

Waste Management 2008 Federal Government Contract Capture Workshop Strategic Decision Making- SWOT Analysis and Risk Analysis

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SWOT Analysis (*where we are and where we're going*)

- What is it?
- SWOT Process
 - Planning
 - Project Capture
- Facilitating a SWOT

Why is SWOT (strength, weakness, opportunity, and threat) helpful ?

**Tool generated by Harvard Business School Publishing's
Some personal experiences**

- **Application to project bid / no bid**
 - **WIPP Pursuit**
 - **AFCEE WERC Pursuit**
- **Application to Business Sector for**
 - **Nuclear Clean-up Contractor in a Strategic Growth Group**
 - **Mining / Oil & Gas Sector**
 - **Corporate Strategic Plan direction for a mid sized E&I firm**
- **Application for Church Strategic Planning**
 - **Denver Seminary, ODM**

**It's a tool to allow you to process and access
what you know & have
what you need to find out and get**

Objectives

- **Review how a SWOT could be applied**
- **Review a hypothetical business case / analysis with a SWOT type review**
- **Establish an Exercise to apply SWOT**

What is it?- articulating current and future state / assessment of mission / sub-mission focus

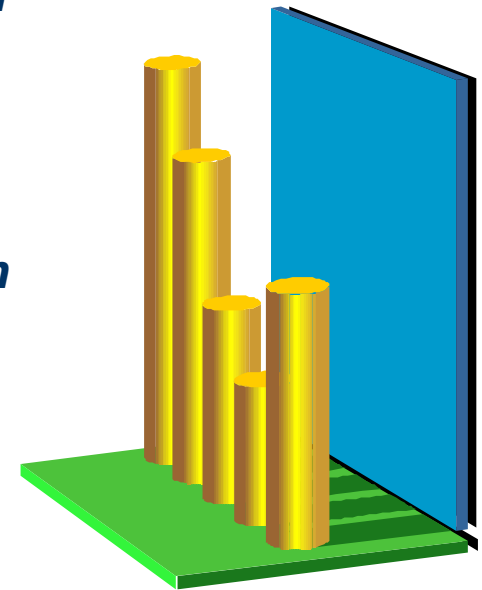
➤ **SWOT Analysis**

➤ **Strengths-** *what you are excelling in*

➤ **Weakness-** *what you need improvement in*

➤ **Opportunities-** *what you will gain through execution of this area of focus*

➤ **Threats-** *Actions that could severely alter your mission outcomes*



SWOT- Where does it fit

Typical Plan Summary Outline

1. Introduction of Plan and Background of the organization
2. Mission, Values (Philosophy), Vision
3. Analysis and Plan
 - Demographics
 - Needs analysis
 - Organizational specifics
 - Competitor analysis and analysis of market share
 - **Strength, Weakness, Opportunity, Threats Analysis (SWOT)**
 - Goals and objectives for plan metrics (short & long range)
 - Human Resource plan to achieve goals and objectives
 - Risk Analysis / Mitigation Discussion
4. Organizational Architecture to Execute Plan
5. Implementation / Operational Execution Process Requirements
6. Financial Plan / Funding Requirements
7. Measurement and Accountability Metrics
8. Configuration Control / Course Correction Process

**It's a tool to allow you to process and access
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Strategic Planning**

SWOT- Where does it fit

- Proposal Strategy weighting response to evaluation criteria
- Example:
 - Evaluation Criteria 1.0
 - Management Approach

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Response to Request for Proposal**

