

Workshop T7

Tuesday, October 28, 1:30–3:00 p.m. and 3:30–5:00 p.m.

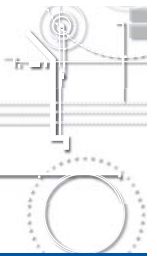
ENTERPRISE RISK MANAGEMENT FOR A PROJECT LIFE CYCLE

Presented by

Marcy Zeichner
Senior Risk Management Consultant
XL Insurance-Environmental

Certain risks are common to most types of contractors, yet some contractors do a much better job of managing risk than others. By identifying and addressing risk management needs and objectives with a holistic perspective, and aligning risk management criteria with a project's life cycle, contractors can achieve a higher level of performance and profitability. Data collected from profitable construction companies will be utilized to show risk management benchmarks from which contractors can learn how to measure their success.

- Demonstrates how risk management strategies impact profitability.
- Addresses common risk management challenges for contractors and demonstrates proven strategies for addressing them.
- Provides baseline data for contractors to compare their performance to industry leaders.



YOUR PARTNER IN RISK MANAGEMENT



ABC CONSTRUCTION SERVICES CORPORATION is dedicated to providing our clients with the services necessary to ensure that every project is being constructed to a higher standard of quality and workmanship. Whether fulfilling an insurance requirement, starting or enhancing your company's QC program, *ABC* provides the services and support to fulfill those needs.

ABC's Certified Field Consultants have decades of experience and comprehensive expertise to help protect you and your project from construction defects caused by errors in design, deviation from design, substandard workmanship or lack of knowledge of proper construction. From Construction Document Review to HOA Maintenance Manuals, *ABC*'s programs provide a proactive approach against the potential risk of costly litigation.

ALL OF ABC'S PROGRAMS CAN BE COMBINED OR TAILORED TO SUIT A CLIENT'S NEEDS AND/OR REQUIREMENTS:

- Quality Assurance Program
- Design Document Review
- Maintenance Manuals
- Risk Assessment
- Bank Draw Review
- Project Turnover Documentation
- Technical Services and Consulting

ABC HAS THE RESOURCES AND EXPERTISE TO PROVIDE PROGRAMS TO SOME OF THE NATION'S LARGEST CONTRACTORS AND ON THE FOLLOWING TYPES OF PROJECTS:

- Single family, multifamily and commercial wood framed construction
- Mid and high-rise steel and/or concrete construction for residential, commercial, retail or mixed use occupancies
- Institutional construction including schools and hospitals
- Industrial construction which includes power plants and natural gas processing plants
- Heavy infrastructure construction such as roads, bridges and utilities

Marcy Zeichner
Senior Risk Management Consultant
XL Insurance-Environmental

Ms. Zeichner is presenting Workshop T7, "Enterprise Risk Management for a Project Life Cycle," on Tuesday afternoon. She is senior risk management consultant in XLI's Construction and Environmental Services unit. Ms. Zeichner is a degreed Environmental Scientist with over 16 years' experience as a risk management consultant. She has a broad view of the construction industry from an insurance perspective resulting from client-specific risk assessments, claims trending, and knowledge of industry practices. She has successfully assisted hundreds of firms in proactively managing their professional and pollution risks. Analysis of insurance claims and involvement in identifying industry best practices has allowed Ms. Zeichner to develop a broad picture of the construction industry and a realistic perspective on how to best manage risk. Over the last 16 years, she has assisted firms with identifying their operational and business risks and developed steps to mitigate those risks. Ms. Zeichner develops and presents risk management training programs that provide tools and techniques to help professionals identify, manage, and decrease their daily business risks.

Notes

This file is set up for duplexed printing. Therefore, there are pages that are intentionally left blank. If you print this file, we suggest that you set your printer to duplex.

Enterprise Risk Management for a Project Life Cycle

**Presented by:
Marcy Zeichner
Senior Risk Management Consultant
XL Environmental
Exton, Pennsylvania**

2008, XL Environmental, a member of the XL Capital group, All rights reserved



Agenda

- Enterprise Risk Management Culture
- Aligning Risk Management with the Project Phases
- Project Risk Factors and Control Techniques
- Qualitative Approaches to Managing Risks



2

Enterprise Risk Management

“The process of making and implementing decisions that will minimize the adverse effects of accidental and business losses on an organization.”



