

# **U. S. Government versus Commercial Markets & Acquisitions**

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# Elements of Total Acquisition Cost

## Contractor Prices

- Market
- Business Strategy
  - Finance
  - Technology
  - Risk
  - Contract Types
- Contract
  - Cost
    - Direct Cost (Labor & Materials)
    - Indirect Cost and G&A
  - Reserves
  - Profit

## Government Procurement Costs

- Policy, Priorities, & Budget
- Acquisition Strategy
  - System Architecture & Technology
  - Cost Estimate & Trades
  - Funding Profile & Program Schedule
  - Contacting Strategy
- Contract Implementation
  - Administrative
  - Technical
  - Cost Estimates
- Contract Payments over Life Cycle

Contract Cost is Only One Element  
of Total Acquisition Cost

# Microeconomic Models of Markets

Buyers \ Sellers	One	Few	Many	Sellers' Influence on Price
One	<p><b>Bilateral Monopoly</b>  <b>Example:</b> FAA/US ATC  <b>Eq. Price:</b> <math>P_{BM}</math> Negotiated            Monopsony <math>\geq P_{BM} \leq</math> Monopoly</p>	<p><b>Monopoly Oligopsony</b>  <b>Example:</b> OPEC  <b>Eq. Price:</b> Indeterminate</p>	<p><b>Monopoly</b>  <b>Example:</b> Utility  <b>Eq. Price:</b> <math>P_M</math>            Highest</p>	Total
Few	<p><b>Oligopoly Monopsony</b>  <b>Example:</b> US Navy Submarines  <b>Eq. Price:</b> Indeterminate</p>	<p><b>Bilateral Oligopoly</b>  <b>Example:</b> US Govt. Space  <b>Eq. Price:</b> <math>P_{BO}</math> Indet., Gen. Negotiated <math>&gt; P_C</math></p>	<p><b>Oligopoly</b>  <b>Example:</b> Petroleum  <b>Eq. Price:</b> Price <math>&gt; P_C</math></p>	Significant
Many	<p><b>Monopsony</b>  <b>Example:</b> Labor  <b>Eq. Price:</b> <math>P_m &lt; P_C</math> but Not Efficient, Output is Less</p>	<p><b>Oligopsony</b>  <b>Example:</b> 21st Cent. Ag.  <b>Eq. Price:</b> Indeterminate</p>	<p><b>Perfect Competition</b>  <b>Example:</b> None, ~19th Cent. Ag.  <b>Eq. Price:</b> <math>P_C</math> Low, Efficient</p>	None
Buyers' Influence on Price	Total	Significant	None	

Competition in the Large Contract Government Market is Imperfect

# Bilateral Oligopoly Market with Cooperation, Negotiation & Competition

Few Buyers Few Sellers	<b>Cooperate (One)</b>	Negotiate	Compete (Few)	Sellers' Influence on Price
	<b>Collude (One)</b>	Bilateral Monoply	Monopoly Oligopsony	Total
Negotiate		Individual Negotiations		
Compete (Few)	Oligopoly Monopsony		Bilateral Oligopoly	Significant
Buyers' Influence on Price	Total		Significant	

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**Price Fixing is Illegal in Some Markets**

Bilateral Oligopoly Market Becomes Monopolistic with Cooperation & Collusion

# U. S. Gov't vs. Com'l Large Contracts Markets

	U. S. Government	Commercial
Market Structure	Oligopoly Monopsony & Bilateral Oligopoly	Bilateral Oligopoly
Program Decision Criteria	<ul style="list-style-type: none"> <li>● Maximize Return to Constituents               <ul style="list-style-type: none"> <li>○ Citizens &amp; Congress</li> <li>○ Warfighter Capabilities</li> <li>○ Observation &amp; Science Data</li> <li>○ Socioeconomic</li> </ul> </li> <li>● Federal Budget</li> <li>● Technology</li> </ul>	<ul style="list-style-type: none"> <li>● Maximize Return to Shareholders</li> <li>● Value to Customer</li> <li>● Technology</li> </ul>
Metrics	<ul style="list-style-type: none"> <li>● <b>Total Cost of Program</b> <ul style="list-style-type: none"> <li>○ Government Cost</li> <li>○ Contractor Price</li> </ul> </li> <li>● <b>Schedule</b></li> <li>● Jobs</li> <li>● System Technical Performance</li> </ul>	<ul style="list-style-type: none"> <li>● Market Value (Share Price)</li> <li>● <b>Time Adjusted Financial Return</b></li> <li>● Intellectual Assets</li> <li>● Repeat Contracts</li> <li>● System Technical Performance</li> </ul>

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Gov't Market is more Concentrated with Different Decision Criteria/Metrics

