

Government Contracting - A Project Manager's Perspective



Presented by

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Project Managers and Contracting Officers: The Need to Understand Each Other

- “I can't understand it. I can't even understand the people who can understand it” - Queen Juliana of the Netherlands
- “Seek first to understand, and then to be understood” - Stephen Covey
- “If one does not understand a person, one tends to regard him as a fool” - Carl Jung
- “Before you contradict an old man, my fair friend, you should endeavor to understand him” - George Santayana

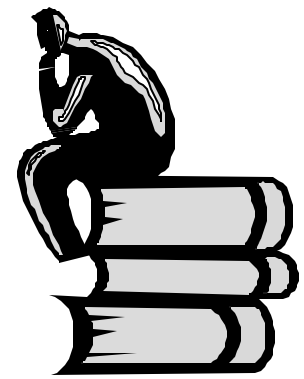
Project Managers and Procurement

- **“A Guide to the Project Management Body of Knowledge” (PMBOK), developed by the Project Management Institute (PMI), Newtown Square, PA, identifies nine management skills that all Project Managers require:**
 - Project Integration
 - Scope Management
 - Schedule Management
 - Cost Management
 - Quality Management
 - Human Resource Management
 - Communication Management
 - Risk Management
 - **Acquisition Management (Procurement)**

Private versus Government: Different Worlds

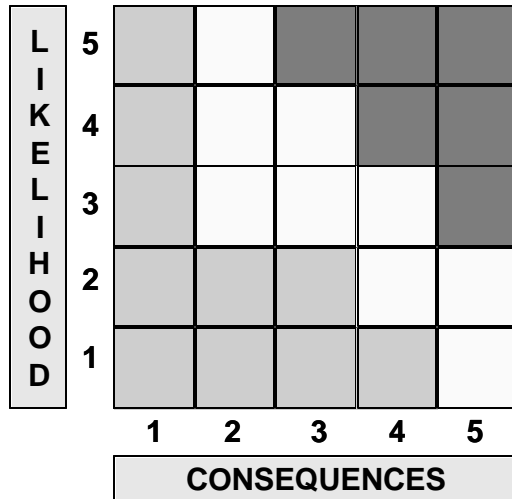
	Private	Government
What you can buy	Whatever is not illegal	Only what is authorized by law
Selection of sources	Whomever you want	Competition required by law
Contract terms & conditions	Whatever you write	Mandatory, pre-written clauses
Authority to enter into contracts	All that is implied by your position	Only what is explicitly stated in writing
Public information	It is generally totally private	It is generally publicly available
Socio-Economic factors	None	Many

Fixed Price versus Cost Plus – The Critical Decision



- Class Exercise : **For the following, choose whether you would use a FFP or a Cost Plus contract:**
 - The removal of a malignant tumor from your brain.
 - A physical exam required by your new employer as a condition of hiring.
 - Arthroscopic knee surgery to repair damaged cartilage.
 - Changing your car’s oil.
 - Fixing the loud, grinding noise your car makes whenever you start it on a very cold morning.
 - Replacing your kitchen faucet with a new “Moen Model X900” faucet.
 - Eliminating whatever is causing water to leak through your basement ceiling.
 - Treatment of a mysterious rash on your neck that itches terribly.
 - Curing your recurring bouts of severe depression.
 - Having a lawyer write a will for you.
 - Having a lawyer defend you in an auto accident case in which the other party is claiming negligence on your part.
 - Hiring someone to teach your daughter to play the violin well enough to get selected for the school orchestra.