3

Benefits of Enterprise Risk Management

- Framework to achieve your company's main business objectives
- Prioritize the objectives so your company can focus limited resources
- Objectives and Priorities are Aligned
- Strategy to develop critical path to success and associated performance indicators

Achieving Enterprise Risk Management

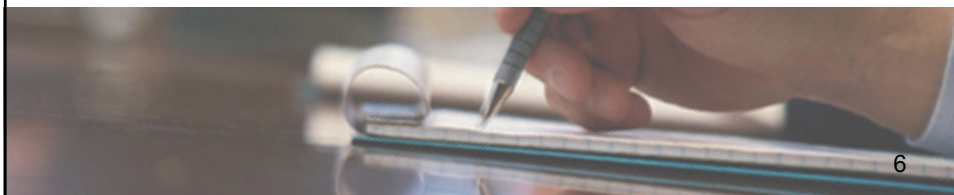
- Involve all personnel
- Determine business objectives
- Develop clear policies with associated controls
- Obtain corporate and management buy-in
- Change corporate culture

2008, XL Environmental, a member of the XL Capital group, All rights reserved

5

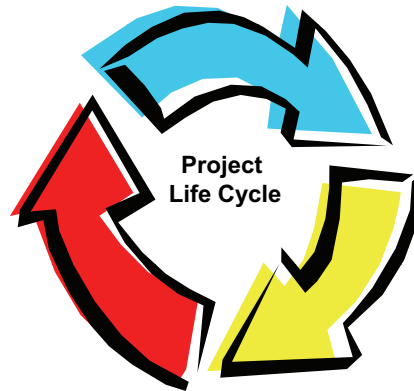
Risk Management Process

- | | |
|-------------------|-----------------------------------|
| Step One | Identify/Analyze |
| Step Two | Evaluate |
| Step Three | Avoid or accept |
| Step Four | Implement loss control techniques |
| Step Five | Monitor/Improve |



6

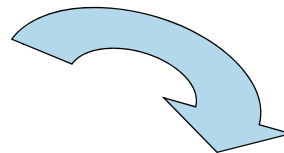
Managing the Project Life Cycle:



- Project development
- Preconstruction
- Construction
- Project closeout
- Occupancy

Project Life Cycle – Project Development Risk Identification:

- Project go/No go evaluation
- Client selection
- Project selection
- Project delivery

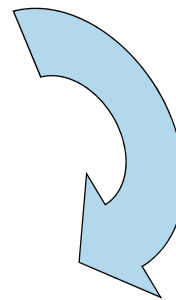


Risk Management Qualitative Tool

Characteristics	Low Risk (Level 3 - Basic QA)	High Risk (Level 1 - Critical QA)
Client: What are the client's financials? What is the client's litigation history? Does the client share common goals?	<input type="checkbox"/> <input type="checkbox"/> No Concerns <input type="checkbox"/> <input type="checkbox"/> No Concerns <input type="checkbox"/> Yes	<input type="checkbox"/> <input type="checkbox"/> Concerns <input type="checkbox"/> <input type="checkbox"/> Concerns <input type="checkbox"/> No
Project: Are we familiar with this delivery system? Have we considered this delivery system in our pricing?	<input type="checkbox"/> <input type="checkbox"/> Yes <input type="checkbox"/> <input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> No
Do we have expertise in this project/client type? Have we successfully performed this type of project previously? Is this project in our niche business?	<input type="checkbox"/> <input type="checkbox"/> Yes <input type="checkbox"/> <input type="checkbox"/> Yes <input type="checkbox"/> <input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No

Project Life Cycle – Preconstruction Risk Evaluation and Selection:

- Contract terms and conditions
- Staffing evaluation
- Budget and schedule development



