The Contract Management Journey:
Seizing New Opportunities for Success

2014

WORLD CONGRESS

July 27–30, 2014
Washington, DC

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NATIONAL CONTRACT MANAGEMENT ASSOCIATION

Double Down Early With Risk Management to Bring Down Source Selection Risk

Breakout Session # A14

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Agenda

- Introduction
- Objectives
- Blackjack anyone?
- Understanding “The game”
- Playing the game

Objectives

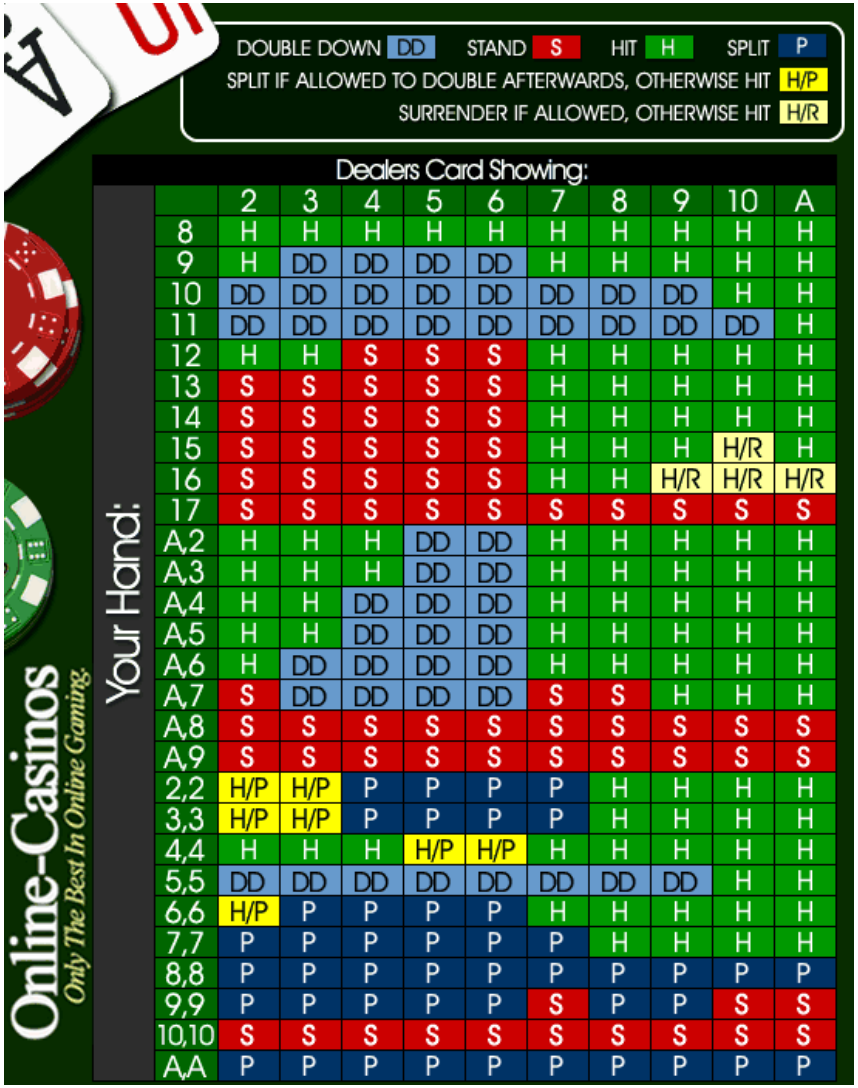
- Convey need for risk management
- Show importance of focusing on risk management during early stages of acquisition process to reduce downstream risk
- Illustrate how to double down on risk management

Blackjack anyone?

- Blackjack is statistically a relatively more winnable game relative to other casino games. Why?

Blackjack anyone?

