

# Games Contractors Play

## Games Contractors Play

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Section Dinner Meeting  
October 16, 2014

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## Bio of Joe Lukas




- >35 years of projects experience spanning engineering, manufacturing, construction, project controls, estimating, contracting and Portfolio, Program and Project Management
- Projects experience: includes information systems, product development, construction and manufacturing
- Vice-President of  since 2008
- AACEi member since 1992
- Earned Certified Cost Professional March 1, 1994



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## Bio of Joe Lukas



### Something You Don't Know About Me:

- I live near Orlando, Florida and I am frequently mistaken for the Governor of Florida – Rick Scott



So which one is Governor Scott?



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## Presentation Background



- Most private corporations and many government agencies have greatly reduced their internal staffing
- Organizations may have some internal Project Managers, a few cost management personnel and some engineers
- Organizations have to rely on contract suppliers of engineering, construction and even project management to get new capital assets installed
- Organizations need expertise in contracting work to ensure work is done efficiently for the best price and schedule



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# Games Contractors Play

## Presentation Objective



- Review top 10 most popular games contractors use to maximize their profits on contracted work
- Discuss specific examples based on the presenter's experiences working as both the owner and service provider
- Review the advantages and pitfalls in using alliance relationships

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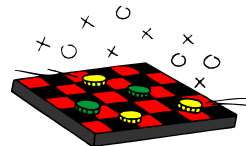
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## Presentation Topics



### 1. Top 10 Contractor 'Games'



### 2. Effective Alliances

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**TOPIC 1**  
**TOP 10 CONTRACTOR 'GAMES'**

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**Top 10 Contractor 'Games'**



1. Unrealistic Pricing
2. Incorrect Schedules
3. Team Substitutions
4. Contract Loop Holes
5. Cutting Corners
6. Inflated Change Orders
7. Contract Noncompliance
8. Misuse of Charge Numbers
9. Inaccurate Earned Value
10. Incorrect Invoices



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# Games Contractors Play

## Caveats on Contractor 'Games'



- Many contractors are trustworthy and ethical, so I don't want to leave the impression that all contractors 'play' these games
- However, contractors are in business to make money, and when faced with any project losing money, it can become tempting to embellish a change order estimate to improve the project finances
- Specific examples will be discussed based on the presenter's experiences working as both the owner and service provider

## Common Synonyms for Buyer and Seller



<i>Buyer: Organization purchasing a product or service</i>	<i>Seller: Organization providing a product or service</i>
Buyer	Seller
Principal	Supplier
First party	Second party
Owner	Contractor
Purchaser	Vendor

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## #1: Unrealistic Pricing

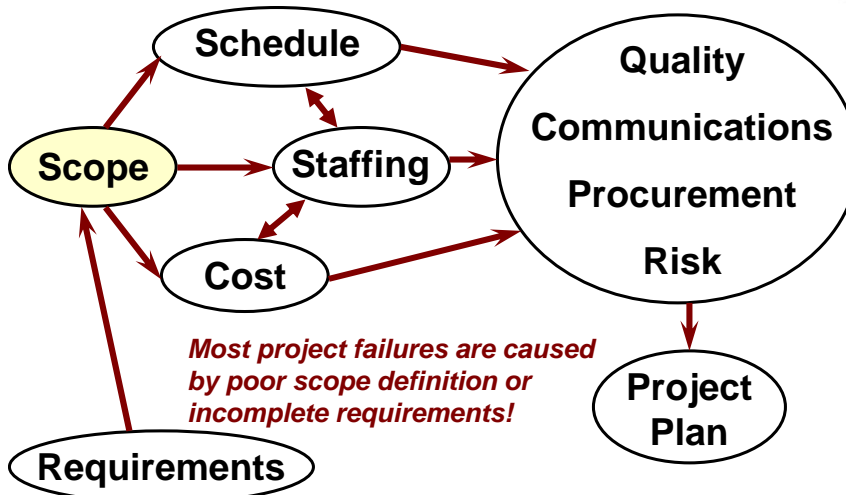
- Simple observation that most owner companies do a very poor job in preparing contract documents
  - Poorly defined scope
  - Client changing the scope



### Change Orders

- **How to Avoid:** prepare a complete scope of work; or if this can't be done use a cost reimbursable contract (preferably with a cap and incentive clauses)

## Importance of Scope



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## Supplier Dilemma



- Bid the scope of work listed or what you think (or know) the scope should be?
- Inform the client about the scope omissions?
- Add the potential scope items as extras to the base bid?

