Space and Missile Defense Command (SMDC) "Foot in the Door" Contracts

"Foot in the Door" contracts are unfunded small studies/analyses identified to industry. The program is designed for new small businesses and businesses that want to expand their customer base. Industry is told that performing the studies will cost a company $25-50K with government funding limited to no more than $2,500. The incentive to industry is:

- Becoming a prime contractor to the command.
- Having "U.S. Army SMDC" listed as their customer.
- Establishing a past performance record.
- Breaking into a new area and demonstrate expertise.

In effect, the government's consideration for these procurements ARE the contracts themselves coupled with a token amount of dollars.

U.S. Army Space and Missile Defense Command "Commercial Rights

Exchange"

SMDC is also exploring exchanging commercial rights for money or other consideration. In the first instance, an entrepreneur offered SMDC $6 million in exchange for the commercial rights to the SMDC free electron laser program. The program had been zeroed out by Congress and Boeing (the prime contractor) had no interest in finishing the program with company funds. SMDC then negotiated a three-party arrangement. The entrepreneur gives Boeing $6 million, Boeing finishes the program for SMDC, and SMDC signs over the commercial rights to the entrepreneur. In this case, the deal collapsed when Boeing insisted on a government contract to finish the program, which SMDC couldn't execute.

U.S. Army Space and Missile Defense Command "Exchange of Service"

Hughes Space and Communications offered SMDC $250,000 worth of free satellite communication time per month if SMDC would write a contract that allowed other customers to ship funds to SMDC for obligation on the contract. This would enable Hughes to take advantage of the guaranteed nature of the government's contracting and payment process. Hughes could then use normal voucher/billing procedures. In this case, the deal collapsed because Hughes found another contract to use.

OWNERSHIP CONTRACTING

Contract Incentive:

Incentive Relationship Strategy: X

Description:

During requirements development, government should think through the ultimate results it seeks and state the requirement in a way that incentivizes the contractor to drive for that result. The government should contract for the output or problem you it wants solved and not for an interim step or government-proposed solution.

Target of Use:

- Part of the acquisition strategy for any requirement.

Elements of Use:

- Use when not sure of the best solution.
- Use when looking for creative ideas.
- Supports performance-based solutions.

Pros:

- Encourages the government to rethink traditional requirements and to look at underlying results it is trying to accomplish.
- Rewards contractor innovation and capitalizes on contractor skills or capabilities.
- Incentivizes contractor performance based on those results.

Cautions:

- Government must be able to identify performance criteria for assessment of performance.
- Government must be careful in the definition or make a mistake and end up incentivizing inappropriate behavior.
- Risk of performance rests on contractor.
- Contractor must have problem-solving capability.

Example(s):

- If the government wants to increase readiness for a platform, perhaps it should buy readiness, not spare parts. If the government buys spare parts, it incentivizes the contractor to sell more parts, rather than making the investment to increase durability and reliability beyond current contractual minimums.
- Contract for copies, not copy machines.

PERFORMANCE-BASED INCENTIVES

Contract Incentive:

Incentive Relationship Strategy: X

Description:

Performance-Based Incentives are targeted at rewarding superior performance and penalizing substandard performance.

Target of Use:

- To induce better quality performance and may be positive, negative, or a combination of both.
- They should be applied selectively to discourage inefficiency and to motivate contractor efforts that might not otherwise be emphasized.

Elements of Use:

- They focus on the most important aspects of the work, rather than each individual task.
- Where negative incentives are used, the incentive selected should represent as closely as possible the value of the service lost. This amount can be computed by determining the percentage of contract costs associated with each task. For example, if a given task represents ten percent of the contract costs, then ten percent will be the potential maximum deduction in case of task failure. Similarly, if a task is not performed according to the requirements stated in the contract, deductions can be computed based upon tables or formulas designed to reflect the value of substandard output.

- Effective performance-based contracts:
  - Define work in measurable, mission related/terms;
  - Contain performance standards;
  - Include quality assurance plans for measuring performance; and
  - Provide financial incentives and penalties based on performance.

- Performance incentives should be challenging, yet reasonably attainable. The goal is to reward contractors for outstanding work but not penalize them for work that is fully satisfactory but less than outstanding.

- The definitions of standard performance, maximum positive and negative performance incentives, and the units of measurement should be established in the solicitation. They will vary from contract to contract and are subject to discussion during a source selection. Care must be taken to ensure that the incentive structure reflects both the value to the Government of the various performance levels and a meaningful incentive to the contractor.

- Incentives should correlate with results. Contractors should not be rewarded for simply meeting minimum standards of contract

performance and should, instead, create a proper balance between cost, performance, and schedule incentives.

- The incentive amount should correspond to the difficulty of the task required but should not exceed the value of the benefits the government receives. Ensure that desired results are realized (i.e., that incentives actually encourage good performance and discourage unsatisfactory performance). Verifying the effectiveness of the incentives used is important.

- Past performance "report cards" per FAR 42.15 should reflect adherence to performance requirements when a performance work statement (PWS) has been used. Performance under performance-based service contracts (PBSC) provides better data for evaluation of past performance under other solicitations. A powerful incentive of excellence and customer satisfaction is created when contractors know their performance will influence future award decisions.

Pros:

- Profit is tied to achievement of specific technical performance objectives, delivery schedules, or cost control objectives.
- Can combine multiple incentive arrangements within a single contract. (e.g., use both an incentive fee as well as award fee combined with cost reduction incentives.)
- Directs contractor management attention to desired performance.
- Improves communication.

Cautions:

- Requires real communication between the parties and within the government organization to ensure that performance objectives, measures, and any other incentives are understood as part of the overall objectives of the program.
- Structuring all incentives to work together and drive the desired contractor behavior is likely to be complex.
- Processes and procedures for the application of incentives must be documented and understood.
- Care must be taken to ensure there is a balance in the incentives.
- Requires constant monitoring and attention. May create complex administrative tasks.
- Cost tracking at the performance level must be consistent and detailed to ensure baselines are followed.

Example(s):

1. Department of Energy Site Cleanup

The Department of Energy (DOE) is more dependent on good contractor performance than any other agency – 90 percent of its $15 billion budget is applied to contracts, with the majority of the dollars going to the labs.

Without proper management, training, and focus, there can be problems. In 1995, DOE's performance based incentive (PBI) program contained $14.2 million in fees covering 34 incentives with 86 objectives. Contractors were paid incentives for work done before the fees were instituted and for work that was never completed.

In 1997, the DOE Inspector General criticized the use of performance incentives at waste sites and labs. Incentives were identified as lenient, and monetary payments were made for less than satisfactory results. Fees were paid for work performed before fees were established. Performance targets

were vague and not results-oriented.

In 1998, after a year of focused attention on improvement, incentives became specific and thresholds for acceptable performance were raised. Development of the incentives included participation of not only site management, but also staff. Performance measurement was transformed to a management process and taken out of the bureaucracy. The focus on defining what needs to be done, not how, freed contractors to exercise ingenuity and creativity to meet requirements and to come up with cheaper and better ways of accomplishing work.

The use of performance-based incentives (PBI) tied extra fees to specific critical work efforts based on a preset schedule in the contract. For example, at the Hanford site in Washington State, the contractor developed an approach that cut 16 months and $77 million from a previous schedule and estimate.

2. State of Virginia Construction

The State of Virginia recently awarded contracts for reconstruction and improvement of critical interchanges in the DC Metro area. This $350 million project includes building or reconfiguring more than 40 bridges and ramps and 21 traffic lanes. The effort must be completed on time and within budget. Not only are funds limited, but any delay in completion or major divergence from the schedule could wreak havoc on commuting in the area. This would have a direct impact on the cost of doing business within and around the DC Metro area since the interchanges are essential traffic points on the north-south interstate transit routes. Finishing early results in cost savings to the commuter, consumer, and taxpayer. So critical are these savings, in fact, that the following incentives are included:

- $10M bonus for early completion (9 months early) of first two phases (value of phases is $120M). $5m bonus if finished 6 months early.
- Negative incentive of $30,000/day if work is late.

3. State of California Earthquake Reconstruction

In 1994, an earthquake caused considerable damage to the highway infrastructure in and around the Los Angeles area. The damage blocked the most heavily traveled road in the United States, the Santa Monica freeway, closed a major north-south interchange north of the city, as well as other bridge and road damage. It was extremely critical to reopen the roads and rebuild the bridges. To accomplish this, the State of California designed an extremely aggressive incentive structure on a fixed price contract to ensure earliest completion of the repairs and reconstruction.

This incentive structure included an early completion incentive of $200,000 per day if it was completed ahead of schedule. The contractor completed the work in 66 days, 74 days early. He was paid a $14.8M incentive in addition to the $14.9M project price. According the State of California, this resulted in savings of $1M per day from the avoidance of lost productivity.

PERFORMANCE-BASED PAYMENTS (PBP)

Contract Incentive: X

Incentive Relationship Strategy:

Description:

Common in commercial terms and conditions, performance-based payments is an effective means of providing incentives through contract financing with reduced burden to both the government and industry.

Target of Use:

- Contractors who might otherwise not be able to compete or have the opportunity to successfully perform due to a variety of legitimate reasons.

Elements of Use:

- PBPs can be provided "only to the extent actually needed for prompt and efficient performance, considering the availability of private financing" (FAR 32.104 (a)).
- PBPs cannot exceed 90% of the price prior to the delivery payment (OUSD DDP Memo, subject.: Performance-Based Payments, Nov 9, 1998).

Pros:

- The approval of commercial performance based payments (FAR 32.2) in association with a FAR Part 12 commercial acquisition provides additional incentive for industry to enter the government marketplace.
- FAR Part 32, Contract Financing changes now distinguish between commercial and non-commercial financing.
- FAR Subpart 32.2, Commercial Item Financing, allows for the use of commercial financing arrangements that have been determined to be appropriate or customary to a particular market segment.
- The government is no longer limited solely to the use of delivery payments, which are made after an item is tendered for delivery and accepted. Financing payments such as advance and interim payments can now be used on contracts for the purchase of commercial items.

Cautions:

- While performance-based payments require the identification of qualified or capable sources in order to foster competition, the policy emphasizes the use of market research to promote the use of commercial items as the first choice in meeting government requirements and non-developmental items (NDI) as the second choice.
- Emphasis on commercial and NDI products applies at both the system and component levels.
- There is a requirement to determine standard business practices of the commercial marketplace. This relates directly to the FAR Part 12 contract clause requirement that specifies that clauses must be consistent with standard commercial practices for the acquisition of the item as identified in market research.

REDUCTION IN TOTAL OVERHEAD COSTS

Contract Incentive:

Incentive Relationship Strategy: X

Description:

Reduce Total Overhead Costs (TOC) over program life by focusing on instant and follow-on contracts. Most effective in initial stages of program where there is a reasonable ability to model TOC, and sustainment costs are large in relation to development and production.

Target of Use:

- Programs beginning the acquisition cycle are the best candidates with the greatest opportunity for savings.

Elements of Use:

- Include threshold and objectives in the Operational Requirements Document (ORD).

Development contracts

- Include prediction and evaluation of TOC as a significant factor in source selections, using model agreed upon with offerors during early industry involvement.
- Provide profit/fee incentives for progress toward achieving the objectives.

LRIP and Production

- Use pricing curves in to relieve contractor from excessive cost justification and certification in follow-on efforts.
- Use to reward efforts that come in below pricing curves.

Total Systems Support Responsibility (TSSR)

- Provide incentive for contractor to earn follow-on contracts on a long-term basis if TOC objectives are being met.

Pros:

- Focuses contractor effort on the total program from inception through production and sustainment. The contractor can earn both profit/fee incentives on instant and long-term business by optimizing TOC performance, rather than giving up current profit/fee to design in long-term savings.
- Focus is on all contract cycles, not just on immediate contract.
- Government focuses on continuous basis on impacts of actions and decisions on TOC, not just on cost, schedule, and performance of the current phase.

Cautions:

- Decisions may be based on uncertain models of future costs requiring more sophisticated models.
- May affect ability to plan for government depot “core” responsibilities

since TSSR could be a contractor responsibility.

- For long-term, complex programs, there may be difficulty in keeping models and incentives current due to instability in funding or requirements.
- Motivation of parties must be kept in focus through different acquisition cycles in order to adjust incentive structure effectively.

RELIABILITY IMPROVEMENT WARRANTY (RIW)

Contract Incentive: X

Incentive Relationship Strategy:

Description:

A reliability improvement warranty can motivate the contractor to design and produce equipment with low failure rates and low repair costs during operational use.

Target of Use:

- The RIW can be introduced at any point in the item's acquisition cycle.
- Introduction early in the acquisition cycle provides greater opportunity to structure a total incentive package, maximizing cost reduction and increasing earned-incentive opportunities.

Elements of Use:

Suggested elements of a RIW can include:

- Item identification and standard definitions.
- Essential performance requirements.
- Warranty period.
- Performance warranty minimum requirements (e.g. MTBF, MTTR, turnaround) and provision for warranty of replaced items.
- Identification of planned operative hours, the method for recording, and provision for contract adjustment if hours differ from planned.
- Incentive payment provision should state range of reliability with payment schedule for exceeding and penalty for falling below the range.
- Transportation responsibilities.
- Remedies and exclusions specifying additional terms, limitations and any peculiar requirement affecting the warranty.

Pros:

- Effective when used with performance specifications where long-term contractual relationships are envisioned.
- Contractor can be motivated to design and/or upgrade systems at investment cost that may or may not be shared by the parties, to reduce future repair costs by increasing reliability.
- A reliability improvement warranty can provide:
  - An incentive for the contractor to earn additional profit.
  - Government's assurance that any configuration changes made by the contractor does not degrade long-term reliability.

Cautions:

- The need for credible data regarding the operational environment of the end item and the logistics channels through which the item flows is essential. The data is essential for failure analysis to identify areas for improving reliability.
- It can be difficult to:
  - Judge the time period between delivery, acceptance, and installation

of the item in the field, and the period for removal and return of the item to the contractor for repair

- Predict the Mean Time Between Failures (MTBF).

SHARE IN SAVINGS (SIS)

Contract Incentive:

Incentive Relationship Strategy: X

Description:

Contract that encourages contractors to apply ingenuity and innovation to get the work done quickly and efficiently and share in the savings attributed to their planning and execution.

Target of Use:

- Best used when ROI is big enough to make this a viable business proposition for the contractor.
- Shifts risk from government to contractor with commensurate opportunity for contractor reward for successful performance.
- Requires partnership approach between government and contractor due to risks involved.
- Idea is to allow contractor to apply ingenuity and innovation to efficiently deliver the requirement instead of dictating the government preferred approach.
- Fixed-price contracts place emphasis for results in schedule and program costs on contractors if they wish to increase profits.
- Performance incentives can be added for particularly critical areas.
- Three types of share-in-savings situations:
  - **Revenue enhancement:** an agency seeks to enhance revenue by collecting taxes or user fees.
  - **Cost avoidance:** an agency wants to reduce a net expenditure by cutting the cost of an operation. The Government shares automatically in any savings.
  - **Agency reward:** an agency wants to reduce a net expenditure and wants to keep the savings for its own use.
- SIS contracts can also guarantee no fee, promising payment only when benefits result from the contractor's efforts. Offeror pays upfront costs and gets nothing for failure.

Elements of Use:

- Need to be able to establish baseline and methodology for calculating benefit pool. The baseline and methodology *do not* need to be perfect, as long as there is advance notice of what the baseline/methodology is, contractor buy-in, and consistent application post-award.
- The government identifies a monetizable benefits pool that successful contract performance will achieve. The benefit pool may be "on-budget" (e.g., reduced O&M spending or reduced spare parts procurement) or "off-budget" (e.g., improved system performance, decreased downtime).
- The government then pays the contractor an agreed-upon portion of the monetizable benefits earned under the contract. In a l00% share-in-savings contract, the contractor's entire payment is in the form of a

percentage of benefits realized. Alternatively, the contractor may be paid a base fee/profit plus a (smaller) percentage of the benefits
- In a reinvestment variation, there can also be an election by the contractor to re-invest all or part of that savings into the product, program, or service. In that event, the contractor's contribution would be matched by the government at a specified share. The effort to be performed would be subject to mutual agreement between the parties but the sharing would be pre-established as a part of the incentive plan.

Pros:

- The government pays only for results; a level of effort isn't enough.
- The incentive contributes to affordability from the standpoint of developing initiatives that would reduce overall instant contract or to the program's Life Cycle Cost
- Allowing the contractor to decide whether the saving are taken as profit or reinvested with the benefit of an added portion from the Government. If reinvested, contractor has an opportunity for product enhancement that might not otherwise have been funded. The result could provide an improved product or competitive advantage for the contractor in future competitions.
- Contractor strongly incentivized for results and penalized for poor performance-- the better the results, the higher the payment to the contractor. At the extreme, the contractor is not paid at all if the contract achieves no benefits for the government
- Contractor incentivized to deliver "A team" and innovative solutions to problems
- Focuses the government on results, not process.

Cautions:

- The Government and the contractor must agree if there is a decision to re-invest.
- The financial mechanics may be difficult to arrange given the issues with comptroller processes and the current appropriation laws
- May be difficult for small businesses to participate as primes (this form of contract may often require upfront contractor investments that are paid back only in out years)

Example(s):

Department of Energy Federal Energy Management Program

The Energy Department is using the share-in-savings approach to help federal agencies reduce their energy consumption, as required by the 1992 Energy Policy Act and an executive order requiring a 30-percent reduction in energy consumption in federal buildings between 1985 and 2005. The federal Government is the nation's largest energy consumer using $4 billion worth of energy to heat, light and operate its 500,000 buildings each year.

To achieve the 30-percent reduction by 2005 would require energy savings worth $1 billion a year, requiring an estimated investment of $5 billion in energy savings equipment. To overcome this initial financial investment, Energy's Federal Energy Management Program (FEMP) has crafted energy savings performance contracts (ESPCs) (see 10 CFR 436).

Under these contracts, energy service companies pick up all the upfront costs of identifying a facility's energy needs and then buying, installing, operating and maintaining energy-efficient equipment to cut energy costs. During the contract, the firm owns the equipment. When the contract ends, the Government owns it. In payment, the companies get a share of energy savings generated by the improvements during the contracts, which can last

as long as 25 years.

FEMP negotiated a series of contracts valued at $5 billion and modeled on multiple-award, indefinite delivery/indefinite quantity contracts with firms in six regions across the country. Under these contracts, agencies use delivery orders to contract with firms that already have competed and won slots on a regional "Super ESPC roster." An agency can select a single company or request proposals from more than one, without advertising the procurement. FEMP awarded the first Super ESPC, covering the Western Region of the United States, in May 1997 to five firms. A second, covering the Southeast, was awarded in January 1998.

Army Information Technology Applied to Logistics

SIS is directly applicable to Logistics Modernization. The Services have logistics systems several generations behind Information Technology state of the art. For example, the Army does not yet have total asset visibility in its decentralized parts system, to the level it believes is required to support the "right part, right time, right place" concept. By updating technology, the Army could quickly locate and deliver spare parts while stockpiling fewer parts. System benefits would include fewer purchases of spare parts and save the Army $4B over 10 years.[20]

With SIS, the winning contractor would be paid in the form of a negotiated percentage of the savings that the military would realize from making fewer purchases of spare parts. This focuses the Government and vendors on the Government goal of generating results for agency missions and taxpayers.

Better performing contractors, those that have high hourly rates, are frustrated by the need to compete against manpower-intensive contractors for level-of-effort work in which the contractor can get paid even if it performs poorly. SIS allows quality contractors to compete more successfully, because the contractor gets paid based on benefits achieved rather than costs incurred. To be successful, SIS procurements must be able to value the benefits that a contract is supposed to achieve.

SHARED INFRASTRUCTURE CONTRACTING

Contract Incentive:

Incentive Relationship Strategy: X

Description:

For government furnished items, allows the contractor unrestricted rent-free use of these items for both commercial and government business in exchange for the contractor's willingness to upgrade the property to reflect advances in technology.

Target of Use:

- This incentive is specifically meant to be used in large performance based contracts for Information Technology infrastructure or seat management.
- Applies to contracts with government furnished property (GFP) that can be used within a commercial application by the contractor in the performance of a government contract.