WIPP Bid Assessment: Company X, Co Y, Co Z LLC

Management Approach & Corporate Capability Weighting 35%

<p style="text-align: center;">S T R E N G T h</p>	<ul style="list-style-type: none"> •Strong Nuclear Conduct of Operations •Colorado demonstrated regulator interface •Excellent DNFSB Ratings •M&I excellent at Existing Project •Waste Preparation and TRU Waste Acceptance Criteria Certification •Reasonable Start-up Experience •Good Training Program •Project Manager Candidates •Project experts •Surface Facility Strong •Corporate Capability as M&I at Existing Project •Private Sector M&O for Waste Water & Infrastructure Projects •Waste Monitoring & Characterization 	<ul style="list-style-type: none"> •Additional Revenue Base •Increased support of Existing Site Shipments •Puts XYZ on map for Waste Isolation •Increased DOE Site wide exposure •Enhance Existing Site TRU Waste Shipments •Credibility to be a major player at YUCCA •Provide XYZ some added M&O DOE Work •Added staff for future expansion of business •Expansion of Corporate Experience base 	<p style="text-align: center;">O P P o r t U n i t y</p>
<p style="text-align: center;">W e A K N e s s</p>	<ul style="list-style-type: none"> •M&O Experience not the model at existing site •Tunneling limited (dated experience) •Waste Placement, Mine Backfilling •No Mine Operations <ul style="list-style-type: none"> •Sub-surface Mine Operations •Shaft sinking & Operations •Grouting •Tunnel Boring •Mine Planning •Shaft and Sub-surface ventilation •Mine Safety •National Logistics tracking and TRU waste Handling •Limited Sorting and Waste Packaging Experience •Transportation, Nuclear Waste Packaging, Nuclear waste shipments. 	<ul style="list-style-type: none"> •Added focus on Liability, Public light increased •No excuse for shipments out of existing site •COI potential due to existing site preference treatment •Limited personnel due to existing site •Sacrifice resources from existing site •Tarnish corporate name •Added Government work; increase government oversight and audit •Incumbent alienation at existing site •Incumbent political ties at State 	<p style="text-align: center;">T H R E A T s</p>

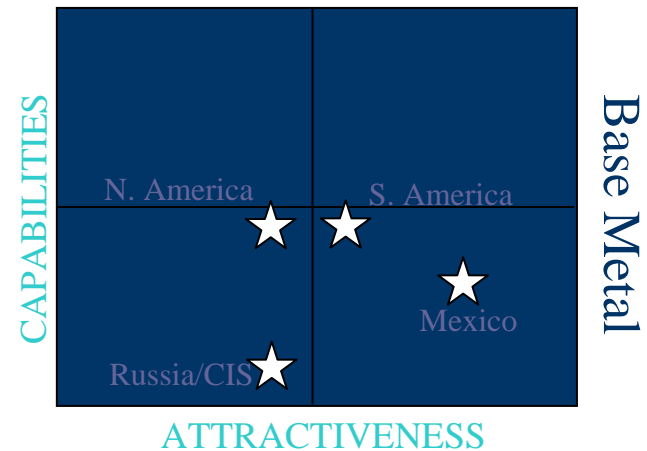
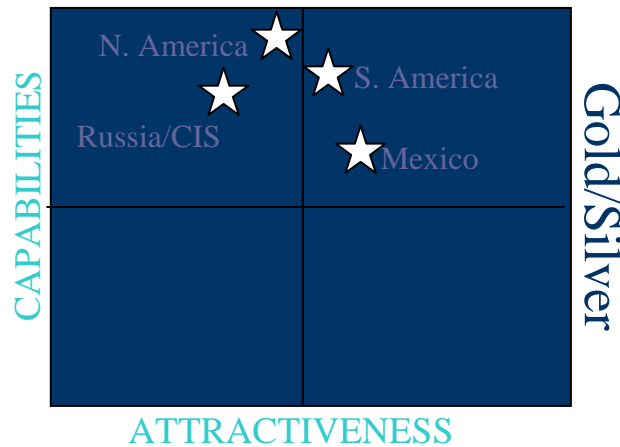
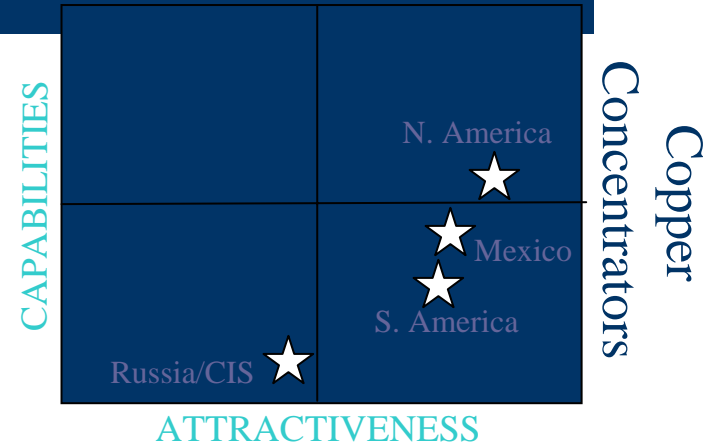
SWOT- Where does it fit