Risk Management Qualitative Tools

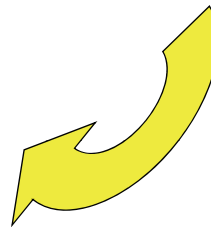
Characteristics	Low Risk (Level 3 - Basic QA)	High Risk (Level 1 - Critical QA)
Contract Terms Indemnification Limitation of liability Liability Warranty beyond standard of care Liquidated damages/Stipulated penalties	<input type="checkbox"/> Negligence based <input type="checkbox"/> Indemnification of company <input type="checkbox"/> Cap on liability <input type="checkbox"/> <input type="checkbox"/> No <input type="checkbox"/> <input type="checkbox"/> No <input type="checkbox"/> <input type="checkbox"/> No	<input type="checkbox"/> Nonnegligence based <input type="checkbox"/> Liability for client or others' acts, errors, or omissions <input type="checkbox"/> No cap on liability <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes
Contract type is lump sum, firm fixed price >\$500K The scope of the project is:	<input type="checkbox"/> No <input type="checkbox"/> Well defined	<input type="checkbox"/> Yes <input type="checkbox"/> Poorly defined
The project team: Project management has expertise The project team has worked together	<input type="checkbox"/> Yes <input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> No
The total estimated effort hours are:	<input type="checkbox"/> Less than 1,000 hours	<input type="checkbox"/> Greater than 5,000 hours

2008, XL Environmental, a member of the XL Capital group, All rights reserved

11

Project Life Cycle – Preconstruction Initiate Risk Management Tools:

- Resource availability
- Subcontractor selection
- Project management selection
- Project team development



2008, XL Environmental, a member of the XL Capital group, All rights reserved

12

Risk Management Qualitative Tools

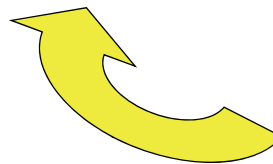
Characteristics	Low Risk (Level 3 - Basic QA)	High Risk (Level 1 - Critical QA)
Materials: Will they be available? Have you considered commodity cost increase	<input type="checkbox"/> <input type="checkbox"/> Yes <input type="checkbox"/> <input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> No
Subcontractors: Do they have project and client experience? Do they have pollution and professional liability insurance? Do they have mold coverage?	<input type="checkbox"/> <input type="checkbox"/> Yes <input type="checkbox"/> <input type="checkbox"/> Yes <input type="checkbox"/> <input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No
Project Team: Do they have necessary experience and expertise? Do they have the needed skill set? Is there adequate project team communication built into the cost/time estimate?	<input type="checkbox"/> <input type="checkbox"/> Yes <input type="checkbox"/> <input type="checkbox"/> Yes <input type="checkbox"/> <input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No

2008, XL Environmental, a member of the XL Capital group, All rights reserved

13

Project Life Cycle – Construction Phase Initiate Risk Management Controls/Tools:

- Task development
- Project specific administrative controls
- Documentation – project file development
- Communication
- Technology application
- Change order management



2008, XL Environmental, a member of the XL Capital group, All rights reserved

14

Risk Management Qualitative Tools

Characteristics	Low Risk (Level 3 - Basic QA)	High Risk (Level 1 - Critical QA)
The scope of the project is: Tasks have been identified and distributed to staff	<input type="checkbox"/> Well defined <input type="checkbox"/> Yes	<input type="checkbox"/> Poorly defined <input type="checkbox"/> No
Has the PM identified the scope and its limitations to the client? Will change orders be managed in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> No
There are standard operating procedures in place for these services/operations	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Ongoing meetings with the project staff and client are scheduled	<input type="checkbox"/> Yes	<input type="checkbox"/> No

2008, XL Environmental, a member of the XL Capital group, All rights reserved

15

Project Life Cycle – Project Closeout QC/Corrective Measures

- Project file audit
- Project closeout
- Warranty/Guarantee
- Lessons learned
- Claim management
- Receivable collection