# U. S. Gov't vs. Com'l Spacecraft Large Contracts

	U. S. Government		Commercial	
	Development	Non-Development	Development	Non- Development
<b>Requirements</b>	Incomplete Defined & Major Changes	Defined & Limited Changes	Defined & Some Changes	Well Defined & Fixed Changes
<b>Funding</b>	Variable in Amount, Profile & Certainty	Variable in Amount, Profile & Certainty	Variable in Amount & Profile	Generally Fixed in Amount & Profile
<b>Schedule</b>	Variable	Variable	Variable	Fixed
<b>Contract Type</b>	Cost	Fixed	Fixed	Fixed
<b>Contract Duration</b>	~10 years	5 > ~10 years	3-7 years	3-4 years
<b>Profits</b>	Limited, ~Cost	May be Limited	Not Limited	Not Limited
<b>Incentives</b>	Cost, Schedule & Performance	Cost, Schedule & Performance	NA	Performance
<b>Penalties</b>	Cost Sharing	NA	NA	Schedule
<b>Oversight</b>	Significant	Variable	Minimum	Minimum
<b>Technology</b>	TRL 6-8	TRL 7-9	Some New	Proven
<b>Examples</b>	<ul style="list-style-type: none"> <li>• EELV</li> <li>• ATDRSS</li> <li>• Webb</li> </ul>	<ul style="list-style-type: none"> <li>• Pegasus, CCDev</li> <li>• WGS</li> <li>• NA, Com'l Service</li> </ul>	<ul style="list-style-type: none"> <li>• NA</li> <li>• Iridium</li> <li>• EarlyBird</li> </ul>	<ul style="list-style-type: none"> <li>• Ariane</li> <li>• Intelsat</li> <li>• IKONOS</li> </ul>

**Commercial Spacecraft Contracts are Shorter and more Certain**

# U. S. Gov't Spacecraft Acquisition Alternative Examples under Constrained Budget

	Alternative	Examples	Program Examples	Market Result
<b>Legislative</b>	<b>New Legislation</b>	Extension of Other Transaction (OT) Authority	<ul style="list-style-type: none"> <li>DARPA Section 845, Falcon SLV</li> <li>NASA Space Act Agreements, Commercial Orbital Transportation Services (COTS)</li> </ul>	Increases Sellers
<b>Acquisition</b>	<b>Programs Re-Architected</b>	<ul style="list-style-type: none"> <li>Commonality</li> <li>New Cost Saving Technology</li> <li>Sharing                             <ul style="list-style-type: none"> <li>Other US Government</li> <li>Commercial</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Operationally Responsive Space (ORS)</li> <li>Space Environmental NanoSatellite Experiment (SENSE)</li> <li>Geostationary Operational Environmental Satellite (GOES)</li> <li>Commercially Hosted Infrared Payload (CHIRP)</li> </ul>	Increases Buyers & Sellers
	<b>Acquisition Strategy</b>	<ul style="list-style-type: none"> <li>Trade Cost vs. Requirements &amp; Schedule</li> <li>Prizes</li> </ul>	<ul style="list-style-type: none"> <li>NASA Crew Exploration Vehicle (CEV)</li> <li>DARPA Grand Challenges</li> </ul>	Increases Sellers
<b>Procurement</b>	<b>Contracts</b>	In lieu of FAR 15: <ul style="list-style-type: none"> <li>FAR 12</li> <li>FAR 14</li> <li>Leases</li> </ul>	<ul style="list-style-type: none"> <li>Wideband Global System (WGS), FM 1-3</li> <li>LEASAT &amp; DISA COMSAT</li> </ul>	Increases Buyers & Sellers

Acquisition Alternatives under a Constrained Budget Have Examples as Precedents



# FAR 15 Versus FAR 12 (Top Level)

FAR 15	FAR 12
Non Commercial Item	Commercial Item
Quote/Bid Process	Market Research
Competitive Offers	Bid Price
Negotiated	Generally Market Price
Cost & Fixed Type Contracts	Fixed Price with Some Exceptions
Development	No Development
Price & Cost Analysis	Price Analysis only
Mandatory Provisions and Contract Clauses	Limited Solicitation Provisions and Contract Clauses with Tailoring in Conjunction with Existing FAR Procedures In Part 13, 14, or 15
Price & Cost Data: Cost Accounting Standards Compliance, and Subcontractor Analysis	GAAP Data only
Contract Administration	Minimum, e.g., Contractor Quality Assurance Systems are Substitute for US Government Inspection And Testing

**FAR 12 Can Provide Cost Savings if Government Program Aligns with Commercial Market**





# U. S. Government Space Systems Acquisition under Constrained Budgets - Recommendations

- Legislative
  - Expand use of Other Transaction (OT) Authority
  - Reduce Funding Uncertainty
- Program Architecture
  - Maximize Program Element Commonality
  - Introduce Cost Saving New Technology
  - Increased Sharing/Hosting
- Acquisition
  - Increase Program Reserves
  - Trade Cost versus Requirements & Schedule
  - Increased use of Prizes for New Technology
- Procurement
  - Maximize use of FAR 12 & Leases
  - Investigate Implications of FAR 14 multi-step bidding
  - Simplify & Increase Standardization

Acquisition Costs under a Constrained Budget Must Address all Elements of Total Cost

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# Price Determination - Competition, Monopoly & Monopsony