- Business Sector Assessment

It's a tool to allow you to process and access
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Business Sector Assessment and Capability

Market / Capability - ex: Minerals



SWOT Analysis

Where You Are

Product Line Niche Centers of Excellence

Weaknesses Strengths



Threats Opportunities

SWOT Analysis

Where Your Strategy Needs to Take You

Product Line Niche Centers of Excellence



SWOT Analysis

Example for XYZ Business (current)

Environmental Services to Federal / International Marketplace

Strengths

- Small Business SBA qualified
- Current EPA Work- \$30MM / year
- Current COE Workload- \$ 30MM / year
- Staff of 400 personnel
- Regional Focus mainly in Eastern US & Southeast
- Good reputation with EPA and COE
- Design Expertise good in planning, assessment, regulatory, water treatment engineering, remediation, compliance

Weaknesses

- Design Expertise limited in waste water, municipality, large dam projects, geotechnical engineering
- limited yellow iron construction
- Limited Project Management Staff with construction turn-key background
- Little DOE, DHS Experience
- Regional Placement limited (Little international expertise, Not in West or SE)
- Bonding Limitation at \$ 50MM aggregate, \$ 20MM per project
- Limited engineering resources, higher pay structure in expansion

- Multiple Award turn-key performance based Contracting at \$ 1B work load LOE contracts
- Expansion in AFCEE, COE, DHS
- Large DOE M&O to small business
- Expansion in Emergency Response for Natural Disasters
- Support of Engineering / Construction in war zone theaters of conflict
- Large Fixed Price Contracts with >20% margin

- Bonding Limitation at \$ 50MM aggregate, \$ 20MM per project
- Key staff movement
- Single project fixed price contract loss could stretch financial return of company

Opportunities

Threats

SWOT Analysis

Example for XYZ Business

(future vision- where the strategy brings the organization)

Environmental Services to Federal / International Marketplace

Strengths

- Small Business SBA qualified
- EPA Work- \$50MM / year
- COE Workload- \$ 50MM / year
- DOE, DHS- \$ 20MM / year
- Staff of 450 personnel
- Regional Focus Central, Midwest, SE
- Expanded International in Europe
- Good reputation with EPA, DOE, and COE
- Design Expertise good in planning, assessment, regulatory, water treatment engineering, remediation, waste water, dams and geotechnic
- Expanded Yellow Iron Fleet
- Project Management staff / Construction Management Staff for turn key and large design
- Insurance for MARC type contracts

Weaknesses

- Regional Placement limited (West)
- Bonding Limitation at \$ 100MM aggregate, \$ 40MM per project
- Limited engineering resources, higher pay structure in expansion

- Multiple Award turn-key performance based Contracting at \$ 1B work load LOE contracts
- Expansion in AFCEE, COE, DHS
- Large DOE M&O to small business
- Expansion in Emergency Response for Natural Disasters
- Support of Engineering / Construction in war zone theaters of conflict
- Large Fixed Price Contracts with >20% margin

Opportunities

- Bonding Limitation at \$ 100MM aggregate, \$ 40MM per project
- Key staff movement
- Multiple project fixed price contract loss could stretch financial return of company

Threats

SWOT Analysis

Example for XYZ Business (strategic activities needed to bring future vision- where the strategy brings the organization)