Elements of Use:

- Allows contractor to use existing infrastructure or make an investment to reduce operation and maintenance costs.
- Use and upgrades are at no cost to the government

Pros:

- Allows the government to benefit from latest commercial technology
- Gives the contractor greater capacity across the enterprise without upfront investment on his part.
- Lowers the industry entry costs for new business areas

Cautions:

- Possible issues with appropriation laws
- Care must be used to select a partner who can develop the commercial potential

SUBCONTRACTOR PROFIT/FEE POOLS

Contract Incentive: X

Incentive Relationship Strategy:

Description:

An approach to establish subcontractor/fee pools in the prime contract for the prime to reward/encourage performance of critical subcontractors.

Target of Use:

- Systems contract where there are concerns about the performance/delivery schedule of critical subsystems and components.

Elements of Use:

- Both the prime and the critical subcontractors have the opportunity to earn more profit/fee by improving performance.

Pros:

- Motivates better performance from both the prime and the critical subcontractors
- Provides flexibility for the prime to target key subs
- Provides motivation for both prime and subs
- Recognizes that not all subs are of equal importance to the contractor
- Focuses prime's and sub's attention on critical areas of performance interest.
- Structure and rules individually established (e.g. disposition of unearned fee)

Cautions:

- Costs money
- Invites scrutiny from GAO/Auditors/IG and media
- Must ensure prime doesn't negotiate sweetheart deal (price/schedule), then throws money away without true benefit.
- Privity of Contract issues associated with pool allocations

SUBCONTRACTOR VALUE FOCUSED RELATIONSHIP

Contract Incentive:

Incentive Relationship Strategy: X

Description:

Prime contractor would be responsible to establish a supplier network that would maximize the introduction of commercial sources into the overall program structure. Rewards would be shared between the prime and selected suppliers down to the third tier.

Target of Use:

- All new major programs.
- Industry new to the government marketplace.

Pros:

- Broadens the industrial base by involving companies that may not have previously done business with defense contractors
- Has ability to introduce more commercial technology into defense requirements
- Has ability to deal more effectively with life cycle issues such as parts obsolescence
- Leverage buying power of the total supplier chain by taking advantage of tools like broad purchase agreements

Cautions:

- Requires government to change its process regarding things like cost data and oversight.
- Government may lose some control in requirements determination

TOTAL SYSTEM PERFORMANCE RESPONSIBILITY (TSPR)

Contract Incentive:

Incentive Relationship Strategy: X

Description:

Concept involves a single contractor assuming complete responsibility for overall performance in the weapons systems field of operations and sustainment.

Target of Use:

- Operation and Sustainment contracts

Elements of Use:

- Integrating contractor for all contractors supporting a system.
- The contractor has incentive to meet the budget and earn additional profit through cost sharing of any under run.
- Sustainment is delegated to contractor with government (PMO) acting as overseer and retaining responsibility for meeting operational needs

Pros:

- Encourages the government to rethink traditional requirements and to look at underlying results government is trying to accomplish
- Rewards contractor innovation and capitalizes on contractor skills or capabilities.
- Incentivize contractor performance based on those results

Cautions:

- Government must be able to identify performance criteria for assessment of performance.
- Government must be careful in the definition or make a mistake and end up incentivizing inappropriate behavior.
- Risk of performance rests on contractor.
- Contractor must have problem solving capability

Example(s):

Air Force F117A Sustainment
Lockheed Martin Skunk Works (LMSW) is the integrating contractor for 180 contractors that support the F117. The contractor has incentive to meet the budget and earn additional profit through 50/50 cost sharing of any underrun. Sustainment has been delegated to LMSW, with the SPO acting as overseer and retaining responsibility for meeting operational needs. This involves a $90M cost savings over the next eight-year term of the contract (five-year base plus three-year option) for the F117 SPO. LMSW has committed to another $80M in savings over the same period.

The Air Force intends to control performance and costs through a three-pronged incentive. The first prong is an *award-fee feature* (three percent of target cost). This will measure the contractor's performance in the areas of management, technical performance, subcontract management, and customer

support. The second prong of this incentive is an *incentive fee performance matrix* (seven percent of target cost) that will measure seven areas of contractor performance. These areas cover most of the major categories of materiel management and their affect on operational readiness. The third and final prong has a *fifty-fifty cost share relationship*, which shares equally any overrun or underrun.

To increase readiness for a platform, the government should buy readiness, not spare parts. If the government buys spare parts, it incentivizes the contractor to sell more parts, rather than making the investment to increase durability and reliability beyond current contractual minimums.

- Contract for copies. Not copy machines

TOURNAMENT CONTRACTING[21]

Contract Incentive: X

Incentive Relationship Strategy:

Description:

Competition is structured as an auction and prototype competition, with the winner awarded a "prize" for the best product. Auction component consists of the participants paying a fee for entering the tournament, which could be used to defray the cost of the prize or offset the cost of conducting the competition.

Target of Use:

- Research and Development
- Opportunities for commercial application of the developed product

Elements of Use:

- Government commits to paying the research tournament winner a prize.
- Selection of winner is based upon specified priorities established by the government and included in the RFP.
- Quality of design is most important.

Pros:

- Promotes innovation on part of offerors.
- Provides for firmer cost estimates for equipment since costs would be based on completed hardware vs. conceptual hardware estimates.
- Prototype can be evaluated, uses clarified, before production dollars are committed
- Supports thrust toward modeling and simulation of new systems.
- Requires less government oversight since the offeror has already developed the item and is offering it at fixed price to the government.
- Contractors can specify within their proposal what they consider to be appropriate rewards or fees for alternative or additional performance goals.

Cautions:

- Determining the prize requires careful consideration and evaluation
  - Set award level based on value to government – how determined
  - Based on formula
  - Other determinants

Appendix C: Description of Matrix

The matrix described in this report is based on the concept that a successful business relationship contains a balance of shared risk. As more risk is accepted, greater compensation is available to be earned. Said another way, the basis of a satisfying relationship is effectively and fairly balancing risk or enabling sufficient compensation opportunity for one party to accept greater risk. The contractual incentives employed must support this concept.

Original Concept

The columns on either side of the risk interface represent an initial attempt to define factors (decision points) recognized as important by both government and industry. They are components of an overall contract strategy and are considerations in crafting a successful business relationship.

The matrix lists the contractual incentives discussed in the Phase I report and in Focus Group 1 in the first column. Each subsequent column identifies a factor (decision point) considered in crafting the business relationship and by definition, the contract strategy. The risk trade interface separates the "generally" government and "generally" industry parameters. An "X" in a box would indicate that the incentive could apply in that instance. The attached matrix follows this discussion and is part of this appendix.

Incentive Decision Process is Too Complex

The matrix, while useful in gaining a perspective into the breadth of influences and factors that guide the government's decisions on strategy and the contractor's decision on participation, did not provide the multi-dimensional effectiveness and ease of use required to be an effective tool. However, it did point to the concept of an incentive application decision tool structured and developed as an "expert system" application.

Appendix D: Innovation in Contractual Incentives – Phase I Report

INNOVATION
IN
CONTRACTUAL INCENTIVES

PHASE I REPORT

Prepared by Science Applications International Corporation
Under Contract DASW01-95-D-0076, Delivery Order 0037
For the Deputy Assistant Secretary of the Army (Procurement)

EXECUTIVE SUMMARY

The Army continues to cope with budget shortfalls. It is essential that savings resulting from Army support of the Revolution in Business Affairs be redirected to pay for the overall shift of resources from maintaining infrastructure to force effectiveness and modernization requirements.

A critical component of this effort must be a reduction in the cost of contract performance. This research study, commissioned by the Deputy Assistant Secretary of the Army (Procurement), examines the changing business relationship between Government and contractor, and explores new approaches to incentivizing performance through innovation in the structuring of contractual incentives.

Structure and Scope of the Study

The study is divided into two phases. Phase I describes research and identifies practices relevant to incentivizing Army contractors. The information is a product of a literature search of books, periodicals, and other research; participation in major symposia; interviews; visits with program and industry managers; and comments and insights from knowledgeable players and experts in the acquisition community. The main product of this phase is a research baseline for investigating potentially more advanced and innovative approaches to increasing performance through *contractual incentives*.

As used in this study, the terms *contractual incentives*, *contract incentive*, and *incentive relationship* are defined as follows:

> *Contractual incentive* includes both contract incentives and the total incentive relationship between the Government and the contractor.
>
> *Contract incentive* means profit, fee, or other monetary incentives, as well as non-monetary incentives, embodied in or arising directly from the terms and conditions of the contract.
>
> *Incentive relationship* refers to the total business process that impacts the contractor's motivation, from market research and early industry involvement, through solicitation of offers, source selection and negotiations, award of contracts, and post-award performance by the contractor and Government of their respective responsibilities.

The study of the acquisition process and its reform is by nature extensive in its content. This study focuses on one component—a change in the Army's approach to its business relationship with industry. Specifically, it explores the development of a range of innovative contractual incentives that may be applied in the Army's business relationships with its industry partners to achieve the highest quality goods and services, quickly, and at the lowest total ownership cost.

In Phase II, the insights gleaned from Phase I will be used to explore new and innovative approaches to the structure and implementation of contractual incentives. Phase II will engage the talents, opinions, and suggestions of key senior industry and Government business leaders, as well as those of industry and Government contracting officers and program/project managers. Phase II will culminate in the delivery of a report that identifies a range of innovative contractual incentives that the Army can employ and examines any issues associated with their implementation. This includes not only incentivizing the performance of existing contractors, but also increasing the number of contractors desiring to do business with the Army.

Dynamic Nature of the Contracting Environment

The report begins by reviewing the evolution of the Government-contractor relationship and the use of contractual incentives from World War II through the present era of acquisition reform. It examines some major milestones during this period that affected not only the approach to the form and complexity of the business relationship, but also its redefinition. It further sets the stage for understanding how the complex set of laws, regulations, and policies created a cost burden on both Government and industry that is too high in today's competitive and rapidly evolving high technology environment. Key points discussed are the following:

- Prior to 1990, the acquisition environment was driven by a complex business relationship between Government and contractor that developed over forty years. Within the context of this relationship, the planning and implementation of contractual incentives to achieve desired performance often did not meet program goals. The changes and reforms that occurred were intended to respond to changing perceptions of the needs of the DoD, budget declines and buildups, and most often to address the perceived causes of problems that occurred.
- Techniques for structuring contractual incentives have evolved over time. After WWII, the federal procurement process became increasingly complex. As laws and policies proliferated and regulatory implementation increased, more people were required to implement and manage the processes involved. Costs and complexity increased geometrically. The Government contract support organizations of contracting businesses grew throughout the period also and became a cost burden, not just to one contract, but to the infrastructure of the company and its Government-oriented business segments.
- Today's concerns for "better, quicker, cheaper" are similar to the issues raised since the 1950s. These issues include the structuring of the risk-reward relationship, the operation of incentives, and the motivation of Government contractors. This forty-year period can be characterized by two often-conflicting goals:
    - The Government sought to maximize contractor performance and gain the best product for the lowest price.
    - The contractor tried to minimize risk while maximizing profit and delivering to the Government what was expected.
- Of the many regulatory and policy events over this fifty-year period, several can be described as keystones. Others involved critical changes in incentive approaches, changes that affected the achievement of the incentive, or those that impacted doing business with the Government through a change in the playing field (i.e. ASPR to FAR, CICA, FASA, FARA). In most cases, they were part of a continuing search for improvements and flexibility to better meet defense needs by motivating excellent contractor performance.
- From the 1970s forward, many recognized the need for changing the approach to the business relationship. There were many commissions and studies, all with similar themes in their recommendations.
- Change didn't take hold until driven by two events:
    - Realization that the acquisition environment within which DoD operated had changed beyond the limits of the existing acquisition system's ability to adjust or evolve.
    - Leadership that not only talked about change, but also accepted the responsibility for implementing change, and formed a partnership with industry to make change a reality.

Motivation as the Cornerstone of the Business Relationship

The report next examines the differing motivations that drive contractor performance and Government behavior, and the impact this has upon the approach to the business relationship and the structuring of contractual incentives. To understand contractor motivation, several studies are reviewed. For the Government perspective, a recent Air Force study on motivation focusing on schedule performance is reviewed. Key points of this chapter include the following:

- Developing contractor performance incentives must be a continual process that adapts to changes in the life cycle of the program, and the contractor's performance over the life of the contract. Successful incentives depend upon understanding the type of work (hardware, software, supplies, services), the phase of the work (development, production, sustainment), the goals of the Government and the contractor organizations, and the respective players who enter into an agreement.

- Achievement of the result, whether a product or service, involves a constant series of tradeoffs. Achieving the right balance among the tradeoffs depends on effectively translating the program's goals into an effective contract strategy. Success depends on understanding differing motivations and developing balance in the incentive relationship between the contractor and the Government.
- The studies on contractor motivation are generally consistent in their overall findings—profit may not be the overriding motivator. It is also affected by survival, growth, market, and other long-range and financial objectives of the firm. Instant contract profit, in fact, may not be a motivator at all.

Regarding Government motivation, key points discussed include the following:

- In general, the defense "buyer" is usually a hierarchy and not a single agent.
- Organizational and personal goals can directly affect the business relationship. They can become a determining factor in the business case, driving what is incentivized, and how it is incentivized.
- Government must focus on the primary Government-contracting objective: to establish a business relationship that requires the contractor to assume normal business risks and provides the contractor with incentives for increased efficiency or performance that results in lower costs.

Marketplace Barriers and Solutions

The report next examines the issue of achieving rapid access to commercial marketplace advancements in the key underlying technologies necessary for military superiority.

Rapid access to this high-tech commercial marketplace has been complicated by the twin marketplaces that coexist in the American economy: commercial and Government. Developing effective business relationships and applying innovative contractual incentives depends upon understanding the forces that operate in each marketplace. In the commercial marketplace, the goal is to get a product or service to market first and price it according to what the market will bear, or risk losing significant market share. The Government, however, does not operate within a free market environment and has traditionally required extensive law, regulation, and policies as a substitute for market forces.

This system now creates significant barriers to technology access. The pace of commercial technology advancement in many sectors exceeds the Government sponsored technology efforts. The DoD and the Army will not be able to continue to get cutting-edge weapon and support systems if doing business with potential contractors is associated with disincentives, such as extensive reporting, regulation, compliance, and oversight requirements. These now represent barriers to DoD's purchase of state-of-the-art commercial items, the conversion of defense companies to the manufacture of commercial products on a competitive basis, and the integration of the defense and commercial industrial bases.

The subject of dual-use capable firms and firms that rely upon DoD for much of their business illustrates some of these issues. Barriers identified by commercial industry include the following:

- Unique laws and regulations imposed on Government contractors.
- Instability of requirements and budget which make it difficult to predict the market.
- Imposition of Government-unique rules on commercial subcontractors.
- Government rights to contract termination at will.
- The perception that great risk of civil and criminal penalties can ensue for inadvertently failing to comply with a Government rule or regulation.
- Companies that do both commercial and Government business are forced to maintain separate business processes and sometimes separate facilities at great expense and little value.

Providing Incentives

Providing incentives for entrants to do business with the Government, thus providing multiple sources for new technology, products, and ideas, is a major issue. Perhaps the single most important contractual incentive

that can be applied is to adopt the principle that, to the maximum extent possible, the Government shall not impose on its contractors and subcontractors any Government-unique terms and conditions unless:

- Market forces do not adequately regulate that particular aspect of the buyer-seller relationship; or
- The financial and ethical integrity of the Government acquisition process is not adequately protected; or
- National policy requires a unique term or condition.
- There is an appropriate balancing of the Government's interest with the cost to the Government and industry of applying the unique requirement.

Factors to Consider in Developing Incentives

For contractual incentives to be effective, the Government must demonstrate to the contractor that the contractor's objectives can best be met by helping to accomplish the Government's objectives. This takes a prudent and enlightened approach. The report provides an illustrative list of factors that contribute to developing effective contractual incentives. The primary purpose of the list is to form an initial baseline from which a comprehensive tool can be further developed and refined from the interaction and results derived in Phase II. These factors represent areas of discussion and interaction, and opportunities for partnership between Government and industry as they strive to build effective business relationships.

Concepts and Initiatives in Practice

The report summarizes and highlights selected programs and other acquisitions that represent a cross section of recent and current efforts to improve quality, improve performance, and/or decrease costs. It provides examples of changes in the Government's approach to contract incentives and incentive relationships. These examples are intended to stimulate discussion, refinements, and additional ideas during Phase II, which will consider not only these examples but also the many examples and experiences brought to the process by Phase II participants.

The report summarizes a broad spectrum of contractual incentives. Some are traditional while others are new approaches to changing the business relationship. The concepts and initiatives are categorized within two groups. (Figure 1.) The first, Contract Incentives, includes those concepts and initiatives that achieve their goals through the operation of the contract structure and/or specific terms and conditions. The second, Incentive Relationships, discusses those that achieve their goals through an acquisition or management approach or strategy. Many of the examples use combinations of these concepts and initiatives and in some cases those from more than one category.

Figure 1. Selected Acquisition Incentives

Contract Incentives

- Types of Contracts
  - FFP/FPIF
  - CPFF/CPIF
  - Award Fee
  - Award Term
- Structural
  - CR Provisional Fee
  - Special Contract Incentives
  - Incentive Reinvestment
- Organization and Individual
- Performance Based Incentives
  - Positive
  - Negative
- Warranties/Guaranties
- Cost Based Negotiations
- Terms and Conditions

Incentive Relationships

- Types of Contracting
  - Output Contracting
  - Ownership Cost
  - Share in savings
- Award Fee
- Value Engineering
- Profit Policy
- Design to Cost
- Life Cycle Cost
- Past Performance
- Price Based Acquisition (PAIV)
- Competition
- Restructure Business Relationship
- TSPR
- Technology Development
- IPT
- Communication
- CAIV
- Multiyear
- Competitive Sourcing
- Single Process Initiative
- Oversight Reduction
- Single Requirements Contracts
- Other Transactions

Summary and Approach to Phase II

- Reducing the cost of contract performance and reducing total ownership costs is a critical component in reengineering the acquisition framework necessary to support the shift in resources from maintaining infrastructure to force effectiveness and modernization.
- Success in this critical area, through a change in the approach to the business relationship with industry, opens the door to opportunities for innovation in the application of contractual incentives.
- The reengineering of the acquisition framework is providing an opportunity for new contractors to enter the evolving government marketplace.
- The new approach to the business relationship with industry is producing not only decreases in cost and in schedule cycle-time, but also corresponding increases in contract performance.
- The cross-section of government-wide initiatives and programs presented in this study presents many innovative examples.

Phase II will use the Phase I baseline to explore new and innovative approaches to the structure and implementation of contractual incentives and examine any issues associated with their implementation. Phase II will focus on the following areas:

- Expanding the list of factors to consider in developing contractual incentives.
- Addressing additional areas of consideration that are necessary to understand the issues associated with restructuring the acquisition framework and the approaches to the business relationship between Government and industry.
- Expanding the list of concepts and initiatives presented in the cross-section in Phase I.
- Examining evolving areas of innovation and recommending additional areas of innovation for study, based on the experiences and expertise of the industry and Government participants. These include areas such as output contracting[22], ownership cost contracting[23], and price-based acquisition[24].
- Considering the influence of other functional disciplines (e.g. budgeting, financial management, logistics, and so on) on the application of innovative contractual incentives.
- Addressing restrictions and opportunities posed by law, regulation, and policy.
- Addressing special topics as determined by the focus groups.

CHAPTER ONE: INTRODUCTION

> "…there is a pressing and urgent need to move DoD more rapidly toward the dual strategies embodied in the Revolution in Military Affairs and the Revolution in Business [Affairs]. These combined strategies, if successful, can insure the nation's national security well into the 21st century – against any adversary, and under any of a multitude of potential combat scenarios…"
>
> *The Hon. Jacques S. Gansler*
> *Under Secretary of Defense (Acquisition and Technology)*
> *Address to the National Contract Management Association*
> *Washington DC*
> *December 3, 1998*

For our soldiers to succeed today and into the 21st Century, they must be equipped with the best possible weapons. To provide these, the military is changing the way it operates—a Revolution in Military Affairs—and the way it does business—a Revolution in Business Affairs (RBA). Progress in the RBA, according Dr. Jacques S. Gansler, USD (A&T), is critical and urgent to support and pay for the overall shift of resources from maintaining infrastructure to the force effectiveness and modernization imperatives of today's environment.