2008, XL Environmental, a member of the XL Capital group, All rights reserved

16

Risk Management Qualitative Tools

Characteristics	Low Risk (Level 3 - Basic QA)	High Risk (Level 1 - Critical QA)
The project file has been reviewed for its complete, comprehensive, and consistent organization	<input type="checkbox"/> Yes	<input type="checkbox"/> No
There is follow-up with the client at the end of the project to determine satisfaction and no further action items	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Scheduled inspections and maintenance is in place during the warranty/guarantee period	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Claims or potential claims are identified	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Lessons learned from the project are identified and communicated to the company's staff	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> Yes	<input type="checkbox"/> No

2008, XL Environmental, a member of the XL Capital group, All rights reserved

17

Risk Factors

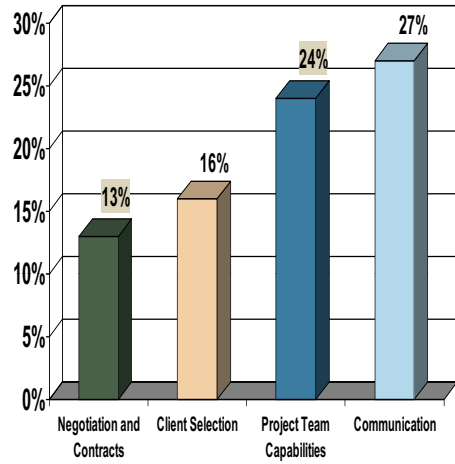
- Technical risk factors
- Nontechnical risk factors

If *these* are addressed, you can substantially mitigate your risks

2008, XL Environmental, a member of the XL Capital group, All rights reserved

18

Nontechnical Risk Factors



2008, XL Environmental, a member of the XL Capital group, All rights reserved

19

Negotiation and Contract Issues

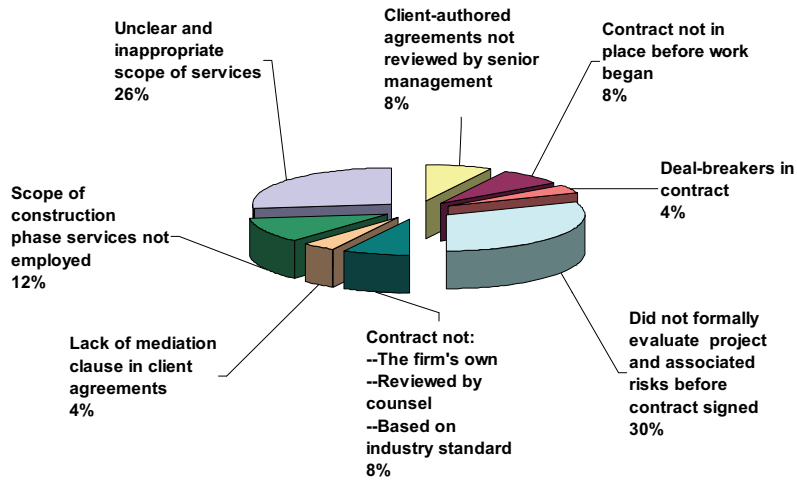


- A contributing factor in:
 - 13% of claims count
 - 17% of claims dollars

2008, XL Environmental, a member of the XL Capital group, All rights reserved

20

Negotiation and Contract Issues



2008, XL Environmental, a member of the XL Capital group, All rights reserved

21

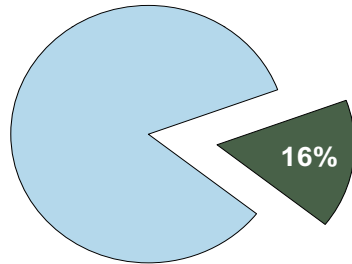
Risk Control Factors for Contracting

- Determining contract clauses to accept/reject
- Proposal development with key project personnel
- Addressing project risks within the contract or by other risk control mitigating factors

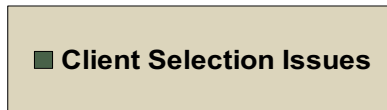
2008, XL Environmental, a member of the XL Capital group, All rights reserved