### My Philosophy

- If Request for Proposal (RFP) and there is a good working relationship with the client – inform the client on the possible scope omissions
- Otherwise, bid the scope of work listed (*but show potential scope items as extras*)



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## Supplier Bid Strategy



- Poorly defined scope and omissions allows the contractor to prepare an aggressive initial project estimate with a low (or no) profit margin in order to win the bid
- Possible since with inevitable change orders extra profits can usually be buried within the change order estimate and it's very difficult for the client to uncover
- **DANGER:** contractor prepares aggressive bid expecting change orders and none happen



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## Sole-Sourcing Work



- If there is **trust** between the buyer and seller, sole-sourcing can work
- Tempting for a contractor in a sole-source situation to 'pad' the estimate and profit for specific projects; which results in unrealistic pricing
- Best practice for buyer: get an independent check estimate to make sure the submitted bids are reasonable

## #2: Incorrect Schedules



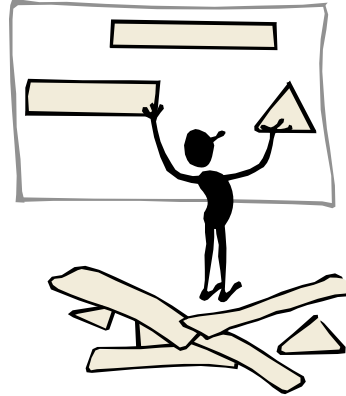
- Excellent scheduling software packages available to prepare project schedules
- Shortage of trained schedulers who can use scheduling software to prepare correct schedules – applies to many
  - Owner companies
  - Engineering companies
  - Construction companies
- **PROBLEM:** too many people preparing schedules do not understand basic scheduling concepts and utilize incorrect techniques in preparing and maintaining their schedules



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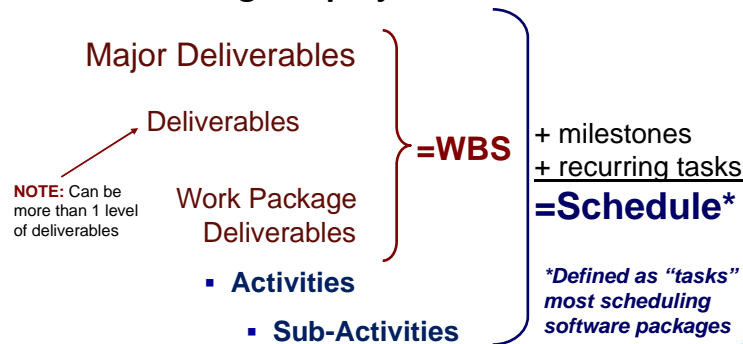
## Incorrect Schedules – Common Mistakes

- Common mistakes from reviews of owner schedules and contractor schedule submittals
  - Inappropriate level of task detail
  - Incorrect schedule logic
  - Missing task relationships
  - Misuse of constraints
  - Misuse of lags



## Incorrect Schedules – Inappropriate Detail

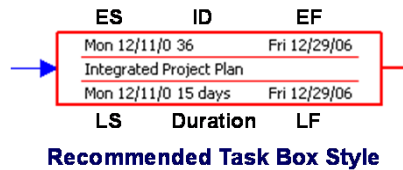
- **Work Breakdown Structure (WBS):** deliverable-oriented grouping of project elements which organizes & defines the total scope of the project
- **Essential to have a WBS listing project deliverables before creating the project schedule**



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## Incorrect Schedules – Incorrect Logic

- **Gantt View** – not useful for checking schedule logic (hard to follow relationships)
- **Network Diagram** – not useful since can't easily see/follow entire schedule on screen
- **BEST PRACTICE**
  - Plot the network diagram view on one large sheet
  - Tape on a wall and track the logic



## Incorrect Schedules – Missing Relationships

- All tasks should have at least one predecessor and one successor – otherwise logic breaks occur (called hangers)

Task Name	Duration	Predecessors	Successors
Database and Conversion Programs Build	40 days		62
Time Tracking Application Configuration	15 days	59,55,61	63
Unit Test Time Tracking Application	15 days	51,62	68
PeopleSoft Interface Module Build	30 days	53,59	65
Unit Test PeopleSoft Interface	20 days	64,54	
Weekly Reports Build	10 days	53,59	67
Unit Test Weekly Reports	10 days	66,51	68
Module Tests	<b>Hangers</b> 10 days	63,67,51	69
Systems Integration Test	5 days	68,51	76

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## Incorrect Schedules – Misuse of Constraints