Central to the RBA is re-engineering the acquisition framework to support this shift in resources. It is a vital challenge for the Army to build an acquisition framework that will enable it to field the highest quality defense products faster and at the lowest total ownership cost. Also needed is a first class installation and logistics system that places the needed equipment, parts, supplies, and maintenance capabilities where they are needed at the right time.

Prior to 1990, the acquisition environment was driven by a business relationship between Government and contractor that operated within an acquisition system of complex laws, regulations and policies, developed over forty years. Although adopted for laudable reasons, the system impacted the motivation of the Government and the contractor during this period and resulted in the planning and implementation of contractual incentives[25] that often did not meet program goals.

The Government-contractor business relationship also evolved against the backdrop of a dual commercial-DoD marketplace. Today, the need for access to advanced technology from the commercial marketplace is driving the Government to re-examine the basic nature of its relationship with contractors. In addition, factors such as the growth of information technology and the globalization of business are spurring high-technology companies to change many of their business practices, to become more efficient and responsive.

During the past decade, the DoD and the Army have begun to change the traditional control mechanisms used to ensure reasonable prices, on-time delivery, product quality and superior performance. Industry and Government have begun to successfully streamline the acquisition process, through legislation and policy changes aimed at compressing cycle times, reducing program costs, leveraging commercially available technologies and practices, and shifting from Government oversight to place more responsibility on the contractor through risk management procedures.

To achieve these "better, quicker, cheaper" goals efficiently, to benefit from the pace of commercial technology advancement, and to gain access to the innovation that high-technology companies offer, the Government and the Army must adopt many of the mechanisms and processes successful in the commercial marketplace. This means reexamining the Army's business relationships with existing and potential contractors. A critical component of this reexamination must be to develop a range of innovative contractual incentives that the Army can employ to ensure that it can procure the highest quality goods and services, quickly, and at the best value.

Purpose of the Study

This research study, commissioned by the Deputy Assistant Secretary of the Army (Procurement), examines the changing business relationship between Government and contractor, and explores new approaches to incentivizing performance through innovations in the structuring of contractual incentives.

Approach and Content

The study is divided into two phases. Phase I describes research and identifies practices considered relevant to incentivizing Army contractors. The information is a product of a literature search of books, periodicals, and other research in this and related areas; participation in major symposia; interviews; visits with program and industry managers; and comments and insights from knowledgeable players and experts in the acquisition community.

The main product of this phase is a research baseline for investigating potentially more advanced and innovative approaches to increasing performance through contractual incentives.

In Phase II, the insights from Phase I will be used to explore new and innovative approaches. Phase II will engage the talents, opinions, and suggestions of key senior industry and Government business leaders, as well as those of industry and Government contracting officers and program/project managers. Phase II will culminate in the delivery of a report that identifies a range of innovative contractual incentives that the Army can employ and examines issues associated with their implementation. This range of opportunities includes not only incentivizing the performance of existing contractors, but also increasing the number of contractors desiring to do business with the Army.

Scope of the Study

The study of the acquisition process and its reform is by nature extensive in its content. This study focuses on a change in the Army's approach to its business relationship with industry. Specifically, it explores the development of a range of innovative contractual incentives that may be applied in the Army's business relationships with its industry partners to achieve the highest quality goods and services, quickly, and at the lowest total ownership cost.

CHAPTER TWO: DYNAMIC NATURE OF THE CONTRACTING ENVIRONMENT

This chapter reviews the evolution of the Government-contractor relationship and the use of contractual incentives, from World War II through the present era of acquisition reform. It examines some major milestones during this period that affected not only the approach to the form and complexity of the business relationship, but also its redefinition. It further sets the stage for understanding how the complex set of laws, regulations, and policies created a cost burden on both Government and industry that is too high in today's competitive and rapidly evolving high technology environment.

Change In The Acquisition Environment

Prior to 1990, the acquisition environment was driven by a complex business relationship between Government and contractor that developed over forty years. Within the context of this relationship, the planning and implementation of contractual incentives to achieve desired performance, in many cases, did not meet program goals.

Available budget dollars often provided a cushion for the inefficiencies inherent in the government-contractor relationship, including the complexity and the regimentation of the contracting process. More specifically, the changes and reforms that occurred were intended to respond to changing perceptions of the needs of the DoD, budget declines and buildups, and most often to address the perceived causes of problems that occurred.

With declining development, procurement, and operations and maintenance budgets, these inefficiencies became more significant cash drains, drawing off funds that could be better spent to develop new technology, support existing systems, and provide badly needed force sustainment. According to a previous Secretary of Defense, William J. Perry, "The layer upon layer of organizations, legislation, regulations, policies and oversight, is an impediment to DoD's adoption of business processes that are characteristic of world-class customers and suppliers today." [26]

Comprehensive reform was needed to reengineer the acquisition process. Specifically, according to Dr. Perry, "…there must be a carefully planned, fundamental re-engineering or re-invention of each segment of the acquisition process."[27]

In the 1990s, as discussed later in this chapter and in Chapter Six, reform initiatives, and specifically innovative approaches and application of contractual incentives, are succeeding in changing the dynamics of the contracting environment that developed throughout the decades following World War II. Two recent laws—the Federal Acquisition Streamlining Act (FASA) and the Federal Acquisition Reform Act (FARA)—and a number of significant regulatory changes, including a rewrite of Federal Acquisition Regulation (FAR) Part 15 (dealing with how the Government chooses suppliers), FAR Part 12 (Acquisition of Commercial Items), and FAR Part 13 (Simplified Acquisition Procedures), have recently and dramatically decreased the rigidity and complexity that once marked the procurement process.

Further, productive dialogue between the Government and its contractors has improved the Government's ability to explain what it wants and the contractor's ability to respond constructively. Communication between contracting and program teams within Government, and between Government and contractor are vastly improved, producing better program results.

Due to a variety of factors, including the role of information technology and increased global competition, private industry in the 1990s has been rapidly transforming its way of doing business to compete successfully in the 21st Century economy. As a result, the factors motivating the behavior of contractors who do business (or would considering doing business) with the Government are also changing.

There has often been a disconnect between the incentives structured by the Government (often focusing on profit as the major motive) and the motivational factors driving the contractor (not always based on profit as a major motive). Incentives based on the wrong motives are at best ineffective and at worst costly to the mission and the taxpayer.

Consequently, the Government must adapt its approach to the business relationship and to incentivizing performance. These changes should target the business relationship between the Government and the contractor in such a way as to produce maximum value for taxpayers and for the organization in pursuit of its mission.

Structuring and implementing an effective incentive relationship, moreover, encompasses more than initiatives, change elements, policy memos, and rule changes. Incentive strategies must take into account the perspectives and motivations of not only corporate and policy level managers, but also the functional managers who have day-to-day responsibility for operating within the specific acquisition regulations and contract provisions.

Types of Incentive Contracting Relationships

A brief review of incentive contracts is appropriate to understand how they operate and their role during the historical timeline discussed below. There are two basic types: *formula* and *award-fee*. In *formula* contracts, the incentive payment or sharing relationship (profit/loss) depends upon the contractor meeting formula-specific targets. The objective is higher compensation for increased contractor performance and better cost control.

Historically, these contracts have generally been successful in motivating contractors to meet product or system performance goals; however, they have not been very effective in reducing costs or meeting schedules.[28] This was particularly true during the 1980s, a period of growing adversarial relationship between the Government and its contractors, when fixed-price and fixed-price-incentive (FPI) contracts were frequently imposed for use on large, complex research and development contracts.

In 1987, the GAO conducted a review of sixty-two DoD FPI contracts to determine if this type of contract achieved its intended goals. Their review concluded the following:

- Final costs for the majority of programs fell within 5 percent of the target price negotiated at contract award; 47 percent fell under target and 53 percent fell over target. Of those over target, 21 percent of the contracts exceeded the ceiling price.
- As share ratio increased, the contractor did not demonstrate a greater incentive to meet or underrun the target costs.

In short, the incentive relationship resulted in meeting targets as the primary motivation for contractor performance.[29]

An *award-fee* contract allows the contractor to earn additional fees, based on a subjective evaluation of how the contractor performs against criteria set forth in the contract. A fee pool is established at the beginning of the contract and spread among distinct award-fee periods. The contractor may earn all or part of the fee for any period.

Evaluation criteria define the relative importance to the Government of each area of contract performance. Those criteria are contained in an award-fee plan that is normally an attachment to the contract. The Government has the unilateral right to change the award-fee plan before any award-fee period begins. This is done to ensure that the various aspects of performance, including cost, schedule, technical, and other uncertainties encountered and addressed during contract performance, are addressed in accordance with the Government's priorities.[30]

How well does the award-fee process motivate the contractor to meet the Government's expectations of contract performance? Generally, award-fee contracts have been successful in this regard, when properly managed. In the Department of Defense and NASA, award-fees, “properly applied and with a contractor who is motivated by the incentives, can be a powerful tool to challenge industry to superior performance. Pragmatic determination of strategy, sound selection, and structuring of incentives and careful management after award can result in success.”[31]

A Historical Timeline

Techniques for structuring contractual incentives have evolved over time. After WWII, the federal procurement process became increasingly complex. As regulations proliferated and policy development implementation increased, more people were required to implement and manage the processes involved. Costs

and complexity increased geometrically. The contract support organizations of contracting businesses grew throughout the period of performance and became related not just to one contract, but to the company as a whole and to many of its business segments.

A review of research, literature, and Defense Acquisition Regulation Council (DARC) (then the Armed Services Procurement Council) cases since the 1950s confirms the growth in complexity, political and regulatory oversight, accountability, and a shift of business risk from the Government to the contractor.

Today's concerns for "better, quicker, cheaper" are similar to the issues raised in the 1950s. These issues included the structuring of the risk-reward relationship, the operation of incentives, and the motivation of Government contractors. This forty-year period can be characterized by two often-conflicting goals:

- The Government sought to maximize contractor performance and gain the best product for the lowest price.
- The contractor tried to minimize risk while maximizing profit and delivering to the Government what was expected.

Of the many regulatory and policy events over this fifty-year period, several can be described as keystones. Others involved critical changes in incentive approaches, changes that affected the achievement of the incentive, or those that impacted doing business with the Government through a change in the playing field (e.g. ASPR to FAR, CICA, FASA, FARA). In most cases, they were part of a continuing search for improvements and flexibility to better meet defense needs by motivating excellent contractor performance. Figure 2 below highlights the time period.

The 1950s

The 1950s were dominated by cost-plus contracting. The goal was to push technology forward rapidly, to gain on the Soviets. The Government was moving from the fixed-price, re-determination contracts of the 1940s to an expanded "contract tool box" for the contracting officer. This included the use of the cost-reimbursable, incentive contract for research and development work.

The preference by contractors for firm fixed-price contracts was a subject of some debate. Interestingly, Defense Acquisition Regulatory Council case files from this period show a shared industry perspective. If a contractor had accumulated cost experience sufficient to meet the criteria for application of the incentive-type contract, then the contractor believed that they should be in a position to quote on a fixed-price basis rather than on a price-incentive basis. Fixed-price (FP), the preferred type, and cost-reimbursable type (CR) contracts were sufficient to cover the various situations of the time period.

Some of the concerns raised by industry included the following:

- Ceilings on upward price revisions, without a price revision floor, were viewed by the contractor community as an attempt by the Government to benefit from the contractor's efficiency by way of cost reduction, but at the same time, to impose upon the contractor the full risk of unforeseen costs on development work.
- Government contracts that used profit-control devices such as "close buying" (determination of fair and reasonable), price re-determination, cost disallowance contrary to generally accepted accounting principles, and the retrospective renegotiations of profits were deemed unfair by industry. Industry maintained that since the Government sought to obtain the best possible product at the lowest possible price, the important factor in any negotiation should be the price, not the profit.
- Shifting business risk to the contractor for contingencies beyond the contractor's control was viewed as improper and, in the long run, disadvantageous to the Government, since it was likely to discourage contractors from contracting with the Government.

With the widespread use of Fixed-Price-Incentive (FPI) and Cost-Plus-Incentive-Fee (CPIF) contracts to achieve cost reductions, the Armed Services Procurement Regulation (ASPR) Committee, in 1958, re-considered the tools available to the Government. This resulted in adopting the concept that "any kind of contract, which promotes the best interest of the United States, may be negotiated." [32]

The goal was to furnish financial incentives, not only to reduce costs, but also to "develop and produce weapons even more swiftly and more skillfully." With a good understanding of what constitutes "good and timely performance," [33] the Government could provide incentives for contractors to exceed specified delivery schedules and performance criteria, by creating a contract formula that operated to increase fees.

The use of these additional financial incentives was considered appropriate where mileposts or goals could be established, against which to compare actual performance. If contractors did not meet these mileposts, negative incentives, such as reductions in contract prices, could be applied as well.

The rationale for the ASPR changes could be summarized as follows:

Cost-reimbursement type contract fees are earned for best efforts, regardless of degree of success. Contracts that call for extensive R&D generally yield small profits. New weapons develop so rapidly that large production runs with contracts that involve higher profit margins are scarce. Contractors should be able to achieve additional rewards for contracts that call for extensive R&D.

Since the items were new, however, there were no reasonable standards of performance against which to measure accomplishment or to penalize delinquency. Thus, it was not reasonable to negotiate profit-adjustment formulas that were based on known measures of performance.[34]

At the time, this was considered a sophisticated technique and only a broad framework was provided in a subsequent ASPR revision. In an additional memo, the Assistant Secretary of Defense (Supply & Logistics) cautioned that danger could result by use "of this sophisticated technique by inexperienced personnel."

The 1960s

In the 1960s, the push to cost-reimbursement contracting fell into disrepute in face of huge budget overruns. Secretary of Defense Robert S. McNamara then instituted Total Package Procurement (TPP), essentially fixed-price contracts for R&D and initial procurement. TPP seemed a good idea, but it failed. The contractor assumed too much risk. TPP contracts on systems such as the F-14 and C-5A failed to constrain costs and eventually had to be rewritten to support system delivery. Thus, fixed-price instruments fell into disuse on major systems until the 1980s.

In 1967, the ASPR Committee approved the Cost-Plus-Award-fee (CPAF) contract, based on NASA Marshall Spaceflight Center experiments with contract types, and a Navy test program. The primary objective of the CPAF contract was to promote improved performance by rewarding performance that exceeded a certain minimum.

The CPAF contract offered advantages not then available in other types of contracts. The unilateral determination of award-fee by the Government, not subject to the Disputes clause, provided a new dimension that could provide greater discipline, improved communications, and better contract performance. In addition, CPAF contracts eliminated the developing use of complicated multiple-performance incentives by permitting one overall contract effectiveness incentive.

There were two major concerns with CPAF contracts. First, broad use in R&D could pose problems, due to the extensive administrative and technical effort required to track and document contractor performance during the period of performance. Second, establishing and including contract criteria, against which to evaluate contractor performance, would be difficult.

During this period, Value Engineering (VE) as a contract incentive was studied and implemented within DoD. The goal of value engineering was to provide an incentive to the contractor to propose changes in the contract requirement that would reduce production costs. VE incentives either required or encouraged the contractor to propose cost-reduction measures under the contract. In return, the contractor received a stated percentage of the contract savings in design, manufacture or construction, procurement, inspection, installation and maintenance of an item and its components. The goal was to achieve the necessary performance, maintainability and reliability of the item at minimum cost.

VE was designed to ensure that every element of cost contributed proportionally to the functioning of the item. The Navy was a major proponent of VE, beginning in 1956. It noted that "…value engineering has been used in a number of contracts involving the procurement of bureau of ships controlled material. These efforts

have shown that equipment manufacturers, like shipbuilders, when profitably motivated, are an excellent source of ideas for value improvements."[35]

This period also saw the real beginning of the Government's "contracting out" policy. OMB Circular A-76 was issued in 1966. The policy dealt with the performance of commercial activities and reliance on the private sector, as opposed to the establishment or use of in-house organizations by the Government.

The 1960s also marked the beginning of an increase in the use of "contractor accountability" mechanisms. The Government increasingly applied a cost-plus philosophy of pricing to all types of contracts, including those structured as FPI and FFP. In 1962, the "Truth in Negotiations" statute (PL 87-653) (10 USC 2306a) required the certification by contractors of current, accurate, and complete factual cost and pricing data.

These cost or pricing data requirements were established to ensure that the Government received the same information the contractor had, for use in negotiating a fair and reasonable price.[36] The contractor community believed that the Government's ability to apply standards of judgment, as distinguished from strict accounting principles, was fast disappearing and viewed this as a disincentive to doing business with the Government.

The 1970s

The 1970s were characterized by increased regulation of Government contracting and the establishment of an acquisition framework by which DoD would conduct the acquisition business. Requirements expanded for accountability on both sides (Series 5000 directives for the Government; examination and audit of contractors).

In May 1970, Deputy Secretary of Defense David Packard issued a policy memo that established broad guidance in five major areas: management, conceptual development, full-scale development, production, and contracts. The memo clearly reflected Packard's belief that the defense acquisition system needed improvement. Approximately a year later, in July 1971, the first DoD Directive, 5000.1, was formally issued. Only seven pages long, it was an austere document.

In many ways, the entire acquisition reform agenda since original publication of DoDD 5000.1 in 1971 can be characterized as a long struggle to realize a simple but powerful vision: successful development, production, and deployment of major defense systems are primarily dependent upon competent people, rational priorities, and clearly defined responsibilities. Each 5000 series revision since 1971 has stressed the importance of centralized policy-making and decentralized program execution.

Additional milestones during the 1970s included the following:

- The Cost Accounting Standards Board (CASB) (PL 91-379) was established. The purpose of the CASB was to develop and promulgate cost accounting standards to provide accounting criteria that would result in comparable costs for like circumstances within a company and to ensure that contractors properly allocated costs to DoD contracts.[37] In addition, contractors were required to disclose their practices and agree to accept downward cost adjustments for failure to be consistent.
- The Contract Disputes Act of 1978 (PL 95-563) instituted a single, comprehensive law governing disputes under Government contracts.
- The Commission on Government Procurement (PL 91-129) (COGP) was established in 1969. It released a report in 1972 that contained 149 recommendations for improving the federal procurement process. Among the recommendations was the establishment of an independent, centralized office for Government-wide procurement policy matters (the Office of Federal Procurement Policy, established in 1974); a federal procurement institute for training and development (the Federal Acquisition Institute established 1974); and a single uniform procurement system for all Government agencies (the Federal Acquisition Regulation, effective April 1, 1984).

The 1980s

The 1980s marked a more adversarial relationship between the Government and its contractors. Procurement practices assumed a higher profile on the public agenda, driven partly by scandals involving fraud, waste, and abuse. This resulted in greater emphasis on fixed-price contracts, even for R&D efforts. Again, major acquisitions were put on fixed-price contracts, and again, the fixed-price contracts failed.

The combined effects of increased regulatory oversight, and the reporting of scandals including excessive overhead charges, unallowable cost billings and defective parts and systems, all pointed to a breakdown of the basic processes required to incentivize contractor performance. There were also several significant regulatory events and commission reports that directly affected incentives and Government contractors. These include the following:

- The Defense Acquisition Improvement Program (DAIP) of 1982 was a comprehensive reform effort aimed at improving the defense acquisition process. Known as the "Carlucci Initiatives," after then-Deputy Secretary Frank Carlucci, the DAIP consisted of thirty-two management initiatives, ranging from multi-year procurement and economic production rates, to design-to-cost, and the linking of acquisition and budgeting.
- The Federal Acquisition Regulation (FAR) was issued April 1, 1984, based on recommendation A-10 from the COGP of 1972.
- The DoD Appropriation Act of 1984 contained a requirement for a warranty provision under which defense contractors and subcontractors had to guarantee in writing that their systems and components were designed to meet Government requirements and were free from defects in material and workmanship that could cause a failure to meet requirements.
- The Competition in Contracting Act (1984) (PL 98-369) was landmark law that changed the emphasis from sole source to competition and resulted in a rewrite of twenty-five percent of the FAR. Significant changes included reducing the number of exceptions permitting use of noncompetitive procurement to seven circumstances, establishing the Competition Advocate program as a check to ensure maximum emphasis was placed in this area, changing from negotiation exceptions to exceptions to full and open competition, and setting approval levels for justification and approval documents.
- The Grace Commission (1985) issued its findings. They made 2478 specific recommendations, covering Government as a whole, not just acquisition, estimated to save over $424 billion by 1987. The findings were received skeptically.
- In 1985 the President's Blue Ribbon Commission on Defense Management, the Packard Commission, was established to make recommendations for new reform. In June 1986, the commission published its final report, which included sweeping recommendations. National Security Decision Directive 219 in April 1986, the Goldwater-Nichols Department of Defense Reorganization Act in October 1986, and the Defense Management Report in July 1989, were all designed to implement the Packard Commission recommendations.