22

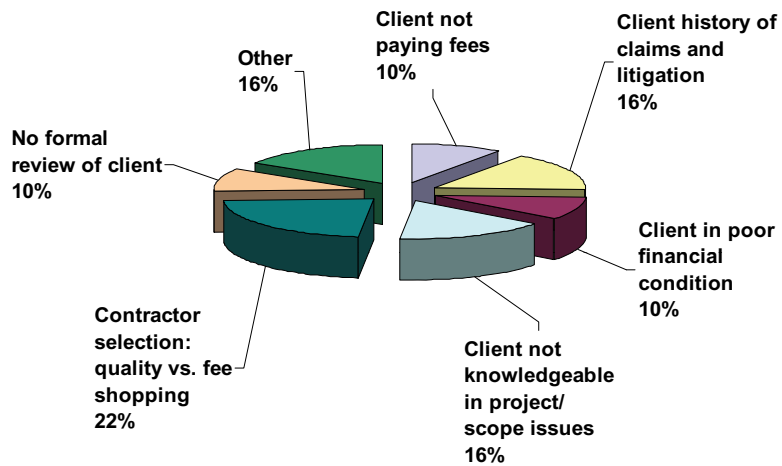
Client Selection Issues



- A contributing factor in:
 - 16% of claims count
 - 18% of claims dollars



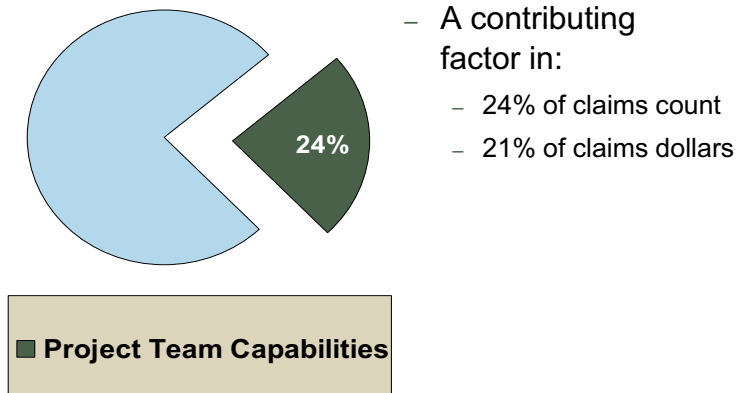
Client Selection Issues



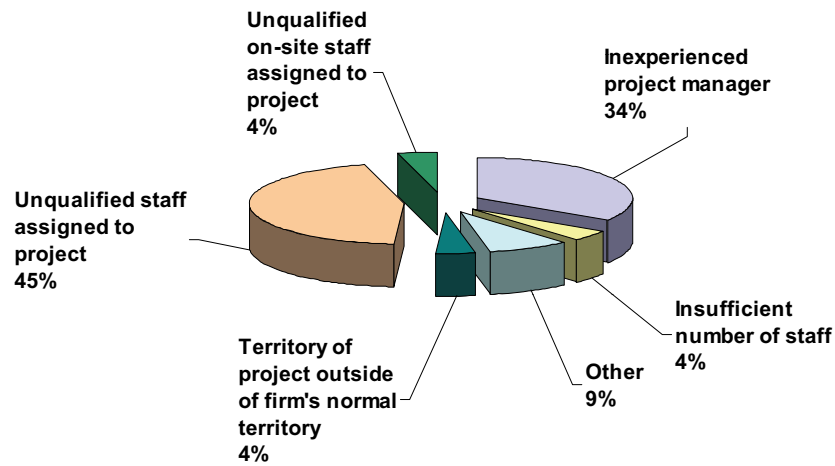
Risk Control Factors for Client Selection

- Client evaluation and history
- Educating the client
- Developing a partnership

Project Team Capabilities Issues



Project Team Capabilities Issues



2008, XL Environmental, a member of the XL Capital group, All rights reserved

27

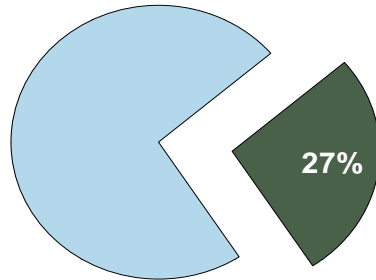
Risk Control Factors for Project Team Selection