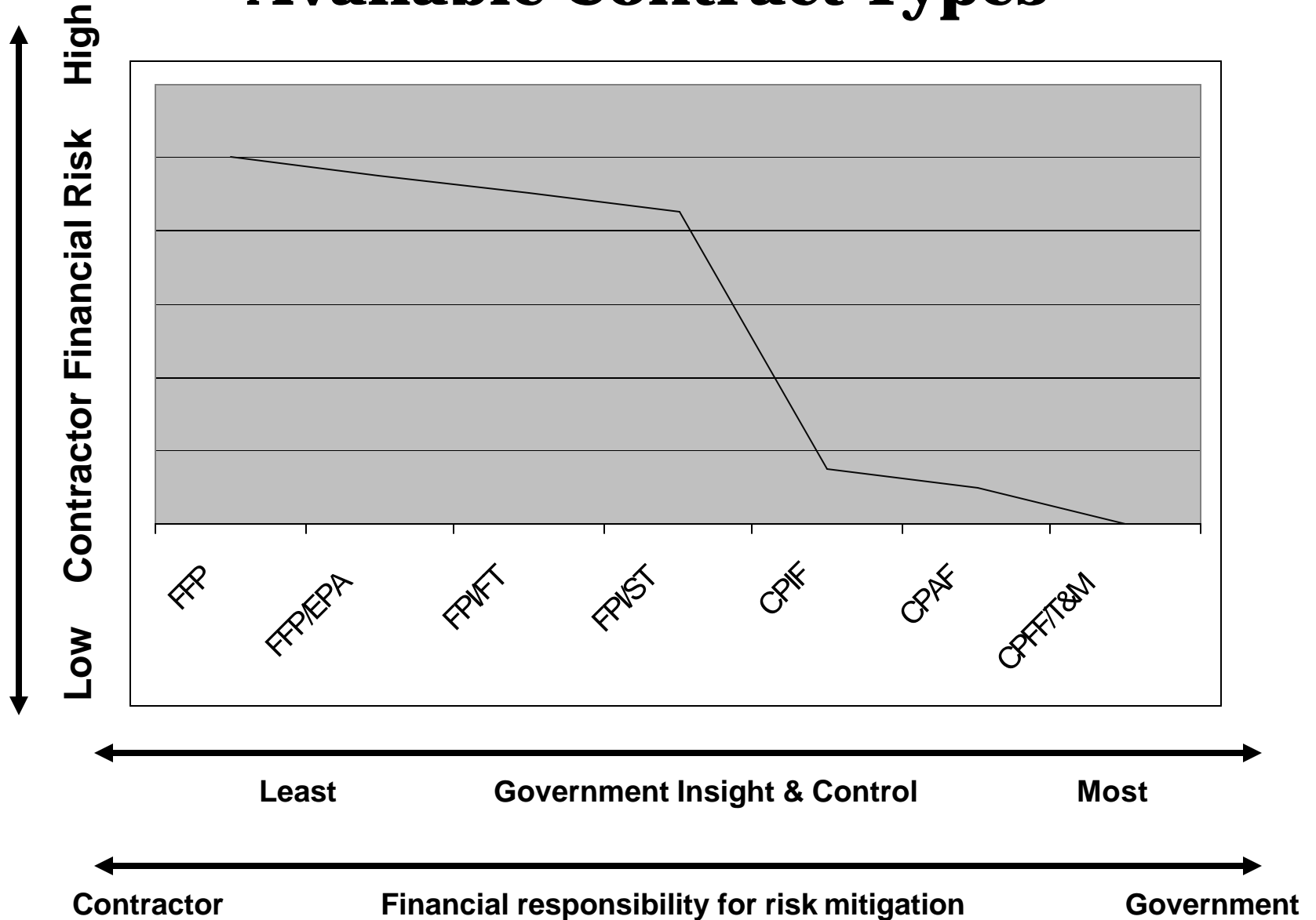
RISK Management, a Key Project Management Tool



Criticality	L x C Trend	Approach
High	↓ Decreasing (Improving) ↑ Increasing (Worsening) → Unchanged * New since last month	M – Mitigate W – Watch A – Accept R – Research
Med		
Low		

- The failure of a major project can be catastrophic to an agency. It is the Project Manager’s job to make sure that the project succeeds.
- The Management of Risk is a crucial element of sound project management. Risk management is a mature and proven process utilized by all competent Project Managers.
- The likelihood of unsuccessful contract performance and the consequences of unsuccessful performance should drive the decision to go fixed price or cost plus.
- For project procurements, it is more difficult to mitigate risk if the contract is fixed price

Available Contract Types



Fixed Price Contracts and Overruns – Why Should We Care?

