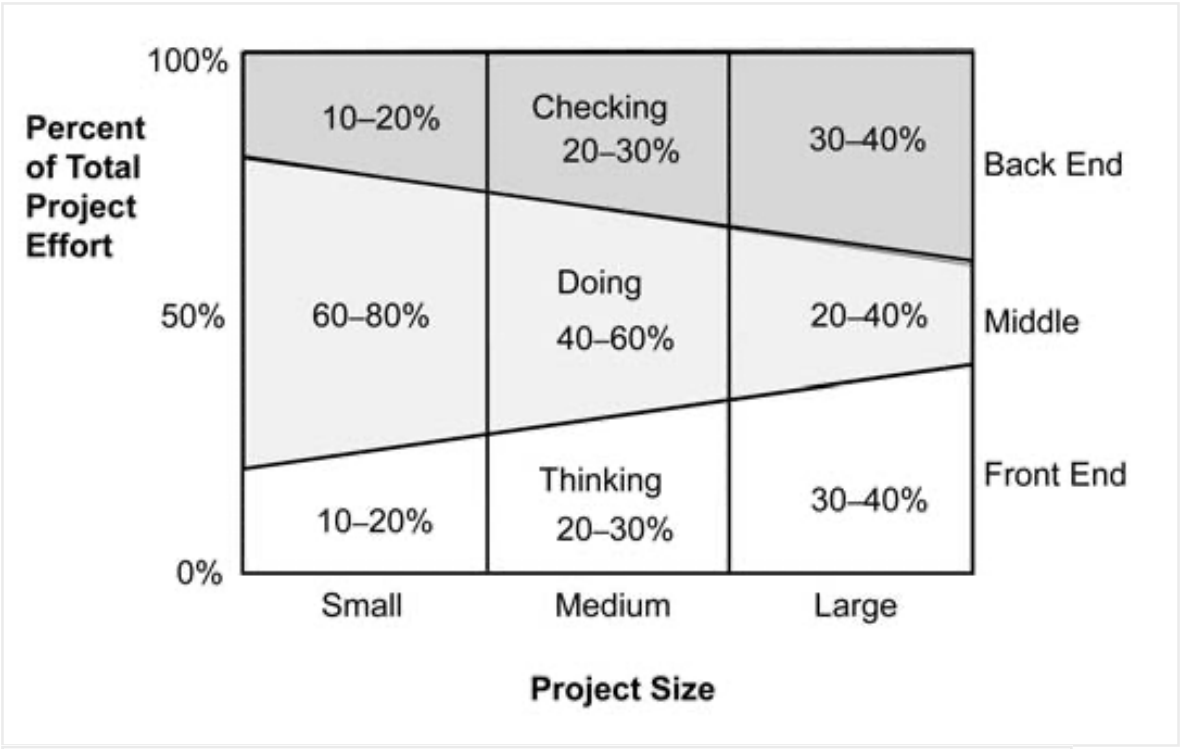
# Risk mgmnt | Info | Tom Kendrick | 2015

Identifying and Managing Project Risk • TOM KENDRICK,PMP • 2015


| | *Relevant metrics exist* | *No data is available* |
|---|---|---|
| *Prior activity experience* | • Retrospectives<br>• Databases<br>• Parametric formulas<br>• Experiential rules and "Size" methods<br>• Notes and status reports | • Task owner input<br>• Peer inputs<br>• Inspections<br>• Delphi analysis<br>• Short tasks (20-day maximum) in WBS<br>• Further decomposition |
| *No activity experience* | • Published information<br>• Vendor quotes<br>• Expert consultation | • Guesses<br>• Outside help<br>• Older technology |