This decade also saw the Government attempting to shift financial and performance risk to contractors in hopes of lowering costs and improving outcomes

The 1990s

The 1990s mark the beginning of real movement in acquisition reform and regulation and guidance critical to redefining the Government-contractor relationship. Developments during the 1990s include the following:

- Major revisions of DoDD 5000.1 and 5000.2 featured the inclusion of risk management techniques and the elimination of non-value-added Government oversight, where feasible.
- A return to cost-reimbursement development contracts to more equitably balance risk and the use of firm fixed price contracts for commercial items, where the risk is spread among the Government and other customers, and the rewards can be commensurate with the risks.
- Streamlining Defense Acquisition Laws (Section 800 Panel): Established by PL 101-500, the Section 800 panel's charter was to review all laws affecting DoD procurement and to recommend legislative changes that would allow DoD to reengineer the acquisition process. Through the support of the Secretary of Defense and his staff in legislative proposals, and with the cooperation of Congress, many of the recommendations were adopted in FASA (below) and others adopted or refined in FARA (below).

- Defense Science Board Study on Reform (1994): The final report (Phase II) firmly acknowledged the need to adopt commercial practices as a way of doing business and developed a set of reform initiatives designed to accelerate the required changes. Specifically, it examined industry segments and identified specific barriers to success.
- The Federal Acquisition Streamlining Act of 1994 (FASA) contained more than 200 sections that changed the laws governing how federal agencies annually acquire almost $200 billion in goods and services. The act required evaluation of the effectiveness of actions taken to implement FASA.
- The Clinger-Cohen Act of 1996 (originally the Federal Acquisition Reform Act/ Information Technology Reform Act of 1996 (FARA/ITMRA)) emphasized the importance of stable funding. This law requires new programs to meet at least 90 percent of cost, schedule, and performance goals, and that at a particular point in the program life, full funding for the program must be included in the FYDP.
- Various parts of the FAR have been re-written, designed to make the Government marketplace more attractive for commercial contractors and to reduce Government and contractor infrastructure requirements.[38]

Summary

The timeline discussed in this chapter reflects major changes in the form and complexity of the Government-industry business relationship, as it evolved into a complex body of law and regulation dedicated to controlling performance and product. From the 1970s forward, many in Government recognized the need for changing the approach to the business relationship. There were many commissions and studies, all with similar themes in their recommendations.

Change didn't take hold, however, until driven by two events:

- Realization that the acquisition environment within which DoD operated had changed beyond the limits of existing acquisition system's ability to adjust or evolve;[39] and
- Leadership that not only talked about change, but also accepted the responsibility for implementing change and formed a partnership with industry to make change a reality.

The change in approach to the Government-industry business relationship and the structure of effective contractual incentives, originating in the reform legislation of the past decade, must include an understanding of the factors that affect the motivation of Government and industry. These factors are examined in the next chapter.

CHAPTER THREE: MOTIVATION AS THE CORNERSTONE OF THE BUSINESS RELATIONSHIP

The Basic Relationship

Developing contractor performance incentives must be a continual process that adapts to changes in the life cycle of the program and the contractor's performance over the life of the contract. Successful incentives depend upon understanding the type of work (hardware, software, supplies, services), the phase of the work (development, production, sustainment), the goals of the Government and the contractor organizations, and the respective players who enter into an agreement.

Achievement of the final result, be it a product or service, involves a constant series of tradeoffs. Achieving the right balance among the tradeoffs depends on effectively translating the program's goals into an effective contract strategy. Success depends on understanding differing motivations and developing balance in the incentive relationship between the contractor and the Government.

What Factors Motivate Contractor Performance?

Achieving balance requires identifying the right incentives and communicating them effectively. Government communicates its goals to the contractor's management through the contract. Contractor management communicates the goals to its employees through its organization. The objective is to employ the right incentives to effectively motivate not only the organization, but also each employee.

Summary: Key Factors

Several studies were reviewed to gain a perspective on motivation and the contractor. (These studies are described in Appendix A.) The studies on contractor motivation are generally consistent in their overall findings—profit may not be the overriding motivator. It is also affected by survival, growth, market, and other long-range and financial objectives of the firm. Instant contract profit, in fact, may not be a motivator at all. The following summarizes essential areas addressed in the studies that affect the motivation factors impacting contractor performance:

Profit

- With respect to the profit motive, the importance of a single contract to a firm is influenced by a number of extra-contractual factors. These include the:
  - Significance of the specific contract as a part of the firm's total contractual efforts;
  - Opportunity to enter new areas of technical importance;
  - Potential for follow-on work; and
  - Extent of competition for the contract.
- Profit or fee is important, but small increases in profit or fee are seldom a motivator.

Contract Spectrum

A single contract:

- May not be critical to a company
- May be influenced by a number of factors.
- May represent an opportunity to enter new areas of technical importance
- May represent an opportunity in a new area of outsourcing for the Government.
- May include other factors such as the length of performance of the contract and the potential for follow-on work.

Extent of Competition for the Contract and the Competitive Environment

- The number of companies operating in the same business area.
- The opportunity that a competing company may possess a competitive advantage in expertise or product line.

Growth or Survival

- How the program under consideration fits within the company and its forecast.
- The company's financial condition.
- The opportunity the considered program presents as a launch point for other effort in an area of rapidly changing technology.
- The position of the company as a large or small business and the growth goals of the company.

Organization Objectives

- Part(s) of the contractor organization being motivated (the contractor program office, the corporate management structure, or the contractor organization) and their performance input to the project.
- Organizational problems that affect the incentive.
- The impact that employees/managers play in the performance goals.

Prestige and Reputation

- Participation in an effort of significant importance can enhance reputation and become a marker for future effort or participation.
- Positive performance on an effort can lead to intangible benefits necessary for capture of future business.

Financial Health and Indicators

- Positive cash flow
- Accounting and financial system of the contractor
- Capacity
- Capital equipment purchases for future work
- Return on Net Assets/Investment
- Sales and Earnings
- Steady flow of business

Contract Administration within the Contractor Company

- Communication of incentive requirements throughout the workforce.
- Attention to and management of contracts with incentives.

What Factors Motivate Government Behavior?

It is critical to understand who defines program goals and desired outcomes; that is, who are the stakeholders that influence contract action? This can be the users, the program office, or the corporate structure. In general, the defense "buyer" is usually a hierarchy and not a single agent.

Successful performance depends on balancing the goals of the basic Government-contractor relationship, understanding the desired outcomes, focusing on the areas and factors critical to the outcome of the particular procurement, and implementing an incentive relationship to support it. This complex balancing act requires

focusing on many areas of performance to incentivize, such as reducing unit cost, exceeding performance requirements, reducing total cost, reducing schedule, and/or exceeding operational and maintenance requirements. The basic requirement is to meet cost, schedule and performance goals.

The primary Government-contractor objective is to establish a business relationship that requires the contractor to assume normal business risks and provides the contractor with incentives for increased efficiency or performance that results in lower costs. This saves the Government money through lower prices and operating costs. The challenge is to focus on the right incentive(s) after carefully analyzing the Government's needs and the contractor's business environment.

Government Motivators

The following can be considered as some critical motivators of Government behavior:

- Achieve:
  - Cost goals: Maximize budget for instant and total lifecycle costs.
  - Schedule goals: User defined date.
  - Performance goals: User defined requirement.
- Exceed:
  - Cost goals: Maximize budget for instant and total lifecycle costs
  - Schedule goals: User defined date.
  - Performance goals: User-defined requirement.
- Other:
  - Socioeconomic (e.g. small business goals)
  - Budget (requirements vs. available dollars)
  - Political (requirements vs. political drivers)

Organizational and personal goals can directly affect the business relationship. They can become a determining factor, driving what is incentivized, and how it is incentivized. The following study helps to illustrate this concept.

Air Force Study

A recent Air Force study examined the effectiveness of schedule incentives for different players associated with project schedules, from the time of contract award until delivery of the first production item.[40] Four players were surveyed: the users, corporate Air Force, the program offices, and the contractors. They were asked to report the incentives that they had experienced to meet or exceed various project objectives. The motivation of the players and their incentives provide insight into how programs and contractors are incentivized and what is incentivized. Approximately sixty projects were reviewed.

Users. The study found that the users were strongly motivated to meet a project's planned cost, schedule, and performance goals. They also had a significant motivation to exceed project goals in all aspects of cost, schedule, performance, and reliability.

Corporate Air Force. At the Air Force corporate level, achieving superior technical performance rated first, followed by lowering acquisition cost, and lowering operating and support costs. The study revealed few incentives for reducing schedule in the majority of development projects. From a corporate perspective, the principals[41] —Mission Area Directors (MAD), Program Element Monitors (PEM), and action officers—did not view shortening cycle time as an important objective, as compared to the other project objectives.

Program Offices. Within the program office, superior technical performance was rated as the primary objective and shortening schedule was rated last. The program offices and the individual project managers viewed reducing schedule time to operational capability as the lowest of the four program objectives. When

asked to report if there were any incentives for program offices to achieve or exceed objectives, very few responses indicated any specific structured or formalized motivating factor.

In addition, twenty percent of the respondents stated that exceeding the objectives had little or no impact on their performance ratings. Many of the senior acquisition officers stated that it was much more important to meet the expected schedule, no matter how long, than to try to achieve a shorter schedule and risk not fulfilling it. Success was meeting the objective, not exceeding it.

The majority of program offices reported relatively few contract-based incentives for either on-time or early completion of a major milestone or project. Two-thirds of all projects included no financial incentives for on-time completion. Seventy-five percent reported no incentive for early completion.

Contractors. Many of the contracts were award-fee contracts with schedule as one of the evaluation factors. A contractor could receive all or nearly all of the incentive due to considerations other than schedule. Contractors earn on average 93 percent of the available award-fee, according to the study. The award-fee represents the results of the company's response to the program office's desire or concerns; it is often used as a measure of the program status. Incentives for schedule, for example, are based on the schedule, as it exists at evaluation time, not necessarily the originally contracted schedule.

According to the contractors, the bottom-line benefits of exceeding various project goals on the company included follow-on business (past performance) and increased company stature. Many contracts did not include any incentives for exceeding program objectives. Most incentives appeared to be based on meeting the stated project goals and not exceeding them. Incentives that were provided focused on cost and depended largely on the type of contract. On fixed-price contracts, there was a reported net incentive to reduce cost by reducing schedule. On cost-reimbursement contracts, there was little incentive to exceed project goals.

Summary of Findings

The Air Force study summarized the findings as follows:

- The lack of personal and organizational incentives for defense contractors, Program Offices, and the Pentagon indicates that the goal is to meet project objectives, not to exceed them.
- Reducing schedules is often the least important of the project objectives.
- In the contracting phase, the original DoD project schedule is the central factor in determining the contract schedule; contractors have no incentive to bid anything other than what the Government expects.

Employee Perspectives

Employees need to be able to understand the incentive relationship that's on contract. Let's examine this same area from the employee perception of effectiveness. A 1981 report from the Army Procurement Research Office, based on interviews and research at that time, provides insight to findings that are both intuitive and in line with current understanding of performance motivators.[42]

Government employees believed that the most effective incentive provided to contractors was a guarantee of future business, followed by program continuity, profit, and fair and equitable contracts. They believed the weakest incentives were non-monetary rewards, followed by the possibility of default, multiple incentives, award-fees, and "jawboning."

Industry believed the four strongest incentives were a fair and equitable contract, guarantee of future business, program continuity, and appropriate contract type. Profit, improved cash flow and long-term funded contracts were next in importance. The lowest regard was for non-monetary awards, followed by Government-funded capital investment, the possibility of default and monetary loss for poor performance, and "jawboning."

Within both the Government and industry samples, there were differences depending upon whether the contract was for R&D or for production since this affected the approach to the incentive, its goal, and its effectiveness. Smaller firms were more interested in program continuity. Larger businesses were influenced more by multiple incentives and long-term funded contracts.

Conclusion

This chapter examined motivation as the cornerstone of the business relationship and the importance of achieving balance in the incentive relationship. The success of the tradeoffs required to achieve a program's goals is a direct result of the effectiveness of the incentive relationship. This, in turn, must be based on an understanding of the factors that motivate the multiple levels of the Government and the contractor involved in the contract.

The next chapter examines the incentives and disincentives that affect contractor decisions to participate in the Government marketplace. In addition, it reviews ways to increase the opportunity for competent contractors to enter the Government marketplace and provide the innovations in technology necessary.

CHAPTER FOUR: MARKETPLACE BARRIERS AND SOLUTIONS

An "American Industrial Base"

As the revolution in business affairs achieves its goals, the Government marketplace is adopting many of the characteristics of a commercial marketplace. In effect, according Deputy Secretary of Defense, John Hamre: "…DoD wants nothing less than to dissolve the infamous 'military-industrial complex' that has existed as a kind of parallel universe to civilian industry since the end of World War II. We don't want a defense industrial base anymore. We just want an American industrial base." [43]

This chapter examines the issue of rapid access to commercial marketplace advancements in the key underlying technologies necessary for military superiority (e.g. computers, software, integrated circuits, and communications). This is important now that cycle times for commercial development of this technology are less than 3-4 years versus the DoD sponsored 8-10 years.[44] The chapter also reviews the essential differences in the Government and commercial marketplaces that present barriers to access for this technology. In Phase II, this area will form a central focus for the discussion and application of contractual incentives.

The Commercial and the Government Marketplace

Two marketplaces coexist in the American economy: commercial and Government. Developing effective business relationships and applying innovative contractual incentives depend on understanding the forces that operate upon each of them.

Simply stated, in the commercial marketplace, the goal is to get a product or service to market first and price it according to what the market will bear or risk losing significant market share. The incentive of capturing market share is simple and straightforward. If the product or service meets customer needs, represents value, and costs are covered, then the company should expect to make a profit.

The Government, however, does not operate within a free market environment and has traditionally required extensive law, regulation, and policies as a substitute for market forces. Other differences between the Government and the commercial marketplace that make the Government marketplace unique include the following:[45]

- The Government is in monopsony[46] position; hence, free market forces can't operate.
- For any particular item there is often a limited number of contractors with specialized knowledge or the ability to supply Government needs; this does not usually hold true in the commercial marketplace, where similar products often fight for market share.
- The Government operates with public funds, the use of which is held to a different standard than are private funds.

Barriers to Technology Access

The pace of new technology growth is rapid. While many new ideas are going to come from high technology, dual-use capable firms, and top-secret labs, the next breakthrough could just as easily come from a start-up firm not currently involved with Government contracts at all. Providing incentives for entrants to do business with the Government, thus providing multiple sources for new technology, products, and ideas, is a major issue. The DoD and the Army will not be able to continue to get cutting-edge weapon and support systems if doing business with potential contractors is associated with disincentives such as extensive reporting, regulation, compliance, and oversight requirements.

The pace of commercial technology advancement in many sectors exceeds the Government sponsored technology efforts. This now represents barriers to DoD's purchase of state-of-the-art commercial items, the conversion of defense companies to making commercial products on a competitive basis, and the integration of the defense and commercial industrial bases.[47]

The following are most often identified by industry as significant barriers:[48]

- Unique laws and regulations are imposed on Government contractors.
- Instability of requirements and budget make it difficult to predict the market.
- Government-unique rules are imposed on commercial subcontractors.
- Government has the right to terminate contracts at will.
- There is a perception that there is great risk of civil and criminal penalties for inadvertently failing to comply with a Government rule or regulation.
- Companies that do both commercial and Government business are forced to maintain separate business processes and sometimes separate facilities at great expense and little value.

The subject of dual-use capable firms and firms who rely upon DoD for much of their business illustrates some of these issues.

Dual-use Capable Firms

One alternative to the defense industrial base is the dual-use capable firm.[49] For less money and shorter cycle times, the Government could access the advanced technologies and capabilities of the commercial marketplace. With the right contractual incentives and appropriate changes in the regulations, and using flexible manufacturing techniques, commercial firms could provide military-unique items in smaller quantities.

As mentioned earlier, however, the unique procurement practices of the Government marketplace are at odds with the commercial marketplace. For example, pricing in absence of competition requires extensive cost and pricing data disclosures, a disincentive for new firms considering doing business with the Government. In addition, generally accepted accounting principles (GAAP) do not meet the requirements of the Cost Accounting Standards (CAS).

Dual-Use Technology Program

Results from a pilot program entitled "Military Products from Commercial Lines (MPCL)," set up by the Air Force with one of its contractors (TRW), provides insight into these issues.[50] The pilot program was undertaken as part of the Air Force Materiel Command's Manufacturing 2005 strategy, which envisions a future where an integrated military-commercial industrial base will ensure the Air Force (and other services) access to superior technologies at dramatically reduced costs. Electronic components produced on a commercial assembly line will be used in military applications for the Air Force F-22 and the Army RAH-66 Comanche helicopter.

The pilot program recognized major differences in business practices and procedures between the Government and commercial businesses. Internally, it also highlighted differences between the contracting and operating procedures of two of TRW's operating units – their commercial and military divisions. This insight is important because it impacts:

- How companies organize to do business with the Government;
- How they are able to effectively manage incentives;
- How they are able to reduce and control costs; and
- Whether they decide to do business with the Government.

The program also identified areas in the defense procurement system that can be streamlined to facilitate future collaboration with commercial companies. The pilot was a testing ground for exploring collaboration between commercial and Government sectors of a defense contractor. Specifically, it focused on ways to operate within the context of the rules and regulations (often conflicting) that differentiate the commercial from the defense marketplace. The program also explored representative waivers or workarounds that would be required for many of the Government-unique requirements.

Burden of Documentation

Commercial and military practices often differ not in actual compliance with a requirement, but in the level of documentation required to do so. To participate in the pilot, for example, TRW's commercial division agreed to the FAR clause on affirmative action for Vietnam veterans because the clause is consistent with standard commercial practices. FAR clause 52.222-37, "Employment Reports on Special Disabled Veterans and Veterans of the Vietnam Era," however, is not consistent with those practices. This clause requires an annual report on the number of disabled and Vietnam veterans currently employed—by job category and location and of the number of new hires by category.

In another example, both TRW divisions reviewed two sets of requirements that the commercial group found objectionable. One set of requirements included Federal Acquisition Regulation (FAR) and Defense FAR Supplement (DFARS) clauses. The other set contained technical military specifications and standards for producing the items. For contractual requirements, the teams initially identified fifty-five clauses. Many requirements, such as cost or pricing information, data rights, and quality standards, were the same ones that had been previously identified in several major acquisition reform studies and which commercial firms claim deter them from competing for Government projects.

Other disincentives include Government cost accounting standards, socioeconomic provisions, Government system audits (purchasing, property, and quality), and requirements for cost or pricing data. Within this part of the electronics industry, contract manufacturing (CM) and printed wiring board (PWB) companies still believe the Government is too strict and demanding, and consequently avoid doing business with the Government. About 57 percent of the commercial CM companies and 63 percent of the PWB companies will not accept any Government business that restricts their profitability or tries to alter the normal free enterprise system within which they operate.[51]

Establishing Fair and Reasonable Pricing

The establishment of a fair and reasonable price is another issue. Compared to the Government sector, private industry has a number of unrestricted methods to determine what will be considered a fair and reasonable price:

- Request for Quotes (RFQ) are common when other information is unavailable.
- Early support and collaboration with supplier on Design to Cost (DTC) or target price for the required items supports success.
- Long-term buyer-seller relationships establish preference in pricing policies.
- There are no rules restricting the search for suppliers that can meet a company's price and performance requirements.
- Go to "take it or leave it" industry leader. Sometimes there is only one price and if you want and need the item, you pay what's asked.
- Begin with an established market price and adjust based on technical differences.