Environmental Services to Federal / International Marketplace

Vision Strengths	Action
<ul style="list-style-type: none"> •Small Business SBA qualified •EPA Work- \$50MM / year •COE Workload- \$ 50MM / year •DOE, DHS- \$ 20MM / year •Staff of 450 personnel •Regional Focus Central, Midwest, SE •Expanded International in Europe •Good reputation with EPA, DOE, and COE •Design Expertise good in planning, assessment, regulatory, water treatment engineering, remediation, waste water, dams and geotechnic •Expanded Yellow Iron Fleet •Project Management staff / Construction Management Staff for turn key and large design •Insurance for MARC type contracts 	<ul style="list-style-type: none"> •Establish a strong sub-contract management to increase business revenue and still stay below SBA size standards, hire a Director of Procurement and Contracts Management •Establish key business line managers with P&L for EPA, COE; establishing this as a service sector with PM's and marketing and sales •Strategic PM Hires for DHS, DOE Sectors •Expand SE and Europe •Establish a QA oversight for Federal Sector that expands current QA Policy & Procedures •Strategic Acquisition for a civil / yellow iron construction firm in Midwest and SE •Pre negotiate with AIG cost cap and efficacy insurance rates and protocols to bid MARC type and cost cap type projects •Establish a stretch target incentive program for key managers
<p style="text-align: center;">Remaining Weakness / Threats</p> <p>Regional Placement limited (West)</p> <p>Bonding Limitation at \$ 100MM aggregate, \$ 40MM per project</p> <p>Limited engineering resources, higher pay structure in expansion</p>	<ul style="list-style-type: none"> •Expand the employee ownership to vest staff and make them more part of the family

Competitor Analysis (gas processing '96)

Competitor	Size		Process Expertise		Construction			Financial	
	Small	Large	Strong	Average	Technologies	Contract	Direct	Strong	Minimal
<u>Gas Processing</u>									
Pritchard (Kan)		X	X		X	X		X	
Randall (TX)		X	X		X		X	X	
OPD (TX)	X			X		X			X
Schedule A (TX)	X			X		X			X
TII Russell (OK)	X			X		X			X
ProQuip (OK)	X			X			X		X
Rapley (CO)	X			X		X			X
BATEMAN	X		X			X			X

A well-conducted competitor analysis helps companies make right strategic decisions

Exercise in SWOT Analysis

SWOT

1. Select the top 4 of those market sectors
2. Perform a SWOT of the top two market sectors analyzing today and where you want to be 2 years from now. Document the listing of strengths weakness opportunity and threats for each

Exercise Deliverables

List for each of the top two market sectors which goals and metrics you would establish to execute and measure as activities and indicators of the project / sub-mission tracking over the course of a recommended period of performance.

See last slides

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Risk Management

Application to project assessment

Application to Go-No Go

Application to Management Review

Risk Management Process

What is it?

- Process to minimize impact to stakeholders through the systematic assessment, planning, management of change and delivery of commitments
- Processing uncertainties that require a level of planning, mitigation and contingency in the plan and execution of work
- Assessment includes a combination (pre and post mitigation):
 - Likelihood of event occurring
 - Magnitude of the consequence if it did occur

Risk Management Process

Business Risk Issues

- Exposure to events that would have an adverse impact on the company's objectives and anticipated outcomes
- Typical Business Risk Portfolio Issues
 - Financial Performance Metrics (Income, Sales, Profitability, Cash Flow, ROI, ROS, etc.)
 - Strategic Growth Initiatives
 - Corporate Policy and Governance
 - ESH
 - Natural Environment
 - Reputation
 - Technical capability
 - Security
 - Political Environment, Staff / local community welfare
 - Property
 - Legal
 - Investments

Risk Management Process

Why do we do it

- Good stewardship
- Structured approach to ensure risk identification, mitigation, and lessons learned for the entire organization to learn and improve in operations
 - Establish risk issues and scenarios
 - Establish Mitigation strategy
 - Anticipate required resources to achieve mission that may be impacted by change

Risk Management Process

Why do we do it (Cont'd)

- Consequences of not doing it
 - Inefficiency lost in sales and execution
 - Costs of upsets / lost opportunity (reduced income, legal issues, liability, management time consumed with recovery)
 - Loss of staff morale
 - Increase in insurance premiums
 - Adverse effect in the marketplace
 - Increased finance costs