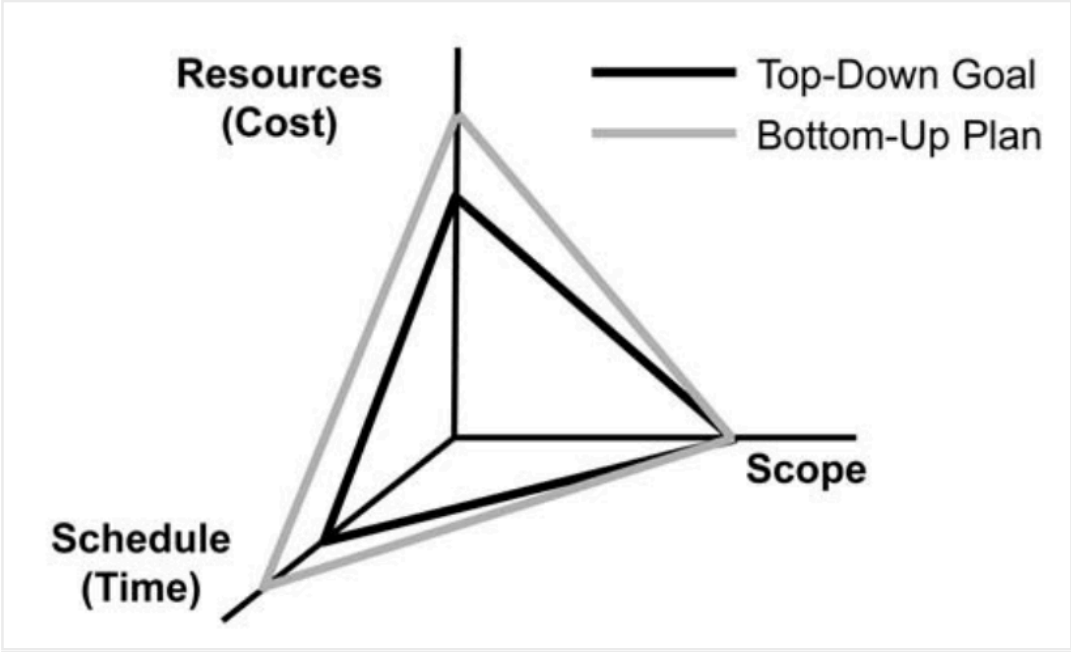




Figure 7-1. Risk Assessment Table

| Risks | Probability | Impact | Overall Risk |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

Figure 7-2. Qualitative Risk Assessment Example

| *Risks* | *Probability (H/M/L)* | *Impact (H/M/L)* | *Overall Risk* |
|---|---|---|---|
| Software Guru Is Not Available | M | H | HM |
| Consultant Is Incompetent | M | M | M |
| Purchased Component Comes Late | L | H | M |
| Software Development Is Too Slow | L | M | ML |
| Needed Test Gear Is Not Available | L | L | L |