While the DoD minimizes its pricing problems by requiring cost and pricing data from its contractors, the commercial sector does not necessarily have this opportunity. Yet, commercial firms are able to operate efficiently without the extensive cost and pricing data required by the Government.

DoD Reliant Firms

Many companies, and this includes small business, rely heavily on DoD for the majority of their sales. The changes in the available budget dollars are forcing reductions in work force that cannot be made up with any change in future business. The knowledge and expertise is gone for good unless the company can convert to producing for a commercial market that can supplement the decline in the DoD business, or can adopt another strategy to accommodate reduced DoD business while remaining a single supplier (military clothing is an example).

The costs of maintaining a DoD compliant business create increases in overhead costs and liability that cannot be covered in a declining business environment. Many companies will go out of business, thus reducing

the base of potential suppliers and decreasing the opportunity for DoD to take advantage of high technology opportunities or receive necessary products or services. [52]

Incentives and the American Industrial Base

The single most important contractual incentive that can be applied is to adopt the principle that, to the maximum extent possible, the Government shall not impose on its contractors and subcontractors any Government-unique terms and conditions unless:

- That particular aspect of the buyer seller relationship is not adequately regulated by market forces;
- The financial and ethical integrity of the Government acquisition process is not adequately protected;
- National policy requires a unique term or condition; or
- There is an appropriate balance of the Government's interests with the cost to the Government and industry of applying the unique requirement.[53]

Much progress has been made in this critical area. The implementation of the following items is contributing to incentivizing commercial firms to conduct business with DoD:

- **FASA:** The Federal Acquisition Streamlining Act of 1994 (FASA) contained more than 200 sections that changed the laws governing how federal agencies annually acquire almost $200 billion in goods and services. The act required evaluation of the effectiveness of actions taken to implement FASA.
- **FARA:** The Clinger-Cohen Act of 1996 (originally the Federal Acquisition Reform Act/ Information Technology Reform Act of 1996 (FARA/ITMRA)) emphasized the importance of stable funding. This law requires new programs to meet at least 90 percent of cost, schedule, and performance goals; at a particular point in the program life, full funding for the program must be included in the FYDP.
- **FAR Part 12 (Acquisition of Commercial Items):** This part prescribes policies and procedures unique to the acquisition of commercial items. It implements the Federal Government's preference for:
    - Acquisition of commercial items and directs agencies to conduct market research to determine whether commercial items or non-developmental items are available that could meet the agency's requirements.
    - Acquiring commercial items or non-developmental items when they are available to meet the needs of the agency.
    - Requiring prime contractors and subcontractors at all tiers to incorporate, to the maximum extent practicable, commercial items or non-developmental items as components of items to be delivered to the Government.[54]
- **"Other Transactions":** "Other transactions" are instruments other than contracts, grants or cooperative agreements. For the purposes of this discussion, there are two types of "other transactions." The first is an "other transaction" for basic, applied, and advanced research projects. This type of "other transaction" has generally been used to enter into dual-use research projects. The second is an "other transaction" for prototype projects directly relevant to weapons or weapon systems proposed to be acquired or developed by the Department of Defense.[55]
- **SBIR:** The Small Business Innovation Research Program is a sixteen-year-old program to stimulate quick turnaround, high-technology innovation among small businesses to meet the Governments R&D needs. Ten federal departments and agencies provide funding. It is a two-phase program. Phase I awards up to $100K for feasibility. Phase II awards up to $750K for development. After Phase II, funding comes from the agency sponsoring or contracting for further requirements

- **Cooperative Agreements:** "Cooperative arrangements" may involve agreements between Governments, between private parties, or between Governments and private parties. Such "arrangements" may take many forms, including contracts. A cooperative agreement is one of many types of Governmental agreements that are contractual in nature but do not involve procurement.

In Phase II, the contractual incentives that may be employed to address these acquisition areas will be addressed.

CHAPTER FIVE: FACTORS TO CONSIDER IN DEVELOPING INCENTIVES

The procurement environment within which business operates is characterized by uncertainty, change, and a crucial need for flexibility. Providing incentives by selecting various types of contracts provides only a basic incentive structure and makes no provision for changes in emphasis after contract award.

Areas to incentivize may need to be changed during performance, since the objectives with which the Government and the contractor approach the contract may vary. Therefore, it is essential to employ contractual incentives that recognize the multitude of factors and forces that impact upon the major players and how and why they behave the way they do. There are many examples of failed contractual incentives in the acquisition community. The A-12 program is one such example (It is discussed in Appendix B).

For contractual incentives to be effective, the Government must demonstrate to the contractor that the contractor's objectives can best be met by helping to accomplish the Government's objectives. This takes a prudent and enlightened approach.

The list of factors that follows is by no means exhaustive. Its primary purpose is to form an initial baseline from which a comprehensive tool can be further developed and refined from the interaction and results derived in Phase II. This list represents a baseline summary of factors derived from the review of the historical timeline and the study areas that followed.

It is important to note that these factors may differ, depending on the type of product or service, phase of the acquisition, whether it is sole source or competitive, or if it is a follow-on acquisition. These factors represent areas of discussion and interaction, and opportunities for partnership between Government and industry as they strive to build an effective business relationship. Mechanisms to develop the necessary understanding, for example, include the use of Requests for Information (RFI), industry days, and draft RFPs.

Factor Baseline

The following factors should be considered:

- As goals are achieved, how can the contractor share in the compensation?
- What practices motivate contractors to invest resources to achieve the goals?
- What aspects of performance should be incentivized?
    - Why is it important to the program?
    - What will be the impact?
- What is the Government environment?
- Are there political issues that impact the Government or the contractor?
- What form should the incentive take?
- How should the Government communicate to industry?
- When does the Government reward the contractor?
- What is the contractor environment?
    - What are the contractors goals?
    - What are the possible outcomes?
    - What is (are) the period(s) of performance?
    - Are there industry-wide issues that impact the company?
- Where does the particular program fit within the company?
    - What role do employees play in the incentive?

    - What role do the managers play in the incentive?
- How does the prime communicate with its subcontractors?
    - What is the role of the subcontractors in the incentive?
- Are there any goals with which the incentives conflict?
    - Any organizational problems that can affect the incentive?
    - Competitive environment
    - Accounting and financial system
- Are the incentives effective?
    - Do they focus on the objectives?
    - How effective are the tools and processes management uses to monitor and analyze (EVMS) performance?
        - Schedule and resources available to meet goals and objectives.
        - Resources remaining and used.
        - Capabilities and options at any given point in performance.
        - Insight to what has been billed and has been paid (earned).
        - Funding required to complete the task.
- Flexibility
    - Do the values originally assigned to performance and delivery incentives change?
    - Does the originally determined range of effectiveness remain realistic throughout the contract life?
    - Do the objectives with which the contractor approaches performance under the contract change?
    - Does a change in the overall mix of the contractor's types of contracts and requirements affect the behavior and the performance?
    - How does one flexibly maintain the right incentives for the contractor?

Summary

While this list is by no means all encompassing, it does develop a reasonable series of factors to consider for use in the development of effective contract incentives and a mutually beneficial incentive relationship. It builds upon the previous discussion of motivation and incentives/disincentives.

The next chapter surveys a cross-section of concepts and initiatives in practice, many of which have included some of the considerations just mentioned. The concepts and the programs represented are attempts to approach the issues associated with the importance of changing the basic Government-commercial business relationship, not only to improve contractor performance, but also (in some cases) to increase the number of contractors electing to enter the Government marketplace, and to provide the technology, support, product, and service needed.

CHAPTER SIX: CONCEPTS AND INITIATIVES IN PRACTICE

This chapter summarizes and highlights selected programs and other acquisitions representing a cross section of recent and current efforts to improve quality, improve performance, and/or decrease costs. It is not intended as a comprehensive or exhaustive list of such efforts, but to provide examples of changes in the Government's approach to contract incentives and incentive relationships.

These efforts represent meaningful work toward increasing the odds that the business relationships between the Government and contractors will produce maximum value for the taxpayers and for the organization in pursuit of its mission. These examples are intended to stimulate discussion, refinements, and additional ideas during Phase II, which will consider not only these examples but also the many examples and experiences brought to the process by Phase II participants.

The figure below summarizes a broad spectrum of contractual incentives. Some are traditional while others are new approaches to changing the business relationship. The concepts and initiatives are categorized within two groups. (Figure 3.) The first, Contract Incentives, includes those concepts and initiatives that achieve their goals through the operation of the contract structure and/or specific terms and conditions. The second, Incentive Relationships, discuss those that achieve their goals through an acquisition or management approach or strategy. Note that many of the examples use combinations of these concepts and initiatives and, in some cases, those from more than one category.[56] Program data is derived from many sources.

Contract Incentives

1. Types of Contracts

The two basic contract types, fixed-price and cost-reimbursement, including incentive and award-fee have been well studied and documented and are not recounted here. Recently, a unique approach to incentivizing performance has evolved from the award-fee concept: award term.

Award Term

Like other incentive concepts, Award Term focuses on incentivizing contractors to accomplish the behavior the Government wishes them to accomplish. Similar to an award-fee contract, it provides an incentive award after evaluation of award factors. However, compensation is in the form of an additional period(s) of performance rather than in direct fee.

Organization: **Air Force**
Program: **Propulsion Business Area/Public-Private Competition (Engine Repair and Maintenance)**

The effort, a public/private competition, is planned as a requirements contract with an initial ordering period of seven years. The initial seven-year ordering period may be extended or reduced, on the basis of contractor performance, resulting in an ordering period lasting a minimum of five years from completion of the transition period to a maximum of fifteen years from the date of contract award. The RFP contains an Award Term Clause, which will allow the successful offeror to earn extensions to the initial ordering period based on performance as described in an Award Term Plan.

The successful contractor's performance will be continually monitored against "measures of merit," outlined in the contract. Performance is reported to an Award Term Review Board (ATRB) who recommends award term points to a Term Determining Official (TDO). Accumulation of points over the basic period of performance determines the ultimate length of performance periods. Points awarded can be positive (add time) or negative (subtract time).

According to the PCO at Kelly AFB, this concept has great support from offerors. Success is measured in additional performance opportunities and development of a long-term relationship. Offerors stated that there is more pressure on them to provide exceptional performance in an award term than in an award-fee situation, because failure to earn maximum points directly affects the period of performance and return on investment.

This technique for establishing an earned long-term relationship can be useful in competitive acquisitions in which the Government would otherwise have to re-compete more frequently, even if the incumbent is performing well. While the Air Force has awarded several such contracts, and others are in source selection, none have been in effect long enough for the effectiveness and any potential problems to have been evaluated. One possible issue is the need to price the entire period to which the potential performance extensions apply.

2. Structural Incentives

The following examples provide several innovative variations to the basic incentive relationship.

Cost Reimbursement Provisional Fee

Organization: **NASA**
Program: **Space Station**

NASA's Space Station contract is a cost reimbursement provisional fee arrangement that provides that the contractor will be docked 25 cents for every dollar of cost overrun, but will earn an additional 25 cents for every dollar saved. In addition, all award fee payments are provisional. If station hardware fails to perform, the fee paid is subject to retroactive reduction.

Provisional award fee can be earned at various specified milestones through each of three phases: space station assembly, space station operations, and space station sciences. These in-space milestones measure the effectiveness and efficiency of the on-orbit performance. Award fee can be earned in all phases simultaneously although emphasis will change in a logical sequence through completion of each phase depending on where in each phase the effort is being performed.

Special Contract Incentives

Performance Based Statement of Work (SOW)

Reduction in Oversight

Organization: **NASA**
Program: **Space Flight Operations Contract (SFOC)**

The SFOC consolidates 12 space shuttle program contracts previously contracted to several contractors. The contract was awarded sole source to the United Space Alliance (USA), a joint venture of Lockheed martin and Rockwell (now Boeing), who already had over two-thirds of the space shuttle effort between them. The contract included a performance-based SOW produced through a Government-industry partnership. There was also a concerted effort to reduce Government oversight through a "special insight" clause giving Government access to processes, procedures, and data of the prime and its subcontractors.

The SFOC contract was negotiated as a CPIF/AF contract with multiple performance and award incentives designed to emphasize excellence in management, technical, schedule, and subcontract management. It also incentivized the contractor to reduce cost. There were positive and negative performance incentives designed to motivate the contractor to achieve major program objectives. The contract also included an award-fee to measure performance on the health of the program and to motivate continued improvement.

In addition to the performance incentives, there was a contract cost incentive to reduce cost based on the contractor's performance relative to target cost. The target incentive and award-fees would be adjusted downward based on a preset formula if an overrun relative to target occurred. It would be adjusted upward based on a preset formula if the contractor underran, relative to target and the contractor earned award-fee scores that surpassed specific performance levels in the areas of safety and overall performance. This ensured that the motivation to cut costs did not impact safety.[57]

Contract Incentive Reinvestment Concept

Organization: **Army**
Program: **Multiple Launch Rocket System (MLRS)**

As discussed in an earlier chapter, program stability, meeting program performance requirements, and Government customer satisfaction more readily influence contractor motivation. Accordingly, program managers have not typically focused on cost savings incentives because saved dollars are not available for instant reinvestment in the program.

The MLRS program is investigating an incentive reinvestment concept. The concept is to develop a realistic incentive on some important aspect of the contract and include a special contract provision that outlines the share and potential use (negotiated reinvestment candidate list) of the savings when realized. For example, assume a negotiated clause with sharing/reinvestment on $100 savings:

- Sharing Government 50 percent Contractor 50 percent
- Reinvestment Government 30 percent Contractor 25 percent

Fifty-five dollars is available for reinvestment in the program ($30 from Government share, $25 from contractor share). Once savings are realized and a reinvestment candidate selected, the contract could be modified to reflect the action. In the above example, the net impact to the contract value would be a de-obligation of $20.

Savings	**$100**	
Share 50/50		
Government reinvestment		$30
Contract reinvestment	$25	
Contract profit retained	$25	
Contract de-obligation	$20	

To allow even more flexibility in the reinvestment of any savings, the clause could allow the parties to decide after savings occur the amount and share of the reinvestment. One potential issue is the funding rules for re-obligating funds for a different purpose and in a different timeframe.

3. Organization and Individual Incentives

A 1996 DSMC study concluded that the average cost overrun for Engineering and Manufacturing Development (EMD) of a major system was 45 percent and schedule overrun was 63 percent. For a major system program, how does one incentivize the contractor to imbed the concepts of schedule performance within an organization? For a services contract, how does the Government ensure that performance is embedded as a desired behavior on the part of the contractor? In both of the following programs, the contractor incentivized individual employee performance with a direct monetary payout based on a percentage of savings or fee award, driving the incentives down to the lowest levels within the company.

Organization: **Air Force**
Program: **Peace Shield**

The Peace Shield program delivered 6 months early and below cost on a $1B program. Peace Shield, a Foreign Military Sales (FMS) program managed by the Air Force Electronic Systems Center, delivers a software intensive nationwide ground-air defense and C3 system to the Royal Saudi Air Force. It includes 17 radars, a central command and operation center, multiple other operation centers, communication links and interfaces. The contract was awarded to complete a contract previously held by another contractor and terminated.

Success for this program is a model of understanding motivation and the careful application of performance incentives at the corporate and individual team/employee levels. Incentives were structured as follows:

- **Corporate Incentive:** The AF program office (PMO) developed a cost and schedule incentive to deliver three months ahead of schedule and below target. It included a $50M bonus for early delivery and up to $50M liquidated damages for late delivery. The contract was FFP/FPIF with a 75/25-share ratio below and above target. Ceiling price was 125 percent.
- **Employee Incentive:** The contractor adapted an approach from a successfully completed 1989 NATO contract that included both long-term and near term incentives for early delivery. Because the Peace Shield program was software intensive, it was susceptible to individual motivation. The company constructed an incentive share program for employees with incentives broken down to interim achievable parts with early payments.

Overall success of the Peace Shield program and the effectiveness of the incentive structure resulted from recognition by the company of the need to succeed, motivated corporate and employee commitment based on interim team and individual awards. The bottom line reasons for success can be summarized as careful attention to lessons learned coupled with an understanding of motivation and a concentrated effort on partnership.

Organization: **NOAA**
Program: **Operation and Maintenance Services**

The Operation & Maintenance (O&M) services contract at the Western Regional Center was due to expire. The Government had been pleased with the incumbent contractor's performance. There had been some morale issues, however, that had arisen related to the contractor's workforce not having been paid during the Government furlough period; assessment of major consequential damages against the firm for an error in installation of a particular water-control valve; and removal of a portion of the contract for Mail Services and the award of this portion to a NISH-sponsored Work Center.

The need for expanding competition for the services, while at the same time ensuring excellent performance of the required services, was apparent. Offers were solicited on a Fixed Price-Award-fee basis. One of the listed evaluation factors was a process to distribute any amount of award-fee earned after the annual evaluation of performance to "reward or incentivize employees engaged in performance of the contract, or to foster the proficiency of those employees during subsequent performance periods".

Each of the offerors proposed a separate amount of award-fee (up to a specified maximum of 2.5 percent of the yearly offered price) and were required to identify in their proposals the disposition of those funds. The successful offeror indicated that a much higher percentage of the fee earned would either be distributed to, or controlled by, the employees themselves.

The first contract performance period recently concluded with the contractor earning 93 percent of the available award-fee. The workforce will now receive substantial bonuses and should be more motivated to do an excellent job.

4. Performance-Based Incentives

Incentives should be used when they will induce better quality performance and may be positive, negative, or a combination of both. They should be applied selectively to motivate contractor efforts that might not otherwise be emphasized, and to discourage inefficiency. Incentives should apply to the most important aspects of the work, rather than each individual task.

Where negative incentives are used, the incentive selected should represent as closely as possible the value of the service lost. This amount can be computed by determining the percentage of contract costs associated with each task. For example, if a given task represents 10 percent of the contract costs, then 10 percent will be the potential maximum deduction in case of task failure. Similarly, if a task is not performed according to the requirements stated in the contract, deductions can be computed based upon tables or formulas designed to reflect the value of substandard output.

Effective performance-based contracts:

- Define work in measurable, mission related/terms;
- Contain performance standards;

- Include quality assurance plans for measuring performance; and
- Provide financial incentives and penalties based on performance.

Performance incentives should be challenging yet reasonably attainable. The goal is to reward contractors for outstanding work but not penalize them for work that is fully satisfactory but less than outstanding.

The definitions of standard performance, maximum positive and negative performance incentives, and the units of measurement should be established in the solicitation. They will vary from contract to contract and are subject to discussion during a source selection. Care must be taken to ensure that the incentive structure reflects both the value to the Government of the various performance levels and a meaningful incentive to the contractor.

Incentives should correlate with results. Agencies should avoid rewarding contractors for simply meeting minimum standards of contract performance and should, instead, create a proper balance between cost, performance, and schedule incentives. The incentive amount should correspond to the difficulty of the task required but should not exceed the value of the benefits the Government receives. Agencies need to follow-up to ensure that desired results are realized (i.e. that incentives actually encourage good performance and discourage unsatisfactory performance). Verifying the effectiveness of the incentives used is important.

Past performance "report cards" per FAR 42.15 should reflect adherence to performance requirements when a Performance Work Statement (PWS) has been used. Performance under performance based service contracts (PBSC) provides better data for evaluation of past performance under other-solicitations. A powerful incentive of excellence and customer satisfaction is created when contractors know their performance will influence future award decisions.[58]

Organization: **Department of Energy**
Program: **Site Cleanup**

The Department of Energy (DOE) is more dependent on good contractor performance than any other agency – 90 percent of its $15 billion budget is applied to contracts, with the majority of the dollars going to the labs.