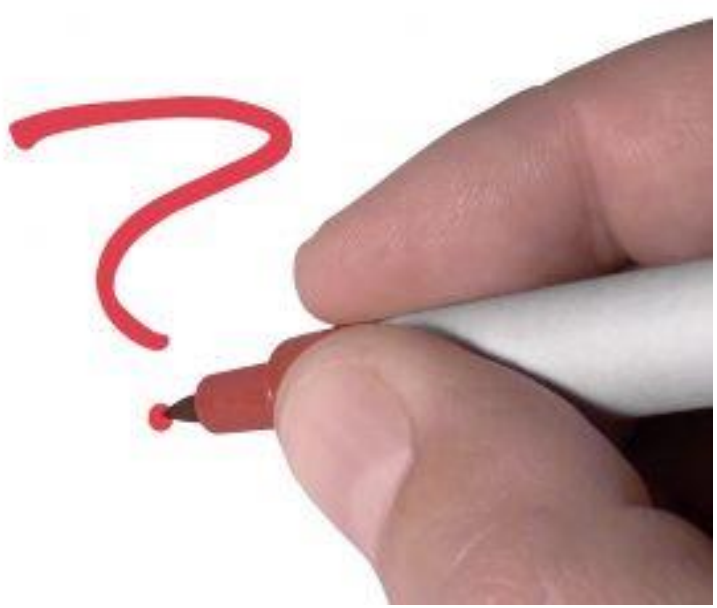
- You can use strategy to win at Blackjack
- Dealer shows a 6
- You have a pair of 5s
- What is your strategy?



Your Hand:	2	3	4	5	6	7	8	9	10	A
8	H	H	H	H	H	H	H	H	H	H
9	H	DD	DD	DD	DD	H	H	H	H	H
10	DD	DD	DD	DD	DD	DD	DD	DD	H	H
11	DD	DD	DD	DD	DD	DD	DD	DD	DD	H
12	H	H	S	S	S	H	H	H	H	H
13	S	S	S	S	S	H	H	H	H	H
14	S	S	S	S	S	H	H	H	H	H
15	S	S	S	S	S	H	H	H	H/R	H
16	S	S	S	S	S	H	H	H/R	H/R	H/R
17	S	S	S	S	S	S	S	S	S	S
A,2	H	H	H	DD	DD	H	H	H	H	H
A,3	H	H	H	DD	DD	H	H	H	H	H
A,4	H	H	DD	DD	DD	H	H	H	H	H
A,5	H	H	DD	DD	DD	H	H	H	H	H
A,6	H	DD	DD	DD	DD	H	H	H	H	H
A,7	S	DD	DD	DD	DD	S	S	H	H	H
A,8	S	S	S	S	S	S	S	S	S	S
A,9	S	S	S	S	S	S	S	S	S	S
2,2	H/P	H/P	P	P	P	P	H	H	H	H
3,3	H/P	H/P	P	P	P	P	H	H	H	H
4,4	H	H	H	H/P	H/P	H	H	H	H	H
5,5	DD	DD	DD	DD	DD	DD	DD	DD	H	H
6,6	H/P	P	P	P	P	H	H	H	H	H
7,7	P	P	P	P	P	P	H	H	H	H
8,8	P	P	P	P	P	P	P	P	P	P
9,9	P	P	P	P	P	S	P	P	S	S
10,10	S	S	S	S	S	S	S	S	S	S
A,A	P	P	P	P	P	P	P	P	P	P