- **Theory & Reality**

- The theory: FP and Cost Plus should cost the same, since the Contractor includes reserves/contingency in his FP
- The reality: The pressures of competition result in FP contracts that are less than the “probable cost”

- **Dangers of overruns in FP contracts (Project Manager’s perspective)**

- In a FP contract, profit = negotiated price minus actual cost
- Contractors in a loss position may be incentivized to:
 - Interpret contract requirements at the minimal level
 - Resist Government advice as being beyond the scope of the contract
 - Meet only bare minimum performance standards
 - Take greater risks by cost-cutting

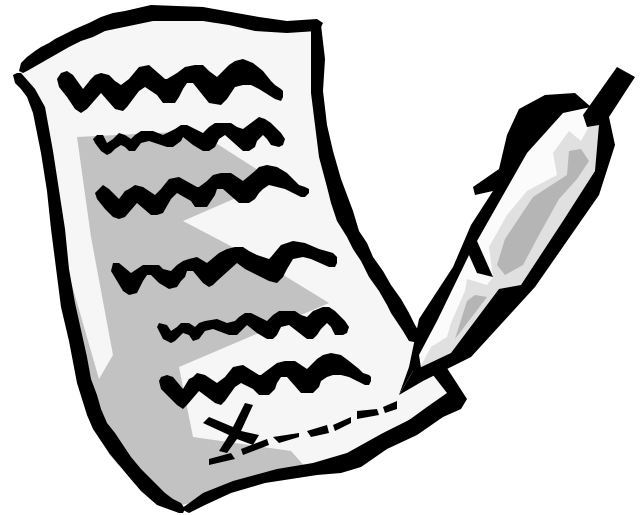
- **Implications on Procurement Strategy**

- Because of the huge difference in risk between FP and Cost Plus, choosing between these two types of contract is the most important decision in procurement strategy

**A Budget Is Not A Contract:
Why Contract Values Grow**



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Contract Value Growth

- **In a typical project, by the time the major contracts are completed, they will have increased in value from 25% to 300%**
- **Contract value growth is caused by many things;**
 - Cost or schedule overruns
 - Changed requirements & performance enhancements
 - Risk reduction
 - Late or defective GFP
 - Program stretch-out & budget cuts
 - Scope Creep
- **Contract value growth results in numerous contract modifications, possibly hundreds, over the life of the contracts. Each has to be negotiated separately. These can get very, very messy. They can also take a very long time to do.**

Why Are Initial Contract Values Too Low?



- **There is no way to price changing government requirements in advance**
- **Competition**
 - Competition results in “Buy-In” pressure on contractors
 - Government will usually not negotiate contract values at what we think it will actually cost to complete them
 - Sole source contracts can have “Buy-In” (AKA – “Selling the Program”)
- **Projects Managers generally hold and control all or most reserve, not the Contractors**
 - Flight Projects normally want to hold 20-50% reserve at the start of the project
 - Most reserve is eventually allocated to major contracts, but only when needed
 - Contract modifications are the mechanism for spending reserve



Contract Growth

- **Contract Value Growth** occurs through awarding new contracts (usually called “New Work”), or through modifications citing the authority of one of the existing contract clauses. This distinction puzzles many Project Managers (They all look like mods to PM’s)

New Work

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- **Contracts often grow in value through the adding of “new work” to contracts. This is done via a contract modification, but technically these are “new contracts”. They add work that is not already “within the general scope” of the existing contract. Typically, these are used to:**
 - Buy additional units
 - Extend the calendar period of performance of a services contract, or raise the contract ceiling
- **Project Managers hate “New Work” because it requires**
 - Sole Source Justifications
 - Publicizing the procurement to the world before executing it
 - Analyzing and negotiating all terms and conditions before allowing work to proceed
 - TOO MUCH TIME!!!