Without proper management, training, and focus, there can be problems. In 1995, DOE's performance based incentive (PBI) program contained $14.2 million in fees covering 34 incentives with 86 objectives. Contractors were paid incentives for work done before the fees were instituted and for work that was never completed.

In 1997, the DOE Inspector General criticized the use of performance incentives at waste sites and labs. Incentives were identified as lenient, monetary payments were made for less than satisfactory results. Fees were paid for work performed before fees were established. Performance targets were vague and not results oriented.

In 1998, after a year of focused attention on improvement, incentives became specific and thresholds for acceptable performance were raised. Development of the incentives included participation of not only site management, but also staff. Performance measurement was transformed to a management process and taken out of the bureaucracy. The focus on defining what needs to be done, not how, freed contractors to exercise ingenuity and creativity to meet requirements and encouraged contractors to come up with cheaper and better ways of accomplishing work.

The use of performance based incentives (PBI) tied extra fees to specific critical work efforts based on a preset schedule in the contract. For example, at the Hanford site in Washington State, the contractor developed an approach that cut 16 months and $77 million from a previous schedule and estimate.

Organization: **State of Virginia**
Program: **Construction**

The State of Virginia recently awarded contracts for reconstruction and improvement of critical interchanges in the DC Metro area. This $350 million project includes building or reconfiguring more than 40 bridges and ramps and 21 traffic lanes. The effort must be completed on time and within budget. Not only are funds limited, but any delay in completion or major divergence from the schedule could wreak havoc on

commuting in the area. This would have a direct impact on the cost of doing business within and around the DC Metro area since the interchanges are essential traffic points on the North-South interstate transit routes. Finishing early results in cost savings to the commuter, consumer, and taxpayer. So critical are these savings, in fact, that the following incentives are included:

- $10M bonus for early completion (9 months early) of first two phases (value of phases is $120M). $5m bonus if finished 6 months early.
- Negative incentive of $30,000/day if work is late.

Organization: **State of California**
Program: **Earthquake Reconstruction**

In 1994, an earthquake caused considerable damage to the highway infrastructure in and around the Los Angeles area. The damage blocked the most heavily traveled road in the United States, the Santa Monica freeway, closed a major north-south interchange north of the city, as well as other bridge and road damage. It was extremely critical to reopen the roads and rebuild the bridges. To accomplish this, the State of California designed an extremely aggressive incentive structure on a fixed price contract to ensure earliest completion of the repairs and reconstruction.

This incentive structure included an early completion incentive of $200,000 per day if it was completed ahead of schedule. The contractor completed the work in 66 days, 74 days early. He was paid a $14.8M incentive in addition to the $14.9M project price. According the State of California, this resulted in savings from the avoidance of lost productivity of $1M per day.

Organization: **Navy**
Subject: **Aircraft Maintenance Contracts**

Conversion to performance-based contracting for Navy aircraft maintenance resulted in an immediate savings of $25 million. Additional savings are anticipated through the positive and negative incentives contained in the contract. The proposal, evaluation and award process took 30 days less than was needed for the previous non-performance based competition. Working with industry as a team resulted in savings in time and money. Currently, performance is surpassing the contract's minimum required standards.

Organization: **Tennessee Valley Authority (TVA)**
Subject: **Water Treatment**

TVA established a unique performance cash incentive for a raw water treatment service contract by creating a fee pool to which both TVA and the contractor contribute. It works as follows:

- The TVA business team evaluates the contractor's performance semiannually.
- If the contractor meets the established performance evaluation criteria, the contractor is awarded their contribution to the fee pool.
- If the contractor exceeds the established performance evaluation criteria, they receive all or a portion of TVA's contribution to the fee pool.

Before TVA awards any portion of its contribution to the fee pool, however, the contractor must have demonstrated cost savings to TVA in excess of the fee pool incentive payment (e g., if the contractor is awarded one percent, they must have saved TVA two percent or more).

5. Reliability Improvement Warranty

Organization: **Army**
Program: **Multiple Launch Rocket System (MLRS)**

A Reliability Improvement Warranty (RIW), structured with a firm baseline, is a proven form of positive monetary incentive to the contractor. The objective of a RIW is to motivate the contractor to design and produce equipment that will have low failure rates and low repair costs during operational use. A reliability improvement warranty can provide:

- An incentive for the contractor to earn additional profit; and
- The Government assurance that any configuration changes made by the contractor does not degrade long-term reliability.

As with other warranties, the need for credible data regarding the operational environment of the end item and the logistics channels through which the item flows is essential. The data is essential for failure analysis to identify areas for improving reliability. It can be difficult to:

- Judge the time period between delivery, acceptance, and installation of the item in the field, and the period for removal and return of the item to the contractor for repair; and
  Predict the Mean Time Between Failures (MTBF).

Though the RIW can be introduced at any point in the acquisition cycle of the item, introduction early in the acquisition cycle provides greater opportunity to structure a total incentive package, maximizing cost reduction and increasing earned-incentive opportunities. This is especially true with the use of performance specifications, where long-term contractual relationships are envisioned. The motivation is to design and/or upgrade systems (at investment cost that may or may not be shared by the parties) to reduce future repair costs by increasing reliability.

Suggested elements of a RIW can include:

- Item identification and standard definitions.
- Essential performance requirements.
- Warranty period.
- Performance warranty minimum requirements (e.g. MTBF, MTTR, Turnaround) and provision for warranty of replaced items.
- Identification of planned operative hours, method for recording, and provision for contract adjustment if hours differ from planned.
- Incentive payment provision should state a range of reliability with payment schedule for exceeding and a penalty for falling below the range.
- Transportation responsibilities.
- Remedies and exclusions specifying additional terms, limitations and any peculiar requirement affecting the warranty.

6. Terms and Conditions

Contract Financing -- Performance Based Payments (PBP) Commercial Terms and Conditions

Performance Based Payments (PBP) are an effective means of providing contract financing, with reduced burden to both the Government and industry. PBPs can be provided "…only to the extent actually needed for prompt and efficient performance, considering the availability of private financing."[59] The use of PBPs will be viewed as an incentive to contractors who might otherwise not be able to compete or have the opportunity to successfully perform because of a variety of legitimate reasons. PBPs cannot exceed 90% of the price prior to the delivery payment.[60]

The approval of commercial performance based payments[61] in association with a FAR Part 12 commercial acquisition provides additional incentive for industry to enter the Government marketplace.

Acquisition reform has brought significant changes to FAR Part 32, Contract Financing. There is now a distinction between commercial and non-commercial financing. In fact, a new FAR Subpart 32.2, Commercial Item Financing, allows for the use of commercial financing arrangements that have been determined to be appropriate or customary to a particular market segment. No longer is the Government limited solely to the use of delivery payments, which are made after an item is tendered for delivery and accepted. Financing payments such as advance and interim payments can now be used on contracts for the purchase of commercial items.

The new policy represents a significant change from the previous market survey requirements in terms of the goals or outcome of the activity. While both require the identification of qualified or capable sources in order to foster competition, the new policy emphasizes the use of market research in order to promote the use of commercial items as the first choice in meeting Government requirements, and non-developmental items (NDI) as the second choice.

Incentive Relationships

1. Types of Contracting

Several new approaches to the contracting relationship are being developed and put into practice. These approaches represent a change in the approach to the relationship and a shift in the risk from Government to contractor but with a commensurate shift in the opportunity for reward.

Share-In-Savings (SIS) Contracting

The share-in-savings contract is a version of fixed-price, performance-based contract now being used to shift cost and performance risks from the Government to contractors. To persuade contractors to take the risks involved in devising and building solutions without fee guarantees, agencies are building partnerships with their contractors. The qualified bidders get unprecedented access to organization programs and people, as well as a role in managing the project. SIS is endorsed in the Clinger-Cohen Act of 1996, PL 104-106 (FARA).

As mentioned earlier, performance contracts carefully describe work in terms of the results an agency seeks, set performance standards based on those results and measure contractor performance against those standards. The idea is to let contractors apply ingenuity and innovation to get the work done quickly and well, instead of dictating to them the Government's preferred approach. Fixing the prices of these contracts places the emphasis for results in schedule and program costs on contractors if they expect to increase profits. Often, agencies add performance incentives to further emphasize the importance of performance targets for critical elements of service.

There are three types of SIS situations: [63]

- **Revenue enhancement:** an agency seeks to enhance revenue by collection of taxes or user fees.
- **Cost avoidance:** an agency wants to reduce a net expenditure by cutting the cost of an operation. The Government shares automatically in any savings.
- **Agency reward:** an agency wants to reduce a net expenditure and wants to keep the savings for its own use.

A variant of the share-in-savings contract can guarantee offerors nothing, instead promising payment only when benefits result from the contractor's work on the contract. The offeror, not the Government, assumes the upfront project costs so the Government doesn't pay for solutions that fail.

Share-in-savings contracts bring unique challenges for Government agencies. To persuade contractors to take the huge risks involved in devising and building solutions without any fee/profit guarantees, agencies must approach the business relationship as a partnership. Government contracting and program people define the problem to be solved rather than the work to be done and solicit conceptual proposals from potential business partners.

Organization: **Department of Energy**
Program: **Federal Energy Management Program**

The Energy Department is using the share-in-savings approach to help federal agencies reduce their energy consumption, as required by the 1992 Energy Policy Act and an executive order requiring a 30-percent reduction in energy consumption in federal buildings between 1985 and 2005. The federal Government is the nation's largest energy consumer using $4 billion worth of energy to heat, light and operate its 500,000 buildings each year.

To achieve the 30-percent reduction by 2005 would require energy savings worth $1 billion a year, requiring an estimated investment of $5 billion in energy savings equipment. To overcome this initial financial investment, Energy's Federal Energy Management Program (FEMP) has crafted energy savings performance contracts (ESPCs) (see 10 CFR 436).

Under these contracts, energy service companies pick up all the upfront costs of identifying a facility's energy needs and then buying, installing, operating and maintaining energy-efficient equipment to cut energy

costs. During the contract, the firm owns the equipment. When the contract ends, the Government owns it. In payment, the companies get a share of energy savings generated by the improvements during the contracts, which can last as long as 25 years.

FEMP negotiated a series of contracts valued at $5 billion and modeled on multiple-award, indefinite delivery/indefinite quantity contracts with firms in six regions across the country. Under these contracts, agencies use delivery orders to contract with firms that already have competed and won slots on a regional "Super ESPC roster." An agency can select a single company or request proposals from more than one, without advertising the procurement. FEMP awarded the first Super ESPC, covering the Western Region of the United States, in May 1997 to five firms. A second, covering the Southeast, was awarded in January 1998.

Organization: **Army**
Program: **Information Technology Applied to Logistics**

SIS is directly applicable to Logistics Modernization. The Services have logistics systems several generations behind Information Technology state of the art. For example, the Army does not yet have total asset visibility in its decentralized parts system, to the level it believes is required to support the "right part, right time, right place" concept. By updating technology, the Army could quickly locate and deliver spare parts while stockpiling fewer parts. System benefits would include fewer purchases of spare parts and save the Army $4B over 10 years.[64]

With SIS, the winning contractor would be paid in the form of a negotiated percentage of the savings that the military would realize from making fewer purchases of spare parts. This focuses the Government and vendors on the Government goal of generating results for agency missions and taxpayers.

Better performing contractors, those that have high hourly rates, are frustrated by the need to compete against manpower-intensive contractors for level-of-effort work in which the contractor can get paid even if it performs poorly. SIS allows quality contractors to compete more successfully, because the contractor gets paid based on benefits achieved rather than costs incurred. To be successful, SIS procurements must be able to value the benefits that a contract is supposed to achieve.

2. Competition by Phase (Development and Support)

Life Cycle Cost Reduction

Use of Cost As An Independent Variable (CAIV)

Shared Development of Dual-Use Product

Restructuring the Business Relationship

Several programs (EELV, DD 21, JASSM) appear to be successfully focused on CAIV as a critical part of a larger incentive strategy that includes lifetime competition or rolling down-selects through production.

The key focus of CAIV is on total LCC with four different cost objectives: RDT&E, production, operations and support, and disposal. These programs focus on production, through average unit production cost (AUPC), and sustainment, through aggressive goals for key performance parameters that drive these costs, such as mean-time-between-failure (MTBF) and mean-time-to-repair (MTTR).

The careful implementation of incentives through a consistently applied strategy is critical to the success of trade-offs required. Extending competition incentivizes the contractor to maintain price at the lowest possible level, and maximizes the leverage that the Government can exert on terms and conditions. When extended through several phases of a program, it has a direct effect on total program costs.

Organization: **Air Force**
Program: **Evolved Expendable Launch Vehicle (EELV)**

EELV is a critical program supporting 21st century growth in the space launch business. It focuses on a continuous lifetime competition, shared development of a dual-use product, restructuring of the business relationship, and it takes advantage of "other transaction" authority.[65] This approach helps to ensure you get a better product, with the latest technology, at the best possible price.

The launch commercial market is expected to average 25-35 launches per year by 2005. The military requirement is projected to be one quarter to one third of this total. It is evolving into a more commercially

JASSM is designed to be an affordable cruise missile with stealth properties, increased accuracy over current technology, and with a much lower unit and total cost. Projections initially were to reduce the $1M to $3M range for each missile to $700K or less. JASSM is being bought in two phases. Phase I was an initial down-select to two contractors from five. The Phase II contractors were paid $330M to develop a working system that would meet the performance requirements, and be contracted for on an FFP basis for most of production. Actual unit costs are estimated to be about $300K per missile.

Focus in the following areas drove success in the program:

- Use of commercial items during development as much as possible.
- During competition, the program office clearly communicated that affordability was an issue and that the Government would not automatically pay all bills.
- Past performance accounted for 50 percent in the downselection. Focus was on the performance rather than the evaluation of process.
- Contractor performance-based specification was used.
- Long-term warranty was included in the unit price.

The program funded parallel development to support a second contractor through program-definition, and risk reduction to ensure innovation and cost reduction through competition.

Restructuring the Business Relationship

Shared Development of Dual-Use Product

Decreasing barriers to entry into the Government marketplace provides an incentive for business to sell to the Government. Many businesses will elect to sell to the Government as long as they are not required to change their internal processes or procedures to conduct that business.

Organization: FAA
Program: Acquisition Management System (AMS)

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The FY 96 Department of Transportation (DOT) Appropriation Act (PL104-50) called upon the FAA to ym. 34Tpkt Manathrouletematneworm37.6(Acquimition ManaTjT (sot would me“in q anneeds”artmd mired to)on om fiFFP“ TDeaml

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•Organization:FAA
Program:AMS)

The new game will be more than just an arcade program, since it will test the ability of commanders to manage an entire battle situation, from grappling with logistics problems to judging the quality of intelligence to be used.

All of this, including the possible endorsement of the Army, could give the technology company a critical competitive advantage in the highly competitive games market, particularly with the logo "as used by the US Army" across the box. This dual-market opportunity creates a great incentive to provide the highest quality simulation software at the lowest possible price. According to MAK's marketing chief, "being able to use this stuff commercially really motivates us to do a kick-butt job."

Organization: National Imagery and Mapping Agency (NIMA)
Program: Satellite Imagery

According to Merrill Lynch, the satellite imaging industry will grow more than 56 percent, to $2.5 billion, by 2003. Space Imaging, a 1994 company formed by Lockheed Martin and Raytheon, specifically to break into the emerging commercial satellite imagery market, sells the Government products developed for commercial customers. Bound by the regulatory restrictions of the Government marketplace, the companies believed they could best reach new civilian customers by jointly setting up a company separate from the defense side of their business. "If we wanted to develop a strong commercial business, we had to keep this away from the defense culture," stated John Copple, Space Imaging's CEO.

The company sells satellite-image-based products to a variety of customers, from urban planners to oil exploration outfits. For 50 cents to $1 per square acre, farmers can buy infrared-treated satellite images that highlight stressed-out sections of their croplands. Space Imaging also sells the same pictures to DOD's National Imagery and Mapping Agency (NIMA), which archives the unclassified images for defense agencies. The Air Force, for example, uses them as a base for developing three-dimensional training simulations for pilots. Previously, this requirement would have been met by launching or using a Government asset.

Organization: Navy
Program: Naval Earth Map Observer (NEMO)

The Navy has gone beyond simply buying civilian products, and formed joint ventures to co-finance "dual use" projects. The Navy, for example, has developed a system called the Naval Earth Map Observer (NEMO), a $130 million satellite research project that had lacked funding. Space Technology Development, a space business based in Alexandria, Virginia, will launch the NEMO satellite in 2000.

The Navy wants the satellite to process highly detailed pictures of coastal regions that the Marines may have to assault. NEMO's cameras can "see" the ocean floor from space down to a depth of 100 feet, providing charts and sandbar locations to Navy planners. Its key feature is a "hyperspectral" sensor, which can identify minerals, vegetation, or pollution in the water—all of which is of great value to mining companies, and even to commodity traders looking to make long-term crop predictions.

For this technology, the Navy invested 40 percent of the development costs. As an incentive to engage in business in the Government marketplace, Space Technology invested the other 60 percent. The Navy's stake entitles it to a quarter of the satellite's images. However, Space Technology will actually own NEMO after the launch, pay for its maintenance, and receive 100 percent of the profits. "The Navy didn't have enough money to do it, and neither did we, but we came to an equitable agreement on the usage issue, and now we're in business," says CEO Paul Setze.[67]

Organization: Army
Program: Commercial SATCOM Terminal Program (CSTP)

The Army's Communications-Electronics Command (CECOM) recently took advantage of the Fast Track delivery process used for small, low cost products and used it on an acquisition for 25 deployable Ku-band satellite earth stations valued at $18.2 M. The Army issued a solicitation, reviewed the bids, made a selection in four weeks, and took one more week to obligate funds. The winning contractor, Datapath, Inc., was required to deliver the first unit to Kuwait within 70 days from award.

This process, while not unusual for the commercial marketplace, was the primary reason Datapath elected to bid on the Army requirement. According to the Vice President of Sales for Datapath, Inc., David McDonald,

"…the streamlined process was "a plus" in the decision to bid the contract." Categorizing this satellite earth station terminal as a commercial item also reduced costs. In addition, the contract requires Datapath to totally maintain the system, further incentivizing total ownership cost reductions.

Organization: **Air Force**
Program: **Advanced Medium Range Air-to-Air Missile (AMRAAM)**

AMRAAM is a mature program that was previously dual-sourced with annual head-to-head competitions, and which has now been restructured. Several benefits can be derived from restructuring the incentive relationship in existing programs. For the Government, this includes reducing the average unit procurement cost (AUPC) and accelerating a reduction in program office manpower. Both return dollars to further development, sustainment, and modernization. For industry, more of the product can be sold and the profit opportunity can be increased.

The AMRAAM program is a good example of this competitive concept approached in three phases. Phase I included streamlining existing contracts through reductions in CDRLs, specifications and standards, use of the single process initiative, and other "requirement" reductions. Phase II included a comprehensive partnering with industry, whereby the contractor accepted configuration control below the system performance specification. The contractor is responsible for verifying system compliance.

Phase III included adopting new approaches to the business relationship including price-based procurements, long-term commitments with one contractor, self-oversight, and lean, integrated Government/contractor teams. In addition, the contractor could look forward to direct commercial sales to allies, being the source of repair and an integral part of the support and sustainment infrastructure.

3. Total System Performance Responsibility (TSPR) – Sustainment/O&S

As support costs for aging weapons systems increase, less money is available for upgrades, technology insertion and other needs. Initiatives such as the Air Force's application of TSPR and the Army's Prime Vendor Support (PVS) are innovative methods to incentivize contractor performance, ensuring availability of spare parts, readiness rates, and reductions in overall sustainment costs. The concept involves a single corporate contractor assuming complete responsibility for overall performance in the weapons systems field of operations.

The Army is considering this approach for the Apache helicopter and the M109 Family of Vehicles (FOV) Fleet Management program. The Air Force has implemented the concept through a TSPR contract with Lockheed on the F117A. The TSPR contract can be constructed to motivate the contractor to be cost efficient by making the contractor an equal partner in any cost overages or underruns.