Figure 7-3. Risk Assessment Matrix

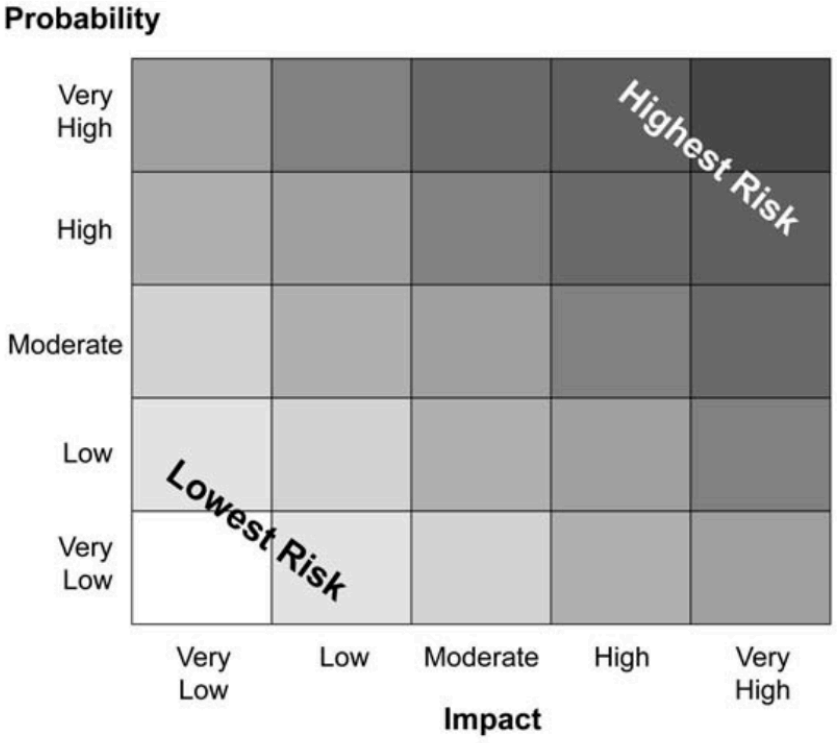


Figure 7-4. Risk Assessment Graph

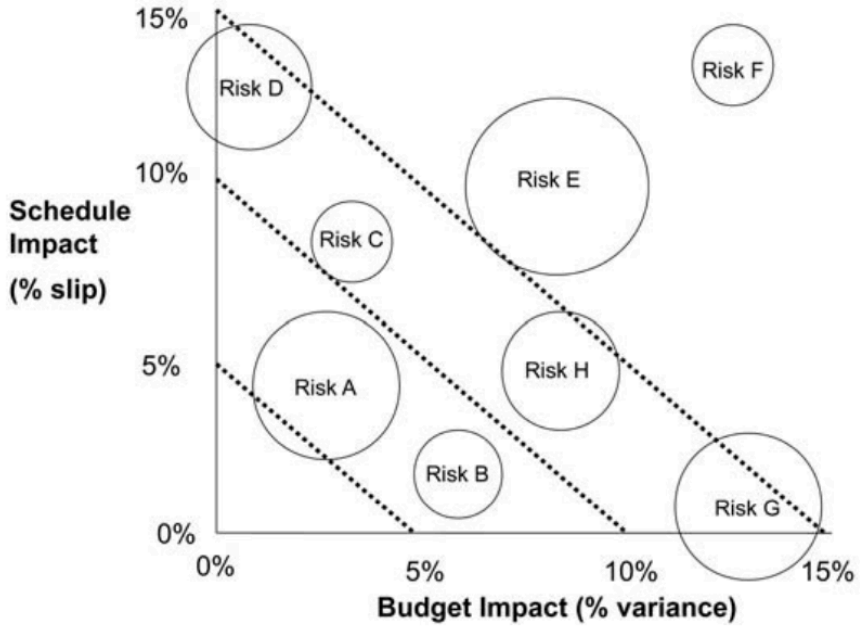
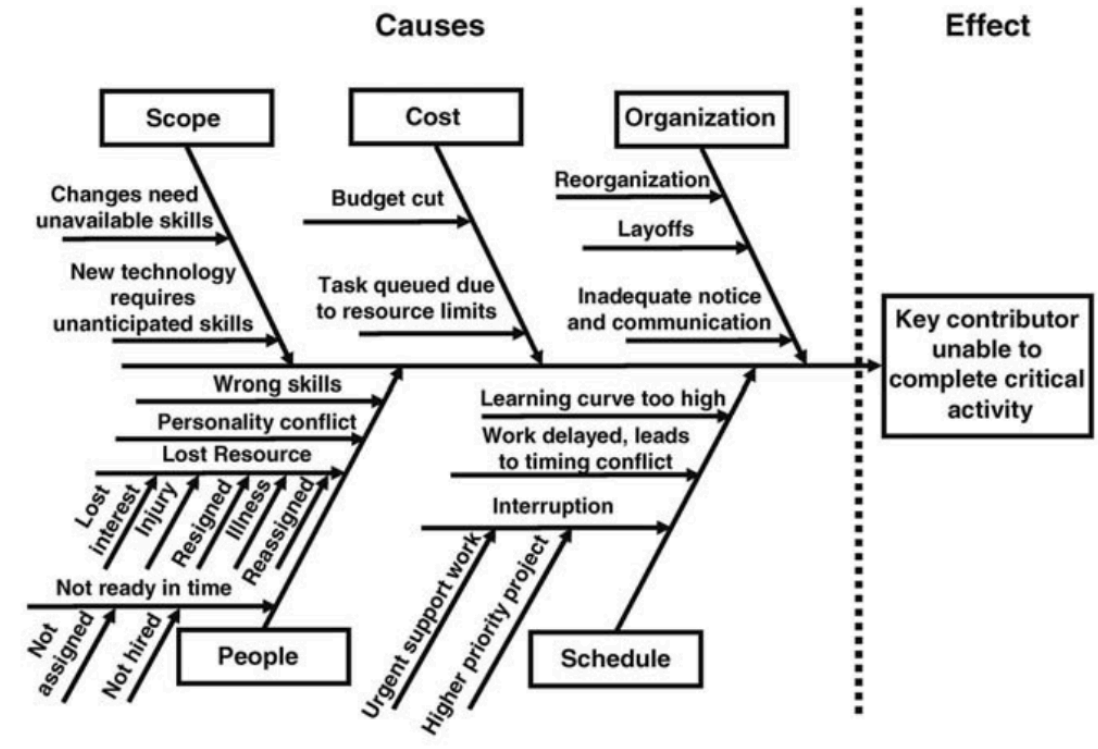