In-Scope Modifications

- **Contracts most often grow in value through modifications that result from some contract clause.**
- **Work added by these modifications must be “within the general scope” of the existing contract**
- **The following clause allows you to increase the Estimated Cost of a Cost Plus contract, but not the fee, in the event of a “cost overrun”**
 - Limitation of Funds
- **The following clauses allow you to increase the Estimated Cost and Fee of a Cost Plus contract, or the price of a Fixed Price Contract**
 - Changes
 - Stop Work
 - Government Property
 - Launch Delays
- **Project Managers prefer these types of modifications because**
 - They do not require Sole Source Justifications
 - They do not require publicizing
 - We can authorize work to start before all terms and conditions are finalized

Why Do They Take So Long?

- **Contract mods can take weeks or months (and occasionally years) to complete due to:**
 - Getting approvals to initiate them
 - Doing the analysis that is associated with them
- **Analysis is required for almost all contract mods because, by nature, they are sole-source procurements**
 - Technical approach must be assessed
 - Cost must be analyzed
 - Final price must be negotiated
- There is a reason why projects are often late doing technical evaluations and cost analysis
 - For a Project facing tough schedule deadlines, the most important considerations are to get an accurate cost estimate for the work, an acceptable approach, and to get the work authorized.
 - The rest of the process (detailed analysis, negotiation) is not on the critical path.
 - Result – Overdue Undefined Contract Actions

The Myth of Undefined Changes

- An Article of Faith – The Government can get a better price if work is negotiated before a change order is issued
- Case Study
 - Conducted in 1999 on 64 “overdue” change orders negotiated for the NASA POES and GOES Projects
 - Methodology – Compare the initial price of the submitted change proposal to the revised price at time of negotiation
 - Result – In a majority of cases, the proposal price decreased from the initial proposal compared to the updated value at time of negotiation
 - Reason:
 - By nature, grass-roots estimates for sole-source work come in high
 - Costs estimates usually utilize “worst case” assumptions
 - Contractors usually factor in a “risk reserve” (Cynics call this “padding”).
 - Reserves and assumptions are spread evenly over all cost elements and seldom so high as to seem unreasonable
 - The Truth In Negotiation Act forces Contractors to update their assumptions at negotiation. Usually the “worst case” does not happen

The Problem of “Black or White” - Discussion Exercise

- You are on a jury. Your assignment is to decide upon the punishment for people who have been convicted of crimes. Recently, to save money, your government closed down all prisons. It passed a law requiring that punishment for crimes can only be one of the following:
 - A \$500 fine
 - Death by lethal injection
- You have been asked to decide upon punishment for four criminals, who have been found guilty of the following crimes:
 - First degree murder of nineteen people
 - Embezzling \$10,000,000 from several churches and charitable organizations
 - Grand theft auto
 - Shoplifting \$400 worth of clothing from Macy’s
- What punishment will you choose for each conviction?

“To Fee or Not To Fee, That Is the Question”

- Cost growth is usually associated with work that was not anticipated or planned at the time of contract award
- Because of the time, effort, and expense of initiating and definitizing “formal” contract changes (i.e., initiating work via contract modification), small increases in work content are often initiated informally, with no CO involvement (scope creep)
- It is often unclear whether or not the additional work desired to be done is clearly required by the contract
- Cost growth is considered by the CO as either “fee-bearing” (change, new work, etc.) or “cost overrun”
- An issue that often arises during a major contract is whether or not an increase in cost should be accompanied by an increase in fee/profit
 - Can lead to protracted and acrimonious negotiations
 - Project Managers worry that such negotiations can destroy working relationships with their Contractor counterparts