Risk Analysis- typical criteria for a systematic approach to risk reduction

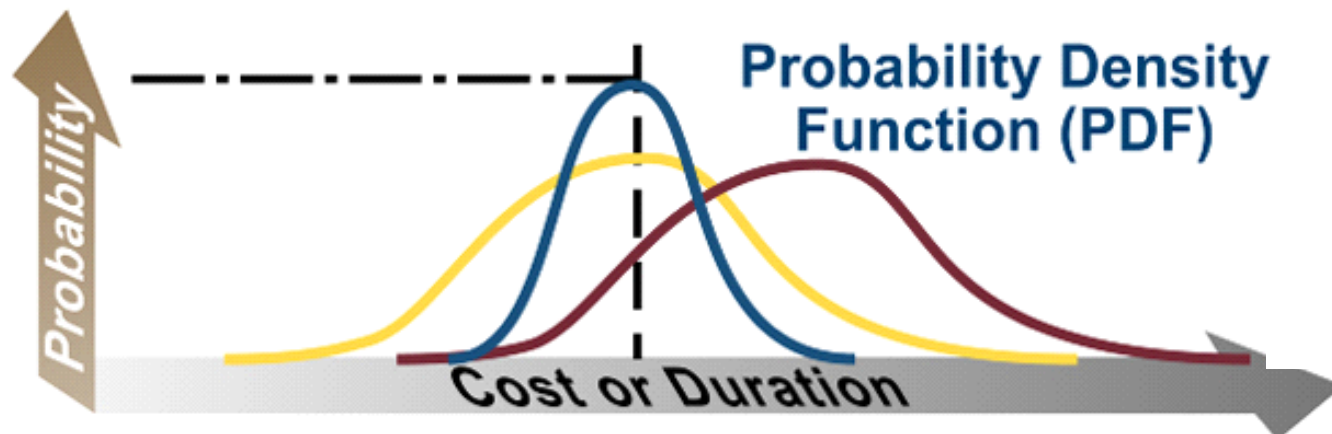
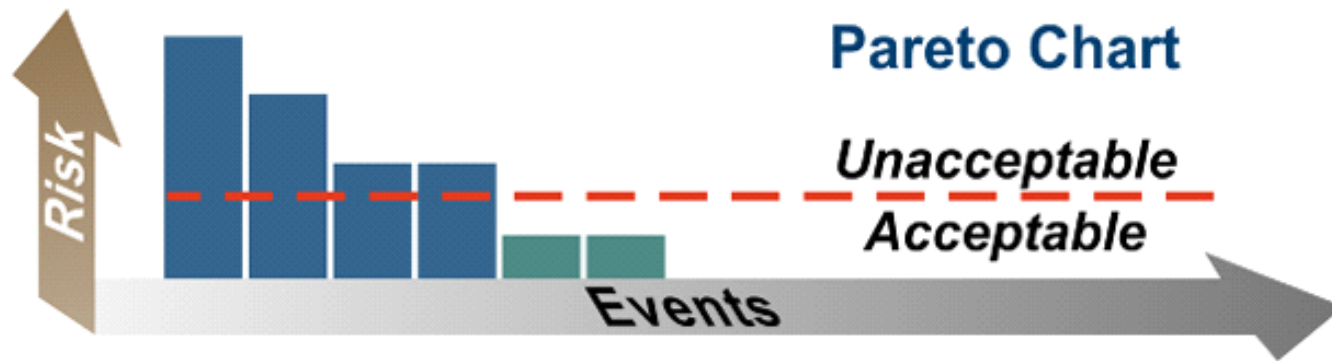
- Owner Commitments and Issues
- Project Performance
- Project Conduct of Operations Standards
- Project Safety
- Regulatory Requirements
- Stakeholder needs and assurances
- Financial
- Project Issues
- Owner / Licensee Financial Issues
- Contractor Financial Issues
- Insurer / Bonding Issues
- Project Contract Methodology
- End States that take the various risk management issues into consideration
- Workforce Jurisdiction, Workforce Transition
- Legacy Management and Economic re-development

Risk Analysis- The traditional risk management process includes a number of systematic process steps:

- Defining the context and risk management criteria
- Identification of the various risk scenarios
- Assessment of the significance of the individual risks
- Identification and implementation of risk mitigation steps
- Monitoring, reviewing and taking necessary corrective action for deviations.