Figure 8-1. Fishbone Diagram



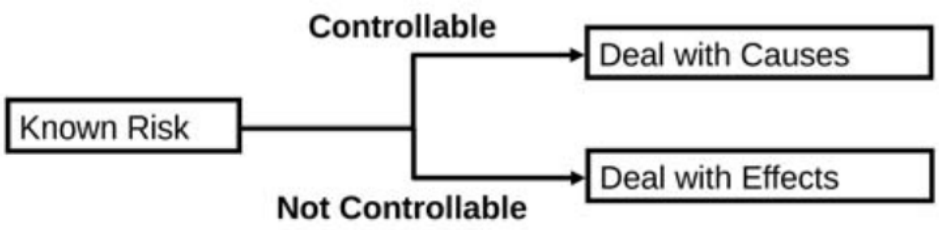



Figure 8-5. Risk Management Timeline

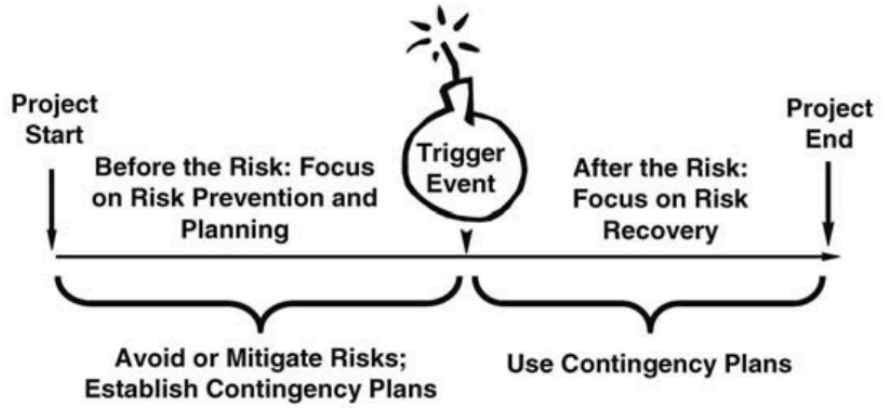
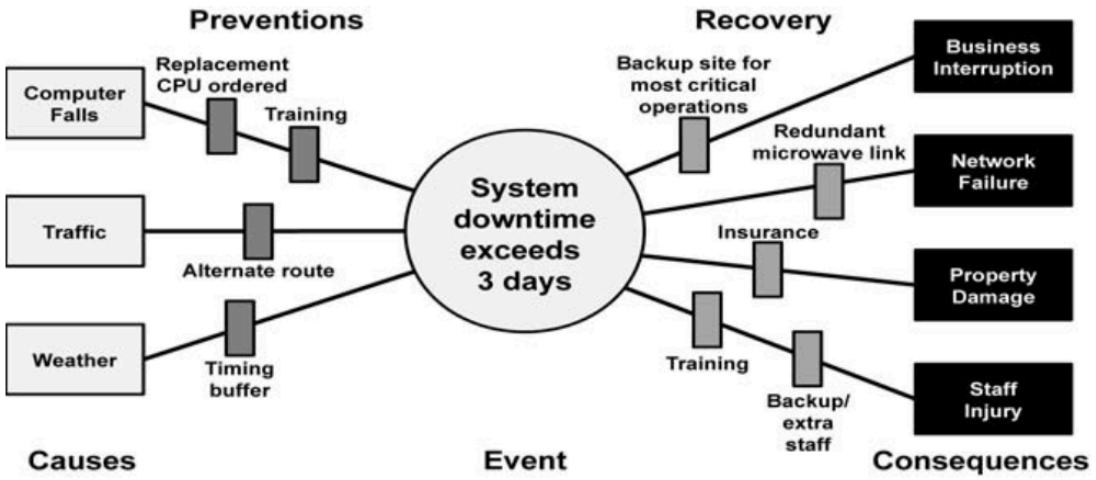