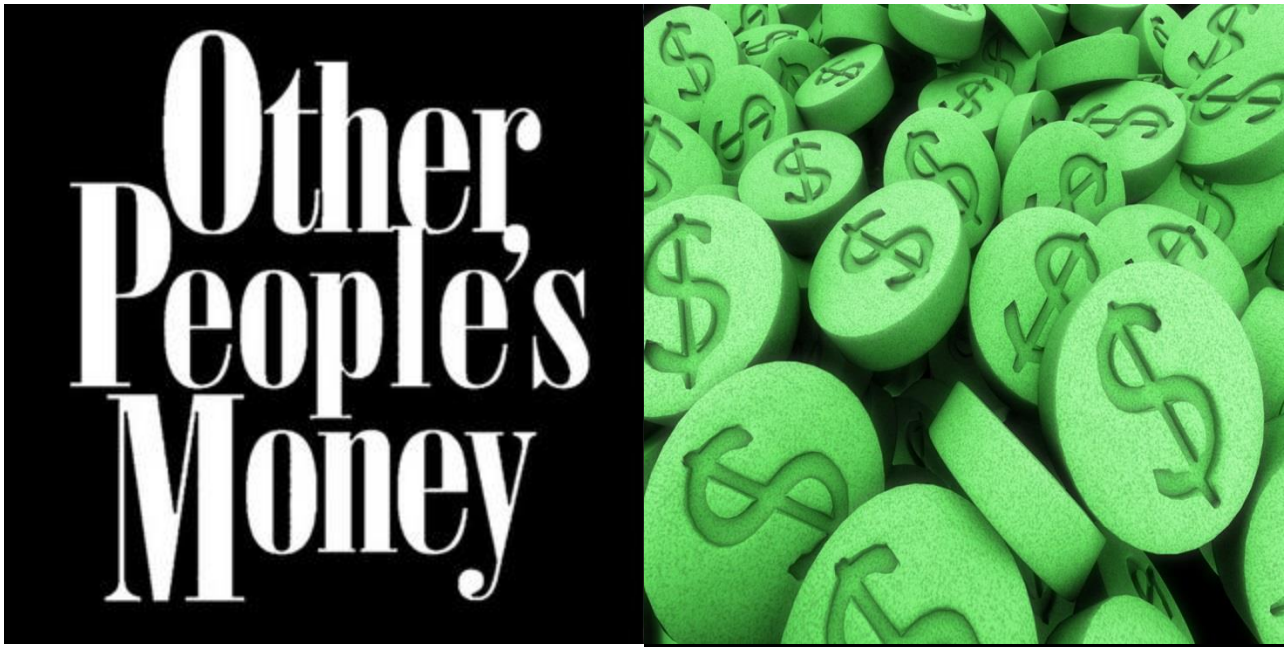
Blackjack anyone?

- Like blackjack, you can win in acquisition by employing a double down strategy too.
- Why is this very important?



Blackjack anyone?

- In acquisition, you are most likely betting with other people's money.

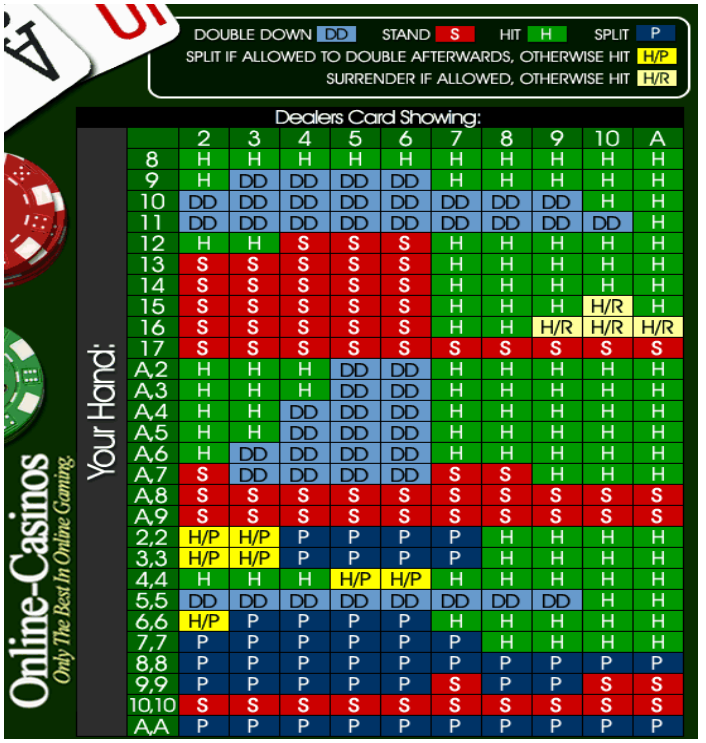


Blackjack anyone?

- And maybe in some cases even more than money could be involved….

Blackjack anyone?

- Therefore you need to be able to double down on an approach to win the game or not lose it.