- Skill set development
- Steps for improved team interaction
- Staff collaboration at planning stage

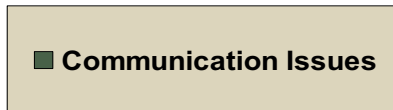
2008, XL Environmental, a member of the XL Capital group, All rights reserved

28

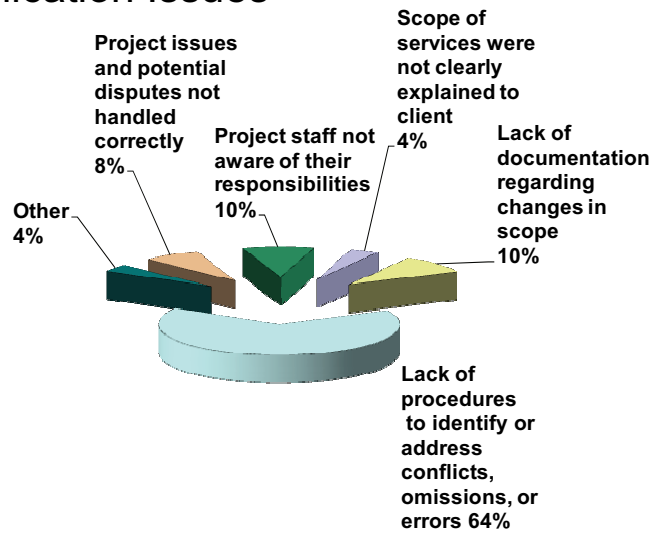
Communication Issues



- A contributing factor in:
 - 27% of claims count
 - 22% of claims dollars



Communication Issues



Risk Control Factors for Communication

- Internal communication controls
- External communication controls
- Project documents and project files
- Use of technology to improve communication

Enterprise Risk Management

Operational Risk

- Business risk
- Financial risk
- Credit risk
- Hazard risk
- Reputation risk

Financial/Market Risk

- Interest rate risk
- Foreign exchange risk
- Commodity risk

Enterprise Risk Management Speculative vs. Pure Risk:

- Speculative risk
- Pure risk

Evaluating Speculative and Pure Risks

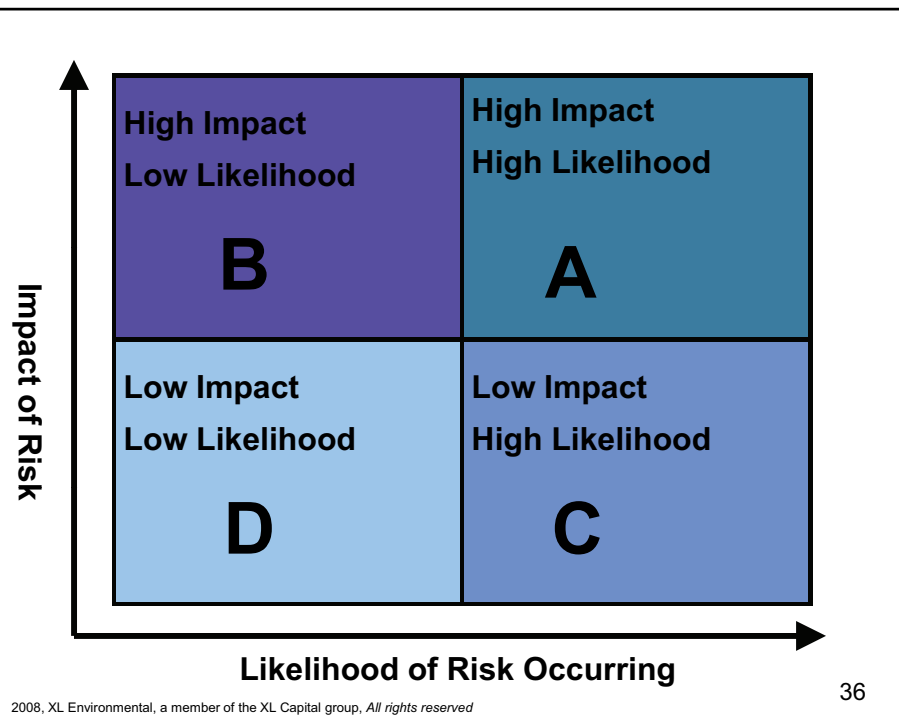
5	High probability of gain and no loss
4	Possibility of gain and no loss
3	Possibility of gain or loss
2	Possibility of loss
1	High probability of loss