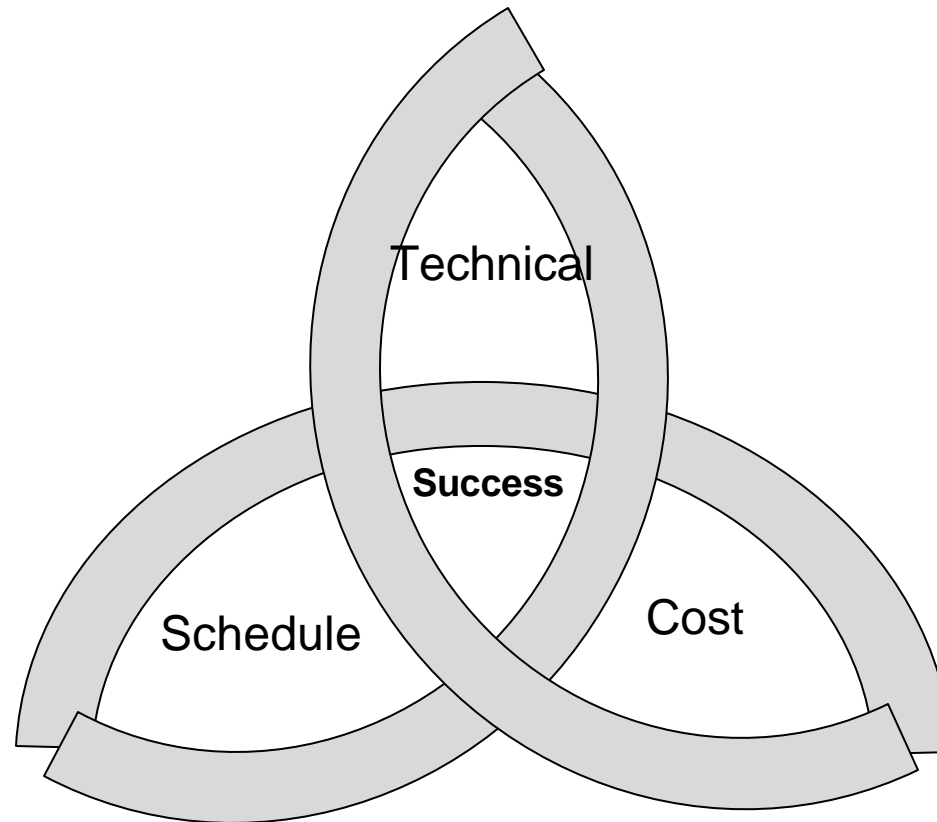
Scope Creep – A Project Manager’s Deadliest Enemy

- **What is “scope creep”?**
 - Gradual growth to the work done under a contract, resulting from well-meaning people deciding that certain work not originally anticipated under the original contract needs to be done
- **Who causes it?**
 - Well-meaning, working-level Government people interacting with their counterparts, to insure good quality and performance
 - Well-meaning working-level people who want to add enhancements
- **What’s so bad about it?**
 - It causes the cost to complete the contract to go up
 - It usually occurs without the knowledge of the senior-level Project Managers
 - It doesn’t become apparent until it has grown very big
 - There was no money budgeted for it, so it has to be paid for out of reserves or (heaven forbid!) a supplemental appropriation
- **How can Project Managers detect or prevent it?**
 - Thorough rigorous discipline at all levels of the project
 - Thorough and integrated cost & schedule performance analysis