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10	DD	DD	DD	DD	DD	DD	DD	DD	H	H
11	DD	DD	DD	DD	DD	DD	DD	DD	DD	H
12	H	H	S	S	S	H	H	H	H	H
13	S	S	S	S	S	H	H	H	H	H
14	S	S	S	S	S	H	H	H	H	H
15	S	S	S	S	S	H	H	H	H/R	H
16	S	S	S	S	S	H	H	H/R	H/R	H/R
17	S	S	S	S	S	S	S	S	S	S
A,2	H	H	H	DD	DD	H	H	H	H	H
A,3	H	H	H	DD	DD	H	H	H	H	H
A,4	H	H	DD	DD	DD	H	H	H	H	H
A,5	H	H	DD	DD	DD	H	H	H	H	H
A,6	H	DD	DD	DD	DD	H	H	H	H	H
A,7	S	DD	DD	DD	DD	S	S	H	H	H
A,8	S	S	S	S	S	S	S	S	S	S
A,9	S	S	S	S	S	S	S	S	S	S
2,2	H/P	H/P	P	P	P	P	H	H	H	H
3,3	H/P	H/P	P	P	P	P	H	H	H	H
4,4	H	H	H	H/P	H/P	H	H	H	H	H
5,5	DD	DD	DD	DD	DD	DD	DD	DD	H	H
6,6	H/P	P	P	P	P	H	H	H	H	H
7,7	P	P	P	P	P	P	H	H	H	H
8,8	P	P	P	P	P	P	P	P	P	P
9,9	P	P	P	P	P	S	P	P	S	S
10,10	S	S	S	S	S	S	S	S	S	S
A,A	P	P	P	P	P	P	P	P	P	P

Risk Management is the double-down strategy

- Particularly early use of it during the acquisition process
- It is worth it. Remember

the old adage…

- Crisis management vs.

Risk Management

- IPT should be well-versed in

risk management

  - Contracting, program, budget, legal, IT, etc

Why Risk Management?

Some aspects of program cost, schedule and performance are not known with certainty early on

This uncertainty can be managed proactively to help ensure favorable outcomes

Managing risk keeps options open and is less expensive than crisis management

A single averted problem on a project can pay for many, if not all, risk management activities

With the tight budgets, timelines and technological complexity of today's acquisition environment, risk is more prevalent than ever

What is this risk we are managing?

"Risk" is commonly used in two different but strongly related contexts:

A risk is a potential event or circumstance that would have a negative impact on your program. It is not a problem today, but it has the potential to become a problem.

Risk is a measure of future uncertainties in achieving program goals and objectives within defined cost, schedule, and performance constraints.

Definition of Risk

	Timing	Probability of Occurrence	Management Technique
Risk (think "potential")	Future	High Medium Low	Risk
Issue/ Problem (think "actual")	Today or Imminent	Certain	Crisis?

Risks are different than issues/problems.

Definition of Risk Management

Risk Management is:

- The art and science of planning, assessing, and handling future events (risk) to ensure favorable outcomes.
- The process that encompasses risk identification, assessment, handling/mitigation, monitoring and controlling.

As previously mentioned, the alternative is crisis management, a resource-intensive and highly constrained process.

The Risk Management Process

Risk Management Planning

Risk Identification

Risk Assessment (or Analysis)

Risk Handling/Mitigation Planning

Monitor and Control (implementing the plan)

Risk Management Planning

- Initiated up front during Program Initiation and Planning Phase
- Included in the Program Management Plan or a stand-alone plan. It includes:
  - Risk Management Approach
  - Risk Management Processes and Procedures
    - Risk Identification
    - Risk Assessment
    - Risk Response Planning
    - Risk Monitoring and Tracking
  - Risk Reporting

Risk Identification

Asking, “What could go wrong….and what will be the result if it does?”

Risk Identification - Cost

Independent Government Cost Estimate(s) (IGCE) is accurate

Life Cycle Cost Estimate (LCCE) is reasonable

Commodity price stability considered

Overly optimistic cost projections are the main reason for cost overruns. Use a realistic cost estimator.