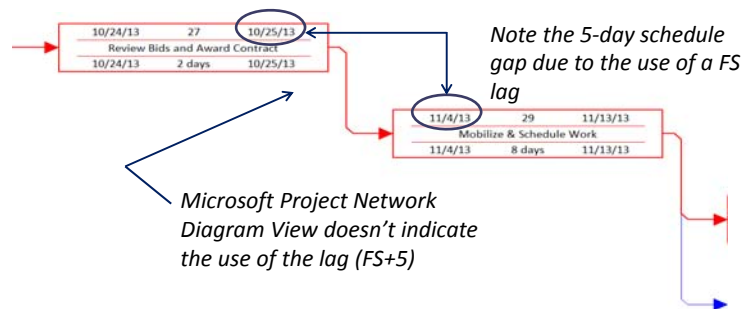
- Entering a Finish date for a task (for example, in the **Finish** Column) applies an FNET constraint
- Entering a Start date for a task (for example, in the **Start** Column) applies an SNET constraint

	Task Name	Constraint Type	Constraint Date
5	<b>Pilot Testing</b>	<b>As Late As Possible</b>	<b>NA</b>
6	<b>Journal History Pilot</b>	<b>As Late As Possible</b>	<b>NA</b>
7	Run Test Plan	Finish No Later Than	Tue 9/20/05
8	End User Testing	Start No Later Than	Tue 9/20/05
9	Code Changes	Finish No Later Than	Fri 10/21/05
10	Retest	Finish No Later Than	Mon 10/31/05
11	<b>Refining Pilot</b>	<b>As Late As Possible</b>	<b>NA</b>
12	Run Test Plan	Finish No Later Than	Tue 9/20/05
13	End User Testing	Start No Later Than	Tue 9/20/05
14	Code Changes	Finish No Later Than	Fri 10/21/05
15	Retest	Start No Later Than	Fri 10/21/05

These are all constraints!

## Incorrect Schedules – Misuse of Lags

- Lag delays the start of the successor task - there are valid reasons for using lags in a schedule
- However, clever contractors can insert lags as a method of building 'hidden contingency' into the schedule



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## How to Avoid Incorrect Schedules



- Have an experienced scheduling person check the schedule to verify it is correct and reasonable
- Add a penalty clause in the contract for late project completion
  - In fairness, should consider an incentive clause for early completion
  - May lead to an adversarial relationship

## #3: Team Substitutions



- When submitting a proposal, a vendor will list key project personnel and include brief resumes for these individuals
- Once contract awarded suddenly these 'A-list' people are no longer available due to other work commitments
- Known as the '**bait and switch**' tactic
- Happens on Requests for Proposals where the award is based on cost and additional selection criteria such as the relevant experience of key project personnel

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## How to Avoid Team Substitutions



- Issue the purchase order pending confirmation by the contractor of the key project personnel assignment to the contract
- Add a contract clause stating key project personnel cannot be removed from the project without the buyer approval

## #4: Contract Loop Holes



- Related to the first game discussed, which was unrealistic pricing
- Issue: many owner companies do a very poor job in preparing contract documents
  - Includes poorly defined scope
  - Client adding additional scope well after contract award
- Result: contractor can find contract loop holes to exploit to increase profits

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## Contract Loop Hole Example #1



Residential Community Pond with Planned Island



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## Contract Loop Hole Example #2



Airport Runway Replacement



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## #5: Cutting Corners



- Can be an unethical contractor trying to make more money or contractor at risk of losing money
- Examples:
  - Substituting 304 stainless steel (SS) piping for the specified 316 SS piping
  - Using 150 pound (#) piping and flanges when the drawings and specifications call for 300 # piping and flanges
  - Pump with a cheaper impeller material and seal
  - Contractor neglects to provide the spare parts called for in the contract documents
  - Contractor tries to substitute a cheaper heating and ventilation unit compared to the specifications in the contract
  - Contractor neglects to provide a full-time safety inspector



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## How to Avoid Cutting Corners



- Owner: be diligent in making sure the contractor is doing the project work per the contract requirements
  - Private companies: easier since a preferred list of good contractors can be developed based on past performance
  - Many government agencies: open bidding required and the low bidder has to be selected, which can result in dealing with less reputable contractors
- For both cases: private companies and public agencies should provide sufficient project oversight including inspections to ensure all contract provisions are being followed



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## #6: Inflated Change Orders



- Situations where a contractor has provided a low bid with minimal or no profit with the expectation of being able to obtain change orders on the project
- Even on a project where the contractor has submitted a reasonable price, there can be a temptation to 'pad' change orders to maximize profits or make up for bad estimates on other parts of the project
- Can also be a tactic if contractor expects a tough negotiation with the owner over the change order

## How to Avoid Inflated Change Orders



- Buyer should always get check estimates to ensure the change order pricing is reasonable
- Even better – develop a complete scope of work to avoid changes orders!