Project Managers – Not Average People

- **Paper by Max Wideman, 1998, “Project Teamwork, Personality Profiles and the Population at Large: Do we have enough of the right kind of people?”**
 - **The distribution of the population on the four axes of the Myers-Briggs:**
 - **Extrovert (E) - 75%, Introvert (I) - 25%;**
 - **Sensing (S) - 75%, Intuitive (N) - 25%;**
 - **Thinking (T) - 50%, Feeling (F) - 50%**
 - **Perceiving (P) - 50%, Judging (J) - 50%.**
 - **ENTP** - alert to next move, analytical, good judge, too many projects, restless
 - **ENTJ** - drive to lead, harnesses people, structured, pushes hard, enjoys responsibility
- **Presentation from NASA Project Management Challenge 2006 – “Project Managers: Having the Right Stuff by Jerry Mulenberg”**
 - **“Among both male and female project managers at NASA, the majority are iNtuitive Thinkers (65 percent in fact), the most common types being Extroverted iNtuitive Thinking Judging (ENTJ) and Extroverted iNtuitive Thinking Perceiving (ENTP).**
 - **In the US population at large, only 10% of people are ENTP or ENTJ**

The Project Manager's Bible



A Project Manager's job is to build something that does what it is supposed to do (technical), on time (schedule), and within budget (cost)

Common saying in NASA, early 1990's – "Faster, Better, Cheaper... You can have two out of three".

Why Are There Are No Underruns?

- Project budgets ideally are supposed to have enough funding to deal with risk, but that seldom happens
- The never-ending pressures on the project's budget constantly put a strain on that money.
- If a budget opportunity presents itself (i.e., a cost under-run), those funds can be applied to a useful purpose
 - Reduce the risk of project failure
 - Reduce the risk of late delivery
 - Reverse the impact of prior de-scopings
- Underruns are like unicorns
 - Both are beautiful
 - Both would be wonderful to have
 - As the Irish Rovers sing - "You ain't never gonna' see no unicorns"

The Pain of Descoping

- When faced with budget shortfalls, projects are often forced to descope their contracts
- Descopes are painful, and require delicate negotiations with all of the stakeholders in the project
- Descopes can result in:
 - Reduced capability
 - Reduced quantity
 - Reduced usefulness
 - Delays to delivery
 - Loss of Stakeholder support
- “Procurements From Hell” example – NPOESS
 - Reduction from six spacecraft to four
 - Slip launch three years to 2013
 - Delete five of the thirteen sensors
- If a budget opportunity presents itself (i.e., a cost underrun), those funds can be utilized to restore desirable features or capabilities that had been lost due to de-scoping

Contract Value Versus Project Budget

- Projects manage to budgets, not to contract value
- Budgets focus on how much contracts will cost at completion
- The original negotiated price of a major project contract will invariably be far, far less than the estimated cost at completion of the contract, due to
 - Future de-scopes and re-scopes
 - Future rephasings and schedule changes
 - Risk mitigation
 - Use of project reserve
- The disconnect between initial contract value and estimated cost at contract completion causes enormous problems
 - Large multi-year contracts are subject to numerous and unpredictable changes and problems that cannot be accurately priced at contract award
 - Initial contract values do not include project reserve, which is typically 30% of contract value for major flight projects. Reserve is allocated to contracts via modifications.
 - Budgets are sometimes slashed to reflect initial contract value at award, not the estimated contract cost at completion

The Cart Before the Horse

- For huge, multi-year development contracts, it is impossible to accurately define all requirements prior to contract award
 - Quote from Project Auditors LLC – “You are most ignorant about a project at the very beginning. That’s when you have to make the most critical decisions about cost and schedule”
- Normally in major projects, the first several months of a contract are spent developing the accurate set of requirements for whatever will be built
- The process requires:
 - Extensive interaction between numerous Contractor, Government, and Customer personnel
 - Several months of time and large expenditure of money
- The process cannot be adequately done before award
 - Limitations on communication rule out the extensive interaction that is needed
 - No contractor can afford the bid and proposal money needed to do a thorough job
- End result – initial contract values are based upon best guesses about things that are extremely difficult to predict
- The Phased Acquisition process (two or more Formulation contracts with a down-select for the Implementation contract) is the best known current method to mitigate this problem, but
 - It is often viewed as prohibitively expensive
 - It is often viewed as requiring too much time and Government labor