Risk Identification - Schedule

- Activities on the critical path are secure
- Work Breakdown Structure (WBS) reflects scope
- Enough procurement process lead time is included
- Sufficient approval process time is included
- Schedule fits Technology Readiness Level (TRL)
- Time for long lead items is factored into the schedule
- Software development schedule is reasonable
- Funding will be available when needed
- Sufficient time for legal and other applicable stakeholders review before key milestones (e.g., publicizing, evaluating, awarding, debriefing)

Risk Identification –Performance

Requirements well-defined and stable

Areas involving significant integration

Immature technology will ultimately meet requirements

Test and Evaluation sufficient in terms of timing and scope

What are some other types of risk categories?

Risk Identification - Methods

Brain Storming
Delphi Technique
Historical Comparison
Decomposition (e.g. WBS)
Critical Path Method (CPM)
Trend analysis (e.g., EVM)
Cost estimating (e.g., LCCE)
Technology Readiness Level (TRL)
Diagramming (e.g. Fishbone technique)

Risk Identification – Risk Statement

Clear, understandable description

Specific to the program

Describes the risk and potential consequence

Posted in the Risk Register

Example statement - "If our production contract isn't awarded by March, then the contractor will use "our" parts on another contract, resulting in a delay of six months."

Risk statements are typically expressed in terms of "If…..then…."

Risk Assessment

Isolate the root cause

Determine level of likelihood of occurrence

Determine level of impact/consequence if it does

Calculate a risk level (prioritize)

Risk Assessment- Isolate the Root Cause

Root cause - the source of the risk, which must be addressed in order to lessen probability/consequence

Ask "Why might this risk materialize?"

Keep asking "why" until you can go no further

Many of the risk identification methods lend themselves to help you identify root causes.

From Risk Statement example:
"Why might the contract not be awarded by March?"

Risk Assessment

Each risk is assessed by two measures:

- Probability (or Likelihood) of occurrence
- Impact (or Consequence) of occurrence

Risk Rating = Probability of occurrence x Consequence of occurrence

Use an IPT to identify probability and consequence.

Risk Assessment – Analysis Methods

- Qualitative methods
  - Process analysis (e.g., PBS)
  - Product analysis (e.g., WBS)
  - Interview of experts
  - Technology Readiness Level analysis
- Quantitative methods
  - Quantified schedule risk (Monte Carlo simulations*)
  - Cost risk (Monte Carlo simulations*)
  - Risk+ (MS Project add-on)

*Monte Carlo uses multiple iterations of a roll-up of single activity costs or durations that establish a probability distribution, and range, of possible outcomes for top-level program cost or schedule. The process is more effective than single point estimates, which are a major cause of underestimating.

Risk Assessment – Likelihood of Occurrence

Level	Likelihood	Probability of Occurrence
1	Very Unlikely	~ 10%
2	Unlikely	~ 30%
3	Even	~ 50%
4	Likely	~ 70%
5	Very Likely	~ 90%

Risk Assessment – Consequence Criteria

Level	Description of Consequence		
	Technical Performance	Schedule	Cost
1	**Minimal -** Minimal or no impact	Minimal or no impact	Minimal or no impact
2	**Marginal -** Minor reduction in technical performance or supportability; can be tolerated with minimal impact on program objectives.	Able to meet key dates: Slip < __ months	Budget increase of < 1%.
3	**Significant -** Significant reduction in technical performance or supportability with limited impact on program objectives.	Minor schedule slip. Able to meet key milestones: Slip < __ months	Budget increase of < 5%..
4	**Critical -** Major reduction in technical performance or shortfall in supportability; could jeopardize program objectives.	Critical path affected. Slip < __ months	Budget increase of < 10%
5	**Unacceptable -** Severe reduction in technical performance or shortfall in supportability; will jeopardize program objectives..	Unable to meet key milestones: Slip > __ months	Exceeds APB threshold > 10%
IPT can tailor criteria.			

Risk Assessment – Sample Risk Rating Matrix

Risk Rating - A measure of the degree to which an identified risk threatens program success. The rating indicates to the PM and Decision Makers where resources might best be applied.