Risk Analysis- Risk Management Process includes detailed probabilistic assessment

Risk and Uncertainty Analysis Tools



Risk Analysis Process for a Project

Application / Mitigation

- Risk scenarios- events / issues
- Probability of Risk Event Occurrence
 - High- < one chance in 100
 - Medium- > one chance in 100 ; < one chance in 1,000
 - Low- > one chance in 1,000
- Risk Impact (financial, social, etc.)
 - High- Fatal failure to mission / project and stakeholders
 - Medium- Significant delays, program interruption / setback, and cost
 - Low- Controllable delays, program interruption / setback and cost
- Mitigation- work around, forecast action

Risk Category Legend – Project Example

Symbol	Risk Category
F	Financial
R	Regulatory
P/T	Performance / Technology
S	Schedule
SA	Safety
Stake	Stakeholder

**Figure 9-4 _____ Decommissioning Risk Analysis
Higher Probability / Higher Impact Events Summary**

Major Risk Uncertainty	Risk Event Description	Category	Post Mit Probability	Post Mit Impact	Post Mitigation Consequence Cost Provision
Schedule delay risk; indirect overage	Schedule delay	S,F	Low	High	\$X,XXX
Site Security	Assumed to be owner Responsibility	R, F	Low	High	\$X,XXX
Final Site Survey	May be more extensive based on underground contamination (Turbine Building)	S,F	Low	High	\$X,XXX
Site characterization	Extent of radioactive contamination is unknown and prevent accurate cost estimate for radioactive waste volumes	F	Low	High	\$X,XXX
Site restoration (under-ground facility clean-up)	Extent of radioactive contamination is unknown and prevent accurate cost estimate for radioactive waste volumes	F,S,R	Low	High	\$X,XXX
Removal existing non radioactive infrastructure	Removal of parking lots, telephone poles roads, utilities is not part of the estimate.	F,S,R	Low	High	\$X,XXX

Figure 9-4 _____ Decommissioning Risk Analysis
Higher Probability / Higher Impact Events Summary (Cont'd)

Secondary Radwaste	Secondary waste was not accounted for in D&D Plan and OWNER cost estimates	F	High	High	\$ XXX
Scrap Recovery & Recycle	No allowance in the CAF assessment was assumed for the scrap recovery	F	Low	High	\$0
Waste Package Ship and Burial	Current Pricing for shipping containers and burial costs may increase faster than the anticipated inflation rate, and some disposal sites may not be available.	F	Med	High	TBD
Contaminated Soil	The demolition of the CB, TB, RB, and the discharge tunnel and the excavation of soil below these building create large waste volumes not anticipated in ENGINEER and OWNER cost estimates.	F	Low	High	\$ X,XXX
Mixed Waste	Lead bricks, activated lead in the thermal shield, and other hazardous waste streams are not adequately characterized. These waste streams add significant cost for transportation and disposal.	F	Med	High	\$ X,XXX
Total Risk Cost Summary					\$XX,XXX
Weighted Probability Factor					YY%
Weighted Risk Contingency					\$XX,XXX

Risk Analysis Summary

- Key Requirement: personnel identifying risk scenarios are experienced and in the field of core competency
- Establish a process that everyone will buy into
- Make sure the process is fitted to the activity; Monte Carlo simulations have their place and sometimes they don't!
- Establish what strategy there is for work-around
- Monetize the end product to come down to delivery, schedule and cost

The Risk Memo

- Used in the assessment phase of a business decision; go no go; management review & approval
- Established based on project requirements, execution strategy, local conditions and project unknowns
- A process that accompanies a capture plan and project specifics in order for management team assessment of go / no go decision making.