Good Practices

- Use the Market Research Phase to get to know the capabilities of potential offerors and to surface flaws in you strategy or assumptions
 - Conduct in-depth one-on-one discussions, only with potential, viable primes
 - Use the Multi-Step Advisory process (FAR 15.202)
 - Don't tie your hands in this phase
 - Beware of the cry "What if they protest!!!" (There's a monster under your bed!)
- Beware of AEIOBC strategies (All Eggs In One Big Contract)
 - Major subcontracts are risky, and historically have caused the worst overruns
- Use phased acquisition and down-selects (NFS 1817.73) for major development
 - Award two formulation contracts (at absolute most three)
 - Fund the Formulation Phase adequately
 - Carry it to a meaningful milestone (PDR and/or IBR)
- Negotiate an accurate initial contract value
 - Use competitive discussions for a true back-and-forth negotiation of a realistic cost/price
 - The Offerors' Final Proposal revisions should equal the probable cost
- Staff the Government project adequately
 - The best way to insure good contractor performance is by having a strong and proactive Government Management Team with all the skills needed to oversee the contract
- Your problems do not end at contract award, only at contract completion
- Get the information and have the control you need. Don't be an observer, be a participant.
 - Place residents at the prime and major subcontracts
 - Make sure systems such as EVM are truly used
 - Meet face to face often and discuss problems and make joint decisions
- Never accept a statement that the FAR requires you to do something stupid

The Importance of Choosing the Right Procurement Strategy

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- **The selection of an inappropriate strategy can make life hell for a Project Manager**
- **Procurement strategy should be based on the nature of the items or services being purchased**
- **The most important elements of procurement strategy are:**
 - What type of contract you use (Fixed Price or Cost Plus)
 - How you define and measure successful performance
 - The extent of Government oversight that you need

Good News/Bad News



Good News

- The procurement regulations have a wide range of proven approaches
- The regulations allow the flexibility to tailor those approaches to maximize the likelihood of project success



Bad News

- Selecting procurement strategy is an art, not a science
 - Currently, success depends on the knowledge and experience level of the Project Team Members (PM, DPM-R, COTR, CO)
 - There are few tools to help managers choose the best approach
- Procurement strategies are sometimes influenced by outside parties who do not have an understanding of what is being purchased
- “Performance Based Contracting” is being mandated for without guidance for “if and how” to apply it to complex, developmental procurements.

Universal Procurement Risk Factors

- Program/Budget Stability
- Stability of Government's Requirement
- Maturity of Product or Service
- Maturity of Processes or Procedures
- Hazardous Materials and/or Processes
- Existence of Metrics
- Experience & Capability of Contractor Management
- Experience & Capability of Contractor Workforce
- Government Furnished Property
- Access to Secure/Sensitive Information and/or Systems
- Availability of Government Expertise and Human Resources to Monitor Performance & Solve Problems

Procurement Risk Mitigation Strategy

- Market Research Phase - Get to know the likely bidders to find out if they are capable of and willing to satisfy your requirements
- Competition Phase – Utilize solicitation provisions and evaluation factors to focus the evaluation and selection criteria on the areas of greatest risk
- Contract Terms & Conditions - Include contract provisions/clauses that will enable you to prevent or respond to problems
- Government Surveillance Methods - Make sure the Government team has adequate visibility into and control of contractor performance

Conclusion

- The vast majority of Project Managers and Contracting Officers are competent, hard-working people who want to do what is right, and to do so without wasting your tax dollars
- Project Managers and Contracting Officers work toward the same goal, but from different points of view and with different sets of responsibilities
 - “England and America are two countries separated by a common language” - George Bernard Shaw
 - “When you say ‘Yes’, say it quickly. But always take a half hour to say ‘No’, so you can understand the other fellow's side” - Francis Cardinal Spellman