Risk Assessment Matrix with Likelihood and Consequence Scales

Consequence of Occurrence						
5	Unacceptable	5	10	15	20	25
4	Critical	4	8	12	16	20
3	Significant	3	6	9	12	15
2	Marginal	2	4	6	8	10
1	Minimal	1	2	3	4	5
		Very Unlikely	Unlikely	Even	Likely	Very Likely
		1	2	3	4	5

Likelihood of Occurrence

High –
Baseline breach likely: Priority management attention required

Moderate –
B/L breach possible: Management attention required

Low –
B/L breach unlikely: Normal oversight needed to ensure risk remains low

Risk Handling/ Mitigation

Determine a strategy to address each risk

- Avoid
- Accept
- Transfer
- Control

Formulate a contingency plan if strategy fails

Risk Handling – Risk Avoidance

Avoidance

- Most common during early acquisition planning stage
- Choose an approach that avoids the risk

Example

- You determine that there is high risk that a new technology will not mature in time for your program, so you choose to base your Acquisition Strategy on a less capable, but currently available, technology that will still meet you performance reqts.

The Avoidance strategy is usually employed during the process of establishing the program baseline.

Risk Handling — Risk Acceptance

Acceptance

- Do nothing - accept the potential consequences
- Normally used when the risk is low, or when other handling strategies are impractical (e.g. cost outweighs the risk)

Example

- The price of a commodity used in your product may go up, causing you to be able to afford fewer than you planned on.

Risk Handling – Risk Transfer

Transfer

- Shift some portion of the risk elsewhere
- Instead of a Government responsibility, make a practice or process an industry responsibility

Examples:

- A T&M contract involves more risk to government, while an FFP contract involves more risk to vendor
- Commercial insurance (warranty)

Does transferring a risk to another entity really improve the chances of program success?

Risk Handling – Risk Control

Control

- Most frequently used strategy for reducing risk level
- Take actions to:
  - Reduce the likelihood of occurrence, and/or
  - Reduce the impact of the potential occurrence

Example:

- You recently watched your an operational not pass, for human factors reasons. You recognize now that your project may lead to the same demise. You decide to add in an Early User Assessment in order to reduce the *likelihood* of a similar nasty surprise during operational testing.

Risk Handling – Reducing the Risk

Risk Assessment Matrix with Probability and Impact Scales

5	Unacceptable	5	10	15	20	25
4	Critical	4	8	12	16	20
3	Significant	3	6	9	12	15
2	Marginal	2	4	6	8	10
1	Minimal	1	2	3	4	5
		Very Unlikely	Unlikely	Even	Likely	Very Likely
		1	2	3	4	5

Consequence of Occurrence

Likelihood of Occurrence

Risk Handling – Contingency Planning

Contingency Plan- plan of action to be executed if the risk handling strategy fails

Not a risk handling strategy; it is an issue handling strategy

- Prepared ahead of time; keeps the program out of crisis operating mode
- Developed for highest risks first, then others as time permits

Monitor and Control

The continuous process of tracking the progress of the program's Risk Management Process and risk handling activities.

Includes higher level management's monitoring activities in the form of information requirements (Risk Reporting)

Monitor and Control

Assign a Risk Manager

Maintain and update a Risk Register

- Have previously identified risk levels changed?
- Have previously identified risks gone away?
- Have any new risks appeared?
- Have any risks materialized into actual problems?

Risk should be a regular IPT agenda item

Report significant changes to key stakeholders (e.g., management, IPT members)

Risk Management - a way of life and common language for the IPT

Monitor and Control- Risk Register

Date Identified	Area of Risk	Risk Owner	Description	Probability of Occurrence/ Impact	Strategy for Mitigation/ Contingency Plan	Current Status

Monitor and Control - Risk Register

Documents risks, your assessments, your responses

Primary risk management tool

Assign an individual responsibility to maintain

Review and update regularly (e.g., at IPT meetings)

Key data fields: Risk description, likelihood, impact, risk level, response, residual risk level, status of response implementation, POC

Risk retirement and archiving

There are Risk Management software tools available designed specifically to facilitate the risk management process and reporting.