The Risk Memo- Typical TOC

1. **Client, Work Location**
2. **Project Work Scope**
3. **Contract Performance Period**
4. **Team Members/Responsibilities**
 1. Project Manager
 2. Process
 3. Construction
 4. Project Controls / Accounting / Estimating
 5. Discipline Engineering
 6. Environmental / Permitting
 7. Procurement / Materials Management
5. **Procurement Evaluation Criteria**
6. **Capture Plan**
7. **Schedule of Events**
 1. Procurement Schedule
 2. Project Schedule Milestones:
8. **Permits**

The Risk Memo- typical TOC

9. **Project Labor Agreement**
10. **Legal / Contract**
 - Contract Type
 - Liquidated Damages/Penalties
 - Consequential Damages
 - Insurance Provisions
 - Indemnity
 - Bonding
 - Other Issues
11. **Schedule Risks and Mitigations**
12. **Performance Risks and Mitigations**
13. **Regulatory/Environmental Risks and Mitigations**
14. **Safety Risks and Mitigations**
15. **Financial Risks and Mitigations**
16. **Quality Assurance (QA) Risks and Mitigations**
17. **Subcontractor Risks and Mitigations**
18. **Acceptance Testing Risks and Mitigation**

The Risk Memo- typical TOC

19. **Commercial Terms**

1. Fee Terms
2. Capital Requirements
3. Cash Flow
4. Retention
5. Cost of Capital

20. **Project Financials**

1. Gross Project Revenue
2. Net Project Profit
3. Contribution Margin after assessment
4. Cash Flow
5. ROI

21. **Bid and Proposal Budget**

22. **Capture Manager Comments**

23. **Executive Management Sponsor Comments**

Specific Risk Issues in Design Build as compared to Traditional 2 step procurement

DESIGN-BID-BUILD VS. DESIGN-BUILD

Here are just a few differences between the two project delivery systems:

TRADITIONAL	DESIGN-BUILD
LATE DESIGN	
<ul style="list-style-type: none"> - Contractor gets an extension of time - Contractor may get delay damages 	<ul style="list-style-type: none"> - No extension of time - Contractor can be liable for delay damages
UNCLEAR DESIGN	
<ul style="list-style-type: none"> - Contractor gets an extension of time if delayed - Contractor may get additional money 	<ul style="list-style-type: none"> - No extension of time - No additional money - Design-builder liable for added costs, delays
DESIGN ERROR	
<ul style="list-style-type: none"> - Owner is responsible for design - Contractor gets additional money for any rework or delay - Contractor gets extension of time 	<ul style="list-style-type: none"> - Design-builder is responsible for design - No time extension; no additional money - Design-builder can be liable for owner's added cost, delay
REQUESTS FOR INFORMATION (RFIs)	
<ul style="list-style-type: none"> - If justified, contractor gets additional time - Contractor may get delay damages, extra costs of handling RFIs 	<ul style="list-style-type: none"> - EXPECTED - designs are not presented to the contractor completed but there is no leniency in the project's schedule or budget due to incomplete designs

References

1. ***Triple Bottom Line Risk Management- enhancing profit, environmental performance and community benefit***, Adrian Bowden, Malcolm R Lane, Julia H Martin
2. ***Risk Reduction in Nuclear Facility Deactivation - Decommissioning & Restoration (DD&R); A Systems Engineered Approach***, Dr. Dennis P Ferrigno, WM '05
3. Professor Notes, Denver Seminary; ***Systems Thinking & Strategic Decision Making***, Dennis Ferrigno
4. Professor Notes, University of Colorado; ***Marketing Contracting & Sales***, Dennis Ferrigno
5. ***Simplified Strategic Planning***, Robert Bradford and Peter Duncan
6. 2005 XL Insurance Capital Group Handouts

Exercise in SWOT Analysis

SWOT

1. Select the top 4 of those market sectors
2. Perform a SWOT of the top two market sectors analyzing today and where you want to be 2 years from now. Document the listing of strengths weakness opportunity and threats for each

Exercise Deliverables

List for each of the top two market sectors which goals and metrics you would establish to execute and measure as activities and indicators of the project / sub-mission tracking over the course of a recommended period of performance

SWOT Analysis

Example 1 for Business Area _____ (current)

Service Sector

Strengths

Weaknesses

Opportunities

Threats

SWOT Analysis

Example 1 for Business Area _____
(future vision- where the strategy brings the organization

Service Sector

Strengths		
Weaknesses		
		Opportunities
		Threats

SWOT Analysis

*Example 1 for Business Area _____
(strategic activities needed to bring future vision- where the strategy brings the organization)*

Service Sector

Vision Strengths	Action
Remaining Weakness / Threats	