Organization: **Air Force**
Program: **F117A Sustainment**

Lockheed Martin Skunk Works (LMSW) is the integrating contractor for 180 contractors that support the F117. The contractor has incentive to meet the budget and earn additional profit through 50/50 cost sharing of any underrun. Sustainment has been delegated to LMSW, with the SPO acting as overseer and retaining responsibility for meeting operational needs. This involves a $90M cost savings over the next eight-year term of the contract (five-year base plus three-year option) for the F117 SPO. LMSW has committed to another $80M in savings over the same period.

The Air Force intends to control performance and costs through a three-pronged incentive. The first prong is an *award-fee feature* (three percent of target cost). This will measure the contractor's performance in the areas of management, technical performance, subcontract management, and customer support. The second prong of this incentive is an *incentive fee performance matrix* (seven percent of target cost) that will measure seven areas of contractor performance. These areas cover most of the major categories of materiel management and their affect on operational readiness. The third and final prong has a *fifty-fifty cost share relationship*, which shares equally any overrun or underrun.

Organization: **Army**
Program: **M109 Family of Vehicles Fleet Management Program**

The Army is trying to achieve significant performance improvements and cost savings through contractor logistics life cycle support. Through competition, the Army will select an industrial-based fleet service manager to provide logistics management, maintenance, and modernization of the fleet through spares and systems technical support. Key program requirements for program success are:[68]

- No degradation of readiness.
- Work in both peace and war.
- Meet statutory and executive order requirements.
- Provide significant cost savings.
- Guarantee a competitive industrial base and vendor base for the future.
- Be politically sustainable.

4. Technology Development Incentives

The Small Business Innovation Research Program (SBIR) program is a sixteen-year-old program to stimulate quick turnaround, high-technology innovation among small businesses to meet the Governments R&D needs. Ten federal departments and agencies provide funding. It is a two-phase program. Phase I awards up to $100K for feasibility. Phase II awards up to $750K for development. After Phase II, funding comes from the agency sponsoring or contracting for further requirements

Organization: **Marine Corps (Joint Program)**
Program: **Unmanned Ground Vehicles/Systems Program**
Standardized Teleoperation System (STS)

The STS is in the form of a kit that may be applied to any standard military vehicle, enabling the vehicle to be operated in an unmanned state by an operator remotely located in a safe area. The specific mission is mine clearing. M60 tanks with STS kits applied were used to support U.S. peacekeeping operations in Bosnia during 1996-1997.

The Marine Corps utilized a Small Business Innovation Research (SBIR) contract that had earlier successfully developed and tested the STS. As a result, the joint program office was able to respond very quickly to an urgent requirement from the Office of the Deputy Chief of Staff of Operations, United States Army Europe, to produce, deliver, install, check out, and train military operators to use the unmanned mine clearing vehicles in Bosnia.

Using SBIR resulted not only in an early on innovative approach—standardizing a design for a vehicle teleoperation capability—but also saved money and, most importantly, time in responding to an urgent warfighter need. The entire process, from production, installation of the kits in theater, and training operators, only took seven months contrasted with several years in a conventional acquisition process.

Not only has the STS been applied to obsolete M60 tanks in the inventory, converting them to unmanned vehicles, but it also has been applied to D7G bulldozers, trucks and Hummvees. Reasons for success included the use of integrated product teams (IPT) made up of representatives from the joint project office (UGV/S JPO), the Engineering School at Ft. Leonard Wood, MO, and Omnitech Robotics, Denver, Colorado, and the selection of knowledgeable, dedicated people across all disciplines.

5. Team Approach / Communication

Increased performance, decreased cycle time, and reduced cost can result from a committed partnership between Government and industry that focuses on communication and the team approach to problem solving and management.

Organization: **Air Force**
Program: **Joint Direct Attack Munition (JDAM)**

JDAM is a price-based acquisition program (PBA). It is a strap-on kit to enable "dumb bombs" to be guided to their targets in all weather and conditions. The original estimate was $68,000 per unit, with a goal of $40,000 per unit using PAIV. The on-contract price is less than $15,000 and includes a 20-year "bumper-to-bumper" warranty that will save $49M in sustainment costs. This unique approach was based on an in depth understanding of motivation and incentives.

The program office created unique joint industry-Government integrated product teams (IPT), mixing Government staff with employees of the competing contractors. The Government team members performed the Government unique functions and left the contractor to accomplish its responsibilities. The result was a proposal that was of higher quality than would have been possible had it been done without this team approach.

The Government waived the requirement for cost and pricing data and based selection on the per-unit price offered, as well as the contractor meeting five "live-or-die" performance requirements. Offerors could modify any of the technical criteria as long as they met the performance goals.

The Government traded the reporting and technical requirements of the traditional relationship for a lower price. The quality of the selected offeror and the ongoing open relationship and communication continue to incentivize quality performance and lower costs. According to Terry Little, Air Force program manager for JDAM, "This whole notion of moving to a trusting, collaborative, commercial relationship gets products cheaper, faster, and I believe, better."[69]

Organization: **Army**
Program: **Thermal Weapons Sight (TWS)**

The TWS program is important as an example of a performance-based specification written in response to a Government requirement. Significant in this program was the reduction of a 65 page specification to 22 pages through elimination of "how to" instructions for testing. This area was deferred to the contractor for planning and implementation. The savings to the program ranged from 7-13 percent.

Organization: **Air Force**
Program: **Joint Strike Fighter (JSF)**

The cornerstone of the JSF Program is affordability—reducing the development cost, the production cost, and the cost of ownership. The program emphasizes jointness, technology maturation and concept demonstrations, and early cost-performance trade-offs integral to the weapon system requirements definition process.[70]

Some of the key successes in this program include the use of Cost as an Independent Variable (CAIV), close feedback regarding tradeoffs, and a major reduction in detailed specifications (performance based requirements). The requirements document includes approximately 300 requirements in comparison to 6000 for the F-22.

The Joint Strike Fighter's "family of aircraft" concept will ultimately build three different designs with high "cost commonality" (i.e., the designs will have key, high-cost components in common—engines, avionics, and many of the high cost structural components). This is different from past attempts at joint aircraft programs to use one design to meet all Services' requirements. The Services are working together on a set of joint requirements.

The contractors are conducting extensive studies to determine the appropriate level of commonality, and to identify where it makes sense to sacrifice commonality to meet unique Service needs. The JSF concept is building three highly common variants on the same production line, using flexible manufacturing technology. Cost benefits result from using a flexible manufacturing approach and common subsystems to gain economies of scale. Cost commonality is projected in the range of 70-90%; parts commonality will be lower, but emphasis is on commonality in the higher-priced parts. Commonality also brings the benefits of common depot maintenance, a commonly supported logistics tail, and increased service interoperability.

Development savings from the JSF "family of aircraft" approach are estimated at nearly $18 billion ($FY95) compared to three separate stand-alone programs, with total life cycle cost (LCC) savings projected at 33-55% compared to historical programs. [71]

A good example of the approach is the open architecture concept for the Avionics and Sensor System. This approach supports affordability and an opportunity for new technology and new contractors. This integrated system, using an open architecture with a shared processing system, can more easily accommodate new technology as it appears, providing opportunities for new contractors to participate in the procurement. The Government benefits in that it can replace old technology with new technology without throwing out the whole system.

6. Multi-year Contracting (Long-term Relationships)

Multi-year contracting is not a new concept, but an effective one when exercised through completion. During the 1980s and the early 1990s there were several large programs (F-16 and the Defense Support Satellite Program (DSP)) that used multi-year contracting, but due to budget constraints and the uncertainties of the post-Cold War period, their use was limited. Multi-year contracts provide effective incentives through guaranteed quantities and prices. In addition to the AH-64 below, the C-17 is a multi-year procurement.

Organization: **Army**
Program: **AH-64 Longbow Apache Helicopter**

In August 1996 the Army signed a multi-year agreement for the production of 232 AH-64 Longbow Apache helicopters through 2001. Assuming the multi-year contractor performs through completion, the $1.9B contract will procure 50 helicopters more than it would have purchased had the helicopters been procured on an annual basis.

7. Competitive Sourcing and Privatization

The overall objective of competitive sourcing and privatization is to reduce the total costs of operation and maintenance functions, while maintaining or improving service levels. As the defense budget continues to shrink, and force modernization becomes an increasing priority, this area provides opportunity for cost savings.

For example, base community services are similar to those in every community nation-wide, and can be managed by the civilian workforce or contractors without degrading the accomplishment of the military mission. Further, equipment and parts management is similar to that in commercial industry. Use of civilian contractors will free military members to focus on core war-fighting capabilities, and the generated cost savings can be used to fund new weapons systems, operations, maintenance and support, and facilities.

Organization: **Air Force**
Program: **Pick-a-Base (PaB)**

The Pick-A-Base (PaB) program[72] is Air Education and Training Command's (AETC) strategic program for outsourcing base operating services. This involves an OMB Circular A-76 study.[73] Maxwell AFB is the first of five bases to be outsourced under the PaB program. The logic behind PaB is that one large A-76 study per base for operating services makes more business sense than many studies of individual functions and sub-functions.

In addition, estimated savings in the range of 20 to 25 percent can be realized, as compared to the current cost of operations, by consolidation of the various existing services. The Air Force announced the cost study to Congress on April 28, 1998 and estimates that Maxwell PaB will cost $49 million per year. The four remaining bases will be announced at a future date.

The PaB program expects to realize cost savings by mirroring private sector "best practice" models and integrating state-of-the-art technology. Additionally, savings are expected by downsizing the workforce, but it is imperative that the cost savings are realized without reducing the quality of customer service.

The unique approach being used in the PaB program is revolutionary. Never before have this many support functions been "packaged" and studied together. Typically, only a single function is studied during a given time frame. At one AETC installation, 68 different contractors worked on the installation under 68 separate and different service contracts. The sheer size and scope of the contract oversight and administration function became a concern as the number of contracts drove up administrative expenses.

Another limitation to the "piecemeal" approach is that it precluded taking advantage of economies of scale. With 68 contractors working on a base, the BOS account bore the cost of 68 separate payroll systems, 68 different management systems, 68 different accounting systems, and so on. Although each separate contracted effort may have been more efficient and less costly than the in-house effort it replaced, savings that could have been obtained by consolidating contracted efforts would never be realized.

In addition, the Command bears all the administrative expenses associated with conducting A-76. The more numerous the studies, the higher the administrative expenses. Increasing the size and reducing the total count of studies reduces the administrative costs. These cost include all the costs associated with the source selection, as well as staff support and administrative expenses.

HQ AETC did extensive market research prior to formulating the acquisition strategy. The market research revealed the following opportunities for increased performance and reduced costs:

- Private sector customers set a baseline for current cost and performance, prior to any outsourcing effort, to better evaluate proposed alternatives for process improvement, technology insertion, organizational structures, etc. and their impact on the organization. The baseline analysis provided customers with a reliable data point to continuously evaluate the impact of the outsourcing effort on cost and performance.
- Value-added suppliers, treated as partners, generated considerable savings by operating under outcome-based contracts, with wide latitude to innovate and accompanying incentives to cut costs.
- As part of the equation, suppliers are also focusing on the concept of knowledge management, and the ability to gather and analyze data for performance management, control, reports, and continuous process improvement.
- Consolidation allows suppliers to generate savings and preserve quality, through the application of continuous process improvement and a strategic partnership.
- Consolidation of requirements leads to verifiable, applicable savings in overhead, labor, and material costs. Industry trends show a shift to consolidation – especially by larger companies.

Cost reimbursement (CR) contracts, with incentives to reduce costs through process improvement, will be used for all contracts. CR contracts accommodate fluctuating requirements, the transition from quality assurance to performance management, cultural change, and reduced administrative effort, including reduced change activity, compared to fixed price (FP) contracts.

The incentives and shared savings portions of the contract structure are being developed to closely resemble the private industry incentives revealed through market research. Incentives and shared savings tied to cost reduction performance metrics, in combination with the firm-fixed overhead, operate as effective cost controls. The supplier recognizes that to maximize incentive fees they must not only control but also reduce costs.

If direct costs increase, the supplier will neither be entitled to nor receive the portion of incentives tied to cost reduction. The supplier will not gain relief from the firm-fixed overhead. If direct costs are reduced, the supplier can access the incentives. Additionally, the firm-fixed overhead will not be adjusted; if direct costs continue to increase, it is likely that actual indirect overheads will exceed the fixed amounts. This will create additional unabsorbed cost for an inefficient service provider, yet another motivation to control costs.

In addition, a waiver to the Cost Accounting Standards (CAS) has been requested and is pending. This makes sense for the following reasons:

- The PaB is a competitive commercial approach.
- Performance management provides the tools to control contract performance and costs.
- Costs are allocable to the contract level and 72-95 percent of the costs are direct and easily verifiable.
- The dollar value of the acquisition and the commercial approach will increase the potential base of suppliers that want to participate.

Outsourcing Parts Management

Under the IPV [74](Industrial Prime Vendor) concept, the selected firms predict inventory needs, order and then ship parts directly to depots and bases. This eliminates costly and lengthy stockpiling at Government warehouses.

Organization: **Defense Logistics Agency**
Program: **Industrial Prime Vendor Concept**

The Defense Logistics Agency (DLA) is contracting with industry, as industrial prime contractors, to manage the parts it uses to repair and overhaul weapons. The contracts speed parts deliveries, free employees from spending time ordering parts, and require contractors to guarantee that parts are available 95 percent of the time.

The long-term goal is to increase military logistics support provided by industry using the most efficient commercial practices. It will allow private firms not only to supply parts but also to then make the repairs. Currently, contractors supply the parts but cannot do repairs. The parts covered under the contracts are consumable items, such as bolts, rivets and screws, used in repairing and overhauling aircraft and ground systems.

Consumable weapon parts and supplies are only a small segment of DLA's overall $15 billion inventory, which includes items ranging from jet fuel to prescription drugs. DLA also has IPVs in place for food, medical supplies and pharmaceuticals. By the end of fiscal 1999, DLA will hire contractors to manage $100 million worth of consumable weapon parts at several major depots and logistics centers. Benefits include the following:

- The need to invest in large inventory levels will be eliminated. The DLA goal is to meet its spare parts requirements without holding any inventory through "just-in-time logistics delivery." Parts will be shipped as needed rather than stockpiled.
- Delivery times should drop from weeks to a few days under IPV.
- Workers will no longer have to spend their time placing orders.
- Having stock on hand will decrease work stoppages caused by part shortages.

Single Requirements Contract - Logistics Support and Sustainment

Organization: **Air Force**
Program: **Commercial**
Spare Parts Support for Depot Maintenance(E-3A)

Oklahoma Air Logistics Center (OC-ALC) and the Boeing Company are using commercial practices to get spares parts to the repair site faster, saving administrative expenses and dramatically improving the efficiency of depot maintenance. Average delivery time was reduced from 79 days to 18; Boeing's administrative/overhead costs were significantly reduced; and the Air Force 5-year spare parts acquisition costs are expected to be reduced from $42.3M to $11.3M.

By using commercial practices versus the past Government methods, OC-ALC is able to get spares to the repair site faster, which means the depot maintenance lines are more efficient and inventory levels are dramatically reduced, so planes are back in the air sooner. A Basic Ordering Agreement (BOA) has been established for Boeing commercial spares for use on the E-3 aircraft. Application of a General Terms Agreement (GTA) on the BOA, along with the new commercial practices defined in FASA, permitted the elimination of many past Government requirements and permitted the Air Force to capitalize on commercial practices.

Due to these Government requirements, all spares orders had to go through the Boeing Military Defense Group because Boeing's commercial group did not meet the military requirements. Prior to consummating the BOA, Boeing had to ship spares to their Military Airplane division in Wichita, KS, to have the parts packaged to meet MilSpec requirements prior to delivery to the Air Force. The elimination of these MilSpec packaging

requirements alone saves thirty days or more per transaction. Another advantage of the BOA is that by using commercial spares, OC-ALC is able to take advantage of commercial, catalog pricing, which makes price justifications easy.

The commercial agreement maximized use of the Boeing Commercial aircraft parts inventory and their computerized ordering system. OC-ALC can now, on-line, check availability off-the-shelf and then place the order instantly, if funds are available. The spare part is shipped the next day via the transportation method requested by OC-ALC, with priority shipping available for urgent situations. Other areas that have been streamlined include customer inspection and acceptance that eliminates the extra DD 250 step, and commercial warranty.

Organization: **Air Force**
Program: **Single Requirements Contract – Engine Spare Parts Streamlining**

The Oklahoma Air Logistics Center (OC-ALC) and General Electric have established a single requirements contract for a multitude of sole-source engine spare parts, streamlining the overall acquisition process and incorporating many commercial provisions. Use of this contract still preserves the Government's right to pursue competition for items when appropriate.

OC-ALC was able to award one requirements contract for a multitude of sole-source spare parts from General Electric, streamlining the overall acquisition process. The contract contains many commercial provisions, eliminating several Government requirements.

For example, the requirement for MilSpec packaging was not used and standard commercial packaging was accepted, saving an estimated $90,000 overall. Also, ISO 9000 provisions were included, rather than the Mil-I inspection requirements. The contract contains 46 different line items for spare parts. Competition for these parts may be initiated based on OC-ALC knowledge of the market and ongoing market research. An order on this contract can be issued almost immediately upon receipt of a funded purchase request. The average order lead-time is 3 days. Previous lead times for these same spares were 60-180 days and longer.

The existence of this requirements contract, along with the commerciality of the parts, eliminates the need for individual Justification & Approvals, detailed audits, and negotiations for each requirement. Instead, OC-ALC can rely on the established negotiated prices. The streamlined approach of this contract was demonstrated immediately when $18M worth of orders was processed on the day of contract award.

Organization: **Army**
Program: **Single Requirements Contract – Meals Ready to Eat (MRE)**

As a result of new business practices and changes in legislation, the acquisition of the MRE is now quicker and cheaper. The MRE was purchased as a yearly contract utilizing the mobilization exception to full and open competition. Awards were made for menu and case assembly, and for some of the components. Other component items were purchased using individual solicitations for each item using Indefinite Quantity contracts.

One acquisition was dramatically different. The MRE assembly and non-commercial components were consolidated into one solicitation. Indefinite Quantity contracts with two one-year options, for the assembly and noncommercial components, were awarded on November 12, 1997. The commercial components were grouped on a new commercial solicitation in accordance with the Federal Acquisition Streamlining Act (FASA). The indefinite quantity contracts awarded under this solicitation also contained two one-year options.

8. Single Process Initiative

Civil-military integration, eliminating the distinction between doing business with the Government and other buyers, is critical to meeting future military, economic, and policy objectives. The transition of DoD to a Performance Based Business Environment (PBBE), maximizing the use of commercial items and practices, is an essential step toward achieving civil military integration. The Single Process Initiative (SPI) is the mechanism that DoD is using to implement changes to existing contracts.[75]

Organization: **Defense Contract Management Command (DCMC)**
Program: **Various**

In 1998, Dr. Gansler, USD (A&T), institutionalized the SPI. SPI has:

- Expedited the transition of legacy contracts to common best practices;
- Baselined the conversion to commercial processes;
- Provided opportunity for the DoD to reduce costs; and
- Resulted in negotiated savings to existing contracts of $30M and cost avoidances of $444M.[76]

SPI is a contractor-initiated process. It can expedite the transition to not only a performance-based business environment, but also to an integrated digital environment. Industry must push the SPI to its subcontractor supplier base to increase the magnitude of the savings and benefits. These benefits include modernization, use of commercial products and processes, technology insertion, and decreased prices for future contracts.

SPI activity is extensive. Information on all SPI changes, both process and regulatory changes, can be found at http://www.dcmc.hq.dla.mil/Spi/Index.htm and is not recounted here.

9. Reduction in Oversight

One of the areas within which contractors have expressed concern is oversight by the Government. As budgets have declined, so have the workforce numbers. For those involved in contract administration in the Defense Contract Management Command (DCMC), this means finding a way to redefine the traditional role of contract administration.

Organization: **DCMC Hughes Los Angeles**
Program: **Space and Communications**

DCMC is redefining its role from process compliance to process improvement as it adjusts to declining workforces and budgets. The development of a Contractor Self-Oversight (CSO) program is unique in that the responsibility is a shared partnership between the Government and the contractor. Traditionally, the quality oversight function had been accomplished through an extensive quality management system that included Government quality personnel on the floor of the contractor plant and facilities.