Two Projects – Different Operational Risk:

Project #1 - Traditional Service	Speculative	Pure	Project #2 - New Service Offering	Speculative	Pure
Business Risk	4		Business Risk	3	
Financial Risk		4	Financial Risk		2
Credit Risk		4	Credit Risk		3
Hazard Risk		4	Hazard Risk		2
Reputation Risk	3		Reputation Risk	3	
Risk Score	3.5	4.00	Risk Score	3	2.33
Combined Score	3.75		Combined Score	2.67	

2008, XL Environmental, a member of the XL Capital group, All rights reserved

35



2008, XL Environmental, a member of the XL Capital group, All rights reserved

36

Risks Prioritized According to Impact and Likelihood

A= Take immediate action

B= Consider and have a contingency plan

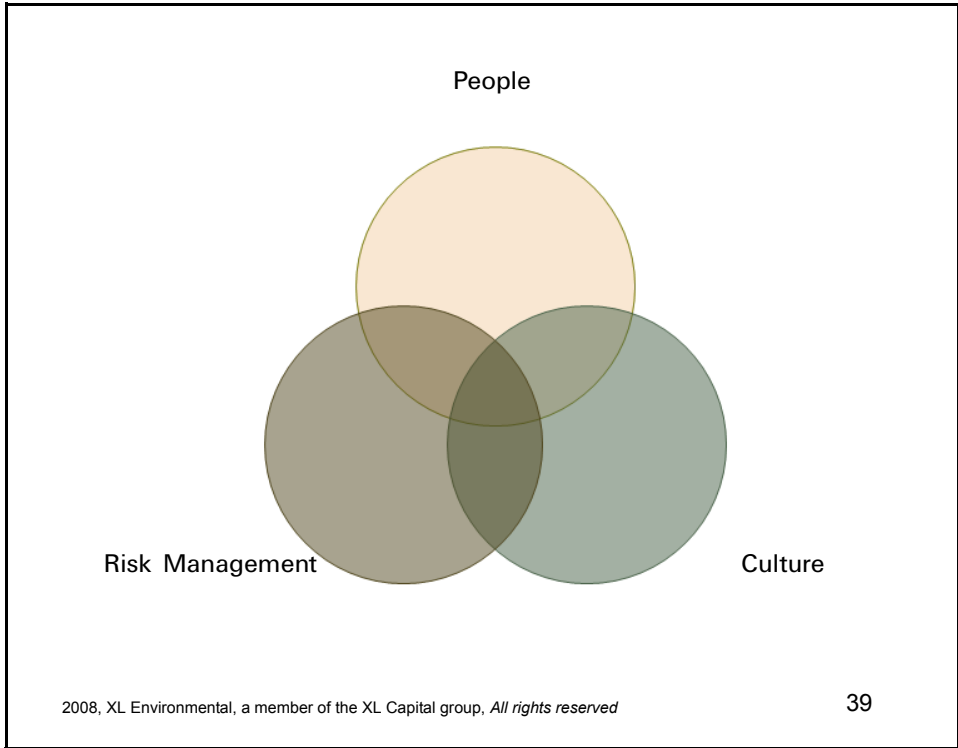
C= Consider action

D= Keep under periodic review

Sample Risk Register Format

Dept.	Risk: Define	Source	Area of Impact	Likeli- hood	Impact	Risk Level	Mit. Strat.

Table courtesy of The ALS Group



2008, XL Environmental, a member of the XL Capital group, *All rights reserved*