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## #7: Contract Noncompliance



- Contractor signs the contract with no intention of honoring all contract items in an attempt to reduce costs
- **How to Avoid:**
  - Hiring a construction management company and making them responsible for all contractors used on the project
  - For private companies, the other action is developing a short list of reputable contractors to use on projects

## #8: Misuse of Charge Numbers



- Service provider dilemma: deliver the project for the client and also with making a profit for his/her company
- Considerable pressure from management and the Project Manager to not overrun project budgets
  - Resource managers telling their group members to charge open project numbers with available hours, or
  - Pressuring team members to work extra hours to complete the work but not charge the project

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## How to Avoid Misuse of Charge Numbers



- If it's a lump sum project the buyer shouldn't care, but in many cases professional service contracts are cost reimbursable with possibly a not-to-exceed cap on costs
- Owner should insist for cost reimbursable contracts detailed timesheets showing the hours worked by person along with what work was accomplished

## #9: Inaccurate Earned Value



- Earned value will not work unless there is accurate information on project progress
- Contractors have motivation to overestimate progress in order to get paid sooner
- **How to Avoid:**
  - Contract documents should specify how progress will be measured for all project deliverables
  - Quantitative techniques should be used for measuring progress (*see next slide*)

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## Quantitative Progressing Techniques



- **Units completed:** Work Packages that involve repeated production of easily measured pieces of work
- **Incremental milestones:** Work Packages (WP) that can easily be divided into a series of tasks
- **Start-finish:** For low value and/or short duration WP's
- **Individual judgment:** Used for complex work not easily measured by other methods
- **Combination techniques:** Uses two or more of the other progressing techniques
- **Apportioned Relationship:** Has a direct intrinsic performance relationship to another discrete WP

## #10: Incorrect Invoices



- 'Buyer beware'!
- Private corporations and many government agencies have greatly reduced their internal staffing in non-proprietary job functions, including projects organization
- This means remaining people are very busy and it can be difficult to adequately check invoices for errors
- **How to Avoid:**
  - Develop a list of reputable contractors to use on projects
  - Make a person responsible for checking invoices on each contract

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## TOPIC 2 EFFECTIVE ALLIANCES

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### Customer-Supplier Alliances



- Customer-supplier alliances can result in dramatic improvement in cost, quality and schedule
- Only works if **Trust** exists between the owner and supplier
- Keys to making an alliance effective:
  - Focused objectives
  - Established project process and training of contractors in the process
  - Orientation to allow contractors to do their role professionally with minimal oversight
  - Effective measurement systems to monitor the health of the alliance

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## Managing an Alliance



- Recognize alliance partners are in business to make money
- Make the fee visible - a bottom line addition to the estimate
- Ensure best value is achieved by monitoring measures such as percentage A/E and CM costs
- Look for and implement value improving cost saving ideas

## Fee Computation



- Make fee for each project a variable based on
  - Project process experience
  - Level of risk and difficulty
  - Project value adding potential
  - Level of technology
  - Percent A/E and/or CM costs for the project
  - Project success (based on performance criteria)

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## Sample Fee Computation Worksheet

Project Title: Install Shredder Date: \_\_\_\_\_  
 CM Firm: \_\_\_\_\_

**Project Evaluation**

Project Factor	Score										Score	Wgt.	Wgt Scr.
	1	2	3	4	5	6	7	8	9	10			
Project Process Experience	Learning			Practicing				Mastering			4	0.15	0.60
Level of Difficulty	Low			Medium				High			3	0.15	0.45
Project Value-Add Potential	Low			Medium				High			9	0.35	3.15
Project Risk	Low			Medium				High			4	0.25	1.00
% Gen. Cond. Labor	5.0% and Above			4.9% - 4.5%				4.5% and Below			2	0.1	0.10
											1.00		5.30
													<b>Total</b>

GC Labor \$	Proj. Budget w/Exclusions	% GC Labor
\$37,200	\$380K	9.80%

Note: Gen'l Conditions % based on site projects, not really applicable to Chem projects

**Fee Computation**

Project Budget \$\$ : \_\_\_\_\_  
 Up to \$1.5M : \_\_\_\_\_

Total Weighted Score = **Fee Factor** (ie: 4.5 = 4.5% of Project Budget)

Fee Factor	Proj. Budget w/Exclusions	Budget Fee
5.30%	\$380,000	\$20,000

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## PRESENTATION CONCLUSION

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## Presentation Conclusion



- Many projects organizations have greatly reduced their internal staffing and have to rely on contract suppliers of engineering, construction and even project management to get new capital assets installed
- Owner organizations need to be aware of possible games contractors can use to maximize their profits on contracted work – and follow the best practices in this presentation to avoid these ‘games’
- Customer-supplier alliances can eliminate these games and improve cost, quality and schedule



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## GAMES CONTRACTORS PLAY QUESTIONS/COMMENTS?

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