Final thoughts

Risk Management is also about:

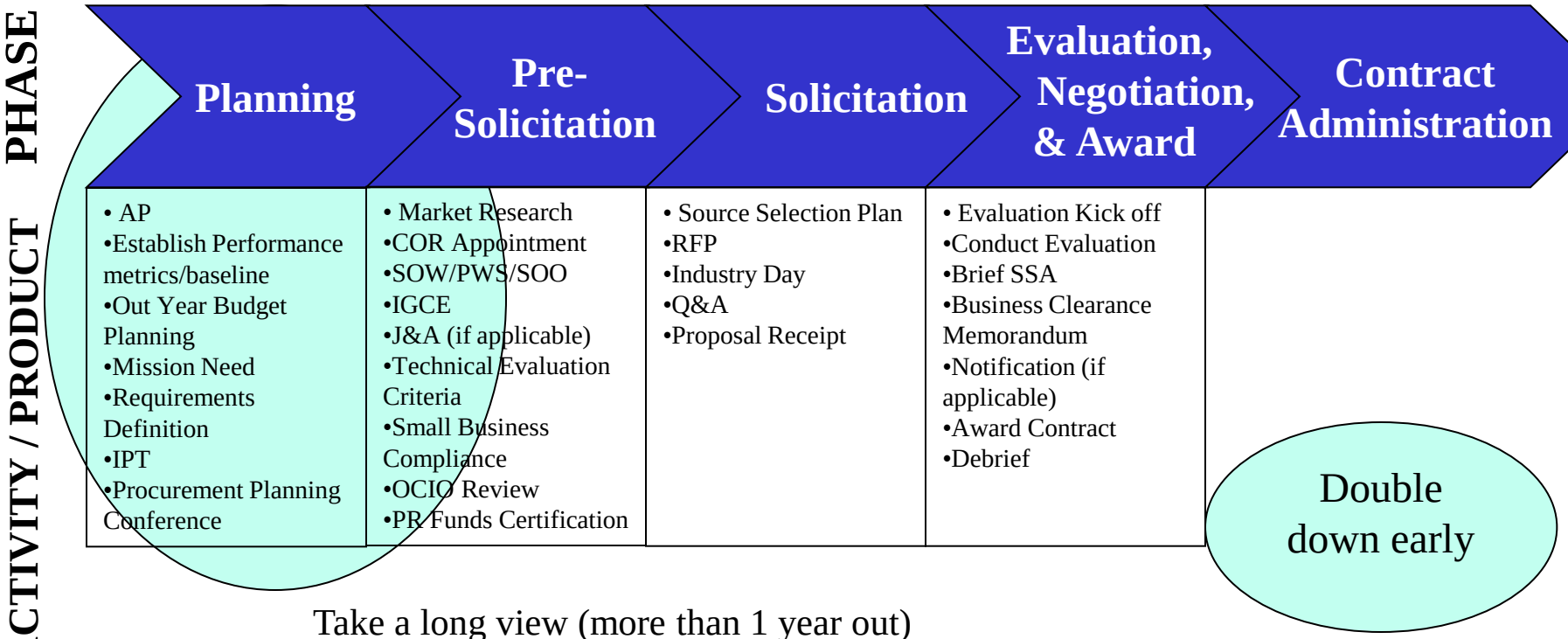
- Managing expectations and preventing “surprises”
- Having answers before the questions are asked

The more complex the acquisition, the more risk management is needed.

- Full time risk manager
- Stand alone risk management plan
- Fully developed contingency plans

“

Key Takeaways – All in on early Risk Management



Take a long view (more than 1 year out)
Engage in PPCs
Define requirements sufficiently (use IPT)
Factor lead time for stakeholder inputs
Crosswalk strategy, requirements, tech evaluation criteria, source selection plan, Section L and M of Solicitation, source selection evaluation and documentation.

Capital Planning Investment Control Areas of Risk

	Risk Facets			
CORE	Schedule	Initial Cost	Lifecycle Cost	Technical Obsolescence
	Feasibility	System Reliability	Dependency and Interoperability	Surety (asset protection)
	Monopolistic	Management	Project Failure	
IT	Organization & Change Mgmt	Business	Data/Info	Technology
	Strategic	Security	Privacy	Project Resources