This has been replaced at this location by a Government-contractor team that established measurement at essential points in the production process. The metrics chosen are reviewed on a monthly basis by the team and replace the traditional quality presence on the floor.

Highly successful in savings in manpower and cycle time, the CSO program, coupled to qualification of an ISO 9000 series quality standard, has significantly shifted risk to the contractor producing the goods or services consistent with sound business judgement and common sense.

CHAPTER SEVEN: SUMMARY AND PHASE II APPROACH

Summary

As the Army continues to cope with budget shortfalls, it is essential that acquisition savings be redirected to pay for the overall shift of resources—from maintaining infrastructure to ensuring force effectiveness and modernization. Reducing the cost of contract performance and reducing total ownership costs is a critical component in reengineering the acquisition framework necessary to support this shift in resources.

Success in this critical area, through a change in the approach to the business relationship with industry, opens the door to opportunities for innovation in the application of contractual incentives.

The Government-contractor relationship, over the past forty years, can be characterized as a balance between two often-conflicting goals:

- The Government sought to maximize contractor performance and gain the best product for the lowest price; while
- The contractor tried to minimize his risk while maximizing his return and delivering to the Government what was expected.

Absent the motivating forces that operate in the commercial marketplace, the Government marketplace substituted a complex body of laws and regulations dedicated to controlling performance and product. Sometimes there was a disconnect between the contractual incentives structured by the Government and the motivational factors driving the contractor. While many recognized the need for change, it didn't take hold until driven by two factors:

- Realization that the acquisition environment within which the DoD had operated had changed beyond the limits of the existing acquisition system's ability to adjust or evolve; and
- Leadership that not only talked about change, but also accepted the responsibility for implementing change, and formed a partnership with industry to make change a reality.

The reengineering of the acquisition framework is changing the landscape of the acquisition system. This change is providing an opportunity not only for contractors to sell and for the Government to buy items proven in the commercial marketplace, but also to increase the value of the performance of existing Government contractors. Procurement methods that were inadequate for effectively addressing the existing Government-contractor business relationship continue to be reformed through landmark legislation. This enables the Government to apply innovation more readily in its application of contractual incentives.

The new approach to the business relationship with industry is producing not only decreases in cost and in schedule cycle-time, but also corresponding increases in contract performance. The cross-section of Government-wide initiatives and programs addressed in this study presents many innovative examples.

Phase II

In Phase II, the insights from Phase I will be used to explore new and innovative approaches to the structure and implementation of contractual incentives and examine issues associated with their implementation. Phase II will engage the talents, opinions, and suggestions of key, senior industry and Government business leaders, as well as those of industry and Government contracting officers and program/project managers. Phase II will focus on the following areas:

- Expanding the list of factors to consider in developing contractual incentives.
- Addressing additional areas of consideration that are necessary to understand the issues associated with restructuring the acquisition framework and the approaches to the business relationship between Government and industry.
- Expanding the list of concepts and initiatives presented in the cross-section in Phase I.

- Examining evolving areas of innovation and recommending additional areas of innovation for study, based on the experiences and expertise of the industry and Government participants. These include areas such as output contracting[77], ownership cost contracting[78], and price-based acquisition[79].
- Focus more efficiently on the application of contractual incentives to the total cost of ownership for weapon systems and equipment. The recent combining of the Army logistics function with the acquisition function enhances this opportunity.
- Considering the influence of other functional disciplines (e.g. budgeting, financial management, logistics, and so on) on the application of innovative contractual incentives.
- Addressing restrictions and opportunities presented by law, regulation, and policy.
- Addressing special topics as determined by the focus groups.

Appendix A: Studies on Motivating Organizations

While there have been many studies about employee motivation, the subject of motivating organizations has become a focus only within the past twenty-five years. A 1973 study by two Navy contracting lieutenants, Hill and Shepard[80], examined the effectiveness of contract performance incentives within and upon an organization. They found the following:

- Contract incentives were not passed down to the lower levels within the organization.
- There was no conscientious program to analyze tradeoffs designed to maximize profits.
- Different types of contracts were not treated with different attention.
- All contracts were treated the same administratively.
- Incentive payments were made years after actual performance, thereby reducing their effectiveness.
- Government program management attention was lacking in the early, critical stages of the contract.

A 1970 study by Hunt, Rubin, and Perry examined twenty-seven industrial organizations under a NASA grant.[81] Most of the twenty-seven firms were heavily engaged in research and development (R&D) contracts. Nineteen were prime system contractors and the remainder was, for the most part, subcontractors. Twenty companies did over 80 percent of their work with DoD. The study found the following:

- Contracts with and without performance incentives were managed the same. Sixty-seven percent of the contractors did not adjust procedures to maximize incentive gain.
- Sixty percent of the group used incentives among prime and subcontractors. Delivery was the most frequently incentivized area. Normally, it took the form of a penalty or a liquidated damage.
- The rationale for using subcontractor incentives included the following:
    - To induce motivation on performance quality and/or delivery.
    - To induce operational discipline to ensure that work received management attention.
    - To distribute risk more equitably.
- Internal incentive systems were confined to management levels and often only to executive levels, focusing more on schedule and performance than on cost.
- The large defense contractors viewed profits in the 6-8 percent range and lower as acceptable and smaller contractors viewed profit in the 6-8 percent and higher as reasonable.

A 1968 study on the foundations of incentive contracting by the Logistics Management Institute found the following[82]:

- Short-run profit on defense business is sacrificed in favor of achieving:
    - Company growth;
    - Increased market share;
    - Better public image;
    - Organizational prestige;
    - Commercial “carry-over” business;
    - Opportunity for follow-on business; or
    - Greater shareholder expectations for future growth and profit.
- Willingness to accept a loss or low profit/fee made sense to:
    - Gain competitive advantage by performing R&D in areas of potential future business;
    - Acquire or retain competent personnel in scarce disciplines;

  - Spread fixed costs over a broader base; or
  - Prevent a competitor from entering the market.
- Company sales are more of a driver than profit rate. Management did not attempt to maximize profit or fee on individual contracts, rather it optimized among many objectives. Most important were those focusing on maintaining or improving market position and assuring future growth. Profit was secondary.

Recent studies by the Defense Systems Management College (DSMC) reveal not only findings similar to the studies of the 1970s and 1980s, but also some additional findings regarding motivation and incentives.[83] These include the following:

- Too often, contractor motivations that lead to cost growth are ignored.
- Contract type is not the determining variable in contractor behavior.
- Rewards should be clearly tied to specific behavior and they should be immediate.
- Companies do not organize to implement incentives, specifically:
  - The information structure of the company often does not match the incentive structure.
  - Companies do not implement incentives organizationally.
  - Often only the contracting and finance departments are aware of the incentive.
- Best & Final Syndrome. This involves the following:
  - Contractors accept incentives that may not be optimal to win a proposal; consequently, the program begins "in the hole."
  - Incentives must offset the incidence of cost.
- Complex multiple incentives are difficult to administer.
- Short-run decisions are primarily influenced by long-range commitments.
- Government administrative practices all but eliminate any opportunity for the incentive to function.

Appendix B: A Classic Example of Failed Incentives – A-12

DoD acquisition history provides many examples of failed incentive structures and lack of attention to Government and industry motivators. A classic example is the Navy A-12 program. The following summary comes from the DSMC Program Manager's course training case study on the A-12.

The A-12 program provides an example of the evolution of many negatives in the Government-contractor relationship that evolved since the 1950s. While there were many other A-12 program issues, the following lend themselves directly to this study. (As demonstrated in Chapter Six of this study, many of the successes in incentivizing performance are clearly absent from the A-12 relationship.)

- There was a mismatch of an FFP contract with a stringent specification and immature technology.
- The FFP contract allowed for no flexibility between the contractor and the Project Management Office (PMO).
- Contractor buy-in: competition tended to promote an award based on lowest cost versus one based on the best value to the Government.
- The contractors planned to "get well" through contract modifications that did not occur.
- An average DoD major acquisition program takes 12 years from MS 0 to MS III. The Navy required 10 years with new, less understood technology.
- User requirements were inflexible on range and payload versus weight constraints.
- Program funding was not stable and requirements were not changed to reflect this fact.
- There was a corporate culture problem: fear of divulging program flaws for fear of program cancellation and personal career repercussions.
- Cost estimating was poor, based on an inability to predict task complexity.
- There was a lack of expertise in Cost/Schedule Control System Criteria (C/SCSC) in both industry and Government.
- The contractor possessed inadequate skills to develop stealth manufacturing technology processes.
- Contractor used "trust me" tactics: minimizing technical problems until after the project manager exercised contract options for LRIP aircraft.
- Due to both Navy and Air Force contract competitions (F-22), there was no incentive to share what knowledge was available.
- Contractor teaming began to break down under stress.

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List of Acronyms

ADR – Alternative Disputes Resolution
AF – Award Fee
AMC– Army Material Command
AMS – Acquisition Management System
ASPR – Armed Services Procurement Regulation
ATRB – Award Term Review Board
AUPC – Average Unit Procurement Cost
BPA – Blanket Purchase Agreement
CAIV – Cost as an Independent Variable
CAS – Cost Accounting Standards
CASB – Cost Accounting Standards Board
CBD – Commerce Business Daily
CIAM – Contractual Incentive Application Model
CC– Commodity Command
CM – Contract Manufacturing
COGP – Commission on Government Procurement
CPAF – Cost Plus Award Fee
CPFF– Cost Plus Fixed Fee
CPIF – Cost Plus Incentive Fee
CR – Cost Reimbursement
CSCSC – Cost/Schedule Control System Criteria
CSO – Contractor Self-Oversight
DAIP – Defense Acquisition Improvement Program
DARC – Defense Acquisition Regulation Council
DFARS – Defense FAR Supplement
DOE – Department of Energy
DSMC – Defense Systems Management College
DTC – Design to Cost
EELV – Evolved Expendable Launch Vehicle
EMD – Engineering and Manufacturing Development
ESPC – Energy Savings Performance Contracts
FAR – Federal Acquisition Regulation
FARA – Federal Acquisition Reform Act
FASA – Federal Acquisition Streamlining Act
FC – Factor Collaboration
FDO – Fee Determining Official
FEMP – Federal Energy Management Program
FFP – Firm Fixed Price
FP – Fixed Price
FPI – Fixed-Price-Incentive
GAAP – Generally Accepted Accounting Principles
GAO – Government Accounting Office
IP – Intellectual property
IPT – Integrated Product Team
IPV – Industrial Prime Vendor
IT – Information Technology
ITMRA – Information Technology Reform Act (1996)
JASSM – Joint Air-to-Surface Standoff Missile
LCC – Life Cycle Cost
LOC – Lines of Code
LRIP – Low-rate initial production
MAD – Mission Area Director
MPCL – Military Products from Commercial Lines

MTBF – Mean Time between Failures
MTTR – Mean Time to Repair
NEMO – Naval Earth Map Observer
NPV – Net Present Value
O&M – Operation & Maintenance
PaB – Pick-a-Base
PARC – Principal Assistant Responsible for Contracting
PBI – Performance-Based Incentives
PBPe u--2121.7(Performance-BPaymd Intives)]TJTSC[(O&M –41-2121.7(Performance-BSp Oicee for Contives)]TJTWS(MTB

Endnotes

[1] The complete Phase I report is presented in Appendix D.

[2] See Appendix A for list of participants.

[3] June 1999

[4] For the government, this acceptance of risk translated to lower contract price.

[5] William S. Kaplan, SAIC, August 1999.

[6] An Expert System represents information and searches for patterns in the information. It is a model of how a human expert analyzes a particular situation and an application of rules to facts to reach a conclusion. The knowledge base consists of expertise, wisdom, or rules-of-thumb represented by rules containing conditional statements or cases containing fact patterns. It uses rule-based reasoning (if-then). The algorithm is software code which processes the rules, cases, objects or other types of knowledge based on the facts of a given situation. The result is a solution set for consideration.

[7] "Breakpoint and Beyond" by George Land and Beth Jarman

[8] Additionally, the factors considered in no way are represented as all encompassing. Rather, it represents a starting list.

[9] "Procurement business case" is used synonymously with "business case" in this study.

[10] Concept Exploration is not included in this discussion.

[11] Chapter 6

[12] An Expert System represents information and searches for patterns in the information. It is a model of how a human expert analyzes a particular situation and an application of rules to facts to reach a conclusion.

[13] William S. Kaplan, SAIC, August 1999.

[14] Greatest value concept is based on a broader perspective than best value. While "best value" takes into account a standard to meet (i.e. good, better, best), "greatest value" may recognize that the selection may not in fact be the best of all alternatives. It may however be good enough and by paying less for the service or support, it will meet the requirement at lower cost and risk.

[15] FAR Part 15.2.

[16] Hybrid expert systems combine "rule based" and "decision tree" models thus more closely matching the decision-making process of the discipline.

[17] Analysis contributed by Major Bruce F. MacFarland, USA/SARDA, Oct 1999

[18] Max H. Bazeman, "The Virtues of Contingent Contracts," Harvard Business Review, Sep-Oct 1999.

[19] Wall Street Journal 9/30/99

[20] OP-ED, *Federal Computer Week*, Jan 11, 1999.

[21] "Some New Approaches to Award Contracting," *Acquisition Review Quarterly*, Summer 1997.

[22] Output Contracting: This initiative takes performance contracting to the next level. For example, a mil-spec would detail how to make a copy machine. A performance specification details the machine's performance. In output contracting, we recognize that we don't want a copy machine, we want copies. By issuing a solicitation that defines the output and the performance requirements (numbers/time limits), the contractor can decide on the best solution. The goal is to incentivize the contractor to optimize all the variables while working to improve performance.

[23] Ownership Cost Contracting: Government contracting has been historically based on arriving at the lowest acquisition cost and not necessarily the lowest total ownership cost versus the non-cost factors. This tradeoff occurs regularly in personal purchases. The concept can be applied to Army procurements.

[24] Price Based Acquisition (PBA): Simply stated, PBA does not rely on cost data to determine fairness and reasonableness. The price is determined with skills such as market surveys and parametric tools.

[25] Contractual Incentives, as used in this study, includes both contract incentives and the total incentive relationship between the Government and the contractor. *Contract Incentive* means profit, fee, or other monetary incentives, as well as non-monetary incentives, embodied in or arising directly from the terms and conditions of a contract. *Incentive Relationship* refers to the total business process that impacts the contractor's motivation.

[26] Dr. William J. Perry, "Acquisition Reform, A Mandate for Change," 1994

[27] Same as above

[28] Demong, R. F. (1978) "The effectiveness of incentive contracts: What research tells us," National Contract Quarterly Journal

[29] GAO Study "Incentive Contracts, examination of fixed-price incentive contracts," (1987).

[30] Melissa D. Rider, "The Award-fee Process as a Model for Using Vendor Experience and Past Performance in Contract Award Decisions," March 29, 1994.

[31] Gregory A. Garrett and Alan B. Beck, "Incentive Contracting: Pricing and Management," Arlington, VA: Educational Services Institute, January 1994, pp. 2-17.

[32] Office of the ASD (Supply and Logistics), 28 Mar 1958, Memorandum for the Chairman, ASPR Committee (ASPR case 58-36).

[33] Same as above.

[34] Same as above.

[35] Department of the Navy, BUSHIPS Instruction 4858.2, January 4, 1960.

[36] Acquisition Reform, A Mandate for Change, February 9, 1994, William J. Perry

[37] Same as above

[38] FAR Parts, including Part 12 (Acquisition of Commercial Items), Part 15 (Contracting by Negotiation), Part 25 (International Acquisition), Part 13 (Simplified Acquisition), and Part 45 (Government Property).

[39] Dr. William J. Perry, "Acquisition Reform, A Mandate for Change," 1994.

[40] Reducing DoD Product Development Time: The Role of the Schedule Development Process, 12/2/98, a work in progress. Author: Major Ross T. McNutt, SAF/AQXA.

[41] Program Executive Offices (PEO) and Defense Acquisition Commanders (DAC) were not mentioned.

[42] Contractor Motivation Theory and Applications, March 1981, Army Procurement Research Office, Ft. Lee, VA.

[43] Dr. John Hamre, Remarks to AIAA Acquisition reform Conference, January 1999.

[44] Dr. William J. Perry, "Acquisition Reform, A Mandate for Change," 1994

[45] J. Ronald Fox, in his classic study of defense acquisition, concluded from these characteristics that "There is no sensible reason to deny the obvious... The basic tenets of the free enterprise system do not apply." (Fox, 1974, p. 474)

[46] Monopsony: A market in which the product or service of several sellers is sought by only one buyer.

[47] Dr. William J. Perry, "Acquisition Reform, A Mandate for Change," 1994.

[48] Same as above.

[49] Dual-use capable firm: A firm able to produce goods or services for both Government and commercial markets.

[50] GAO Report, June 1996, Acquisition Reform, Military-Commercial Pilot Program Offers Benefits but Faces Challenges.

[51] *Electronic Business*, June 1998.

[52] Dr. William J. Perry, "Acquisition Reform, A Mandate for Change," 1994.

[53] Same as above.

[54] Defense Acquisition Deskbook, FAR Part 12 description.

[55] Same as above.

[56] The classification of these acquisition incentives is relevant to this study. Experts may agree or disagree with the assignment. Note that "cost based negotiations," profit policy," and "Value Engineering" are not specifically addressed since they are a component of other areas discussed.

[57] "NASA's SFOC: An Innovative Approach to Program Contracting," *Contract Management*, February 1998.

[58] Information on best Practices for Performance Based Service Contracting, OFPP/OMB, Oct 1998.

[59] FAR 32.104(a).

[60] OUSD DDP Memo, subj.: Performance-Based Payments, Nov 9, 1998.

[61] FAR Part 32.2.

[62] Defense Acquisition Deskbook, FAR Part 32, v. Feb 98.

[63] "What is share in savings?" Policy & Procurement, *Federal Computer Week*, Feb 22, 1999,

[64] OP-ED, *Federal Computer Week*, Jan 11, 1999.

[65] "Other transactions" are instruments other than contracts, grants or cooperative agreements. For the purposes of this discussion, there are two types of "other transactions." The first is an "other transaction" for basic, applied, and advanced research projects. This type of "other transaction" has generally been used to enter into dual-use research projects. The second is an "other transaction" for prototype projects directly relevant to weapons or weapon systems proposed to be acquired or developed by the Department of Defense. EELV used what is known as "Section 845 other transactions," or "other transactions for prototypes."

[66] *Armed Forces Journal*, August 1998.

[67] "The Pentagon Finally Learns to Shop," *Fortune*, Dec. 21, 1998.

[68] "America's Army and Acquisition reform—Our Keys to Success," *Contract Management Magazine*, August 1998.

[69] "On time, at Cost," *Government Executive*, Sept. 1998.

[70] Joint Strike Fighter Program Update Briefing, 10/23/98.

[71] JSF Program Whitepaper, JSF Program Website.

[72] USAF AETC Single Acquisition Management Plan (SAMP) for Competitive Sourcing and Privatization.

[73] Same as above.

[74] "U.S. Military to Hire Parts Manager," *Defense News*, date unknown.

[75] Memorandum signed by the Undersecretary of Defense, Acquisition and Technology, Subject: "The Single Process Initiative - A Long-term Perspective," 3 Jun 98.

[76] *PM Magazine*, Sep-Oct 1998.

[77] Output Contracting: This initiative takes performance contracting to the next level. For example, a mil-spec would detail how to make a copy machine. A performance specification details the machine's performance. In output contracting, we recognize that we don't want a copy machine, we want copies. By issuing a solicitation that defines the output and the performance requirements (numbers/time limits), the contractor can decide on the best solution. The goal is to incentivize the contractor to optimize all the variables while working to improve performance.

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[79] Price Based Acquisition (PBA): Simply stated, PBA does not rely on cost data to determine fairness and reasonableness. The price is determined with skills such as market surveys and parametric tools.

[80] Hill and Shephard (1973).

[81] Hunt, Rubin and Perry (1970)

[82] LMI study.

[83] Discussions with B.A. Kausal, The Air Force Chair, Executive Institute, Defense Systems Management College (DSMC) and excerpts from course APMC Elective #296, *Contracting Incentives* .