Figure 8-8. Bow Tie Analysis Example



## Postproject Risk Survey

Please evaluate each of the following statements using the scale:

*1—Strongly agree 2—Agree 3—No opinion 4—Disagree 5—Strongly disagree*

Also, please add any comments or feedback you have on any of these topics.

| | |
|---|---|
| 1 2 3 4 5 | The project developed and used a risk plan. |
| 1 2 3 4 5 | Project problems were dealt with quickly and were escalated promptly when necessary. |
| 1 2 3 4 5 | Schedule problems were dealt with effectively. |
| 1 2 3 4 5 | Resource problems were dealt with effectively. |
| 1 2 3 4 5 | Project specifications were modified only thorough an effective change control process. |
| 1 2 3 4 5 | Detailed project reviews were done appropriately. |
| 1 2 3 4 5 | Project communication was frequent enough. |
| 1 2 3 4 5 | Project communication was thorough and complete. |
| 1 2 3 4 5 | Project documentation was self-consistent and available when needed. |
| 1 2 3 4 5 | Project status was reported honestly throughout the project. |
| 1 2 3 4 5 | Reporting of project difficulties resulted primarily in problem solving. |
| 1 2 3 4 5 | The project had adequate sponsorship and support throughout. |

## Example Questions for a Risk Questionnaire

# Example Questions for a Risk Questionnaire

## Section 1. Project Parameter and Target User Risks

### 1-1. Scope (project deliverable specification) stability.

- ☐ Change is unlikely
- ☐ Small change is possible
- ☐ Changes are likely or definition is incomplete

### 1-2. Project budget/resources

- ☐ Committed and realistic
- ☐ Probably sufficient, with margin/reserve defined
- ☐ Insufficient or unknown

### 1-3. Project Deadline

- ☐ Realistic
- ☐ Possible; margin/reserve defined
- ☐ Overly aggressive or unrealistic

### 1-4. Total project length

- ☐ Less than 3 months
- ☐ 3 to 12 months
- ☐ More than 12 months

**1-5. Total effort-months estimated for the project.**

☐ Less than 30 ☐ 30 to 150 ☐ More than 150

**1-6. Peak size of core project team (key contributors critical to the project).**

☐ 5 or fewer ☐ 6 to 12 ☐ More than 12

**1-7. Project manager experience**

☐ Finished more than one comparable project successfully ☐ Finished a project about the same size successfully ☐ None, or has done only smaller or shorter projects

**1-8. User support for the project objective (scope, schedule, and resources)**

☐ Enthusiastic ☐ General agreement ☐ Small or unknown

**1-9. Prioritization of scope, schedule, and resources (constrained, optimized, accepted)**

☐ Known and agreed upon; only one parameter is constrained. ☐ Two parameters are constrained, but one is flexible. ☐ No priorities set, or all parameters are constrained.

**1-10. Number of different types of users (market segments)**

☐ 1 ☐ 2 ☐ 3 or more

**1-11. Project team interaction with users during project**

☐ Frequent and easy ☐ At project start and end only ☐ Little or none

**1-12. User need for the project deliverable**

☐ Verified as critical to user's business ☐ Solves a problem; increases user efficiency ☐ Not validated or unknown

**1-13. User enthusiasm generated by the project deliverable at project start**

☐ High ☐ Some ☐ Little or none

**1-14.User acceptance criteria for the project deliverable**

☐ Well defined ☐ Nearly complete ☐ Definition incomplete

**1-15. User environment and process changes required to use the project deliverable**

☐ None ☐ Minor ☐ Significant

**1-16. User interface to operate or use the project deliverable**

☐ Identical to one now in use ☐ Similar to one now in use ☐ New or represents major changes

**1-17. Testing planned with actual users of the project deliverable**

☐ Early, using models or prototypes ☐ Midproject, at least for key subdeliverables ☐ Late in project; Beta test

## Section 2. Technical Risks

### General

**2-1. Complexity of development**

- ☐ Less than recent successful projects
- ☐ Similar to recent successful projects
- ☐ Unknown or beyond recent similar projects

**2-2. Development methodology**

- ☐ Standardized
- ☐ Similar to other recent projects
- ☐ Ad hoc, little, or none

**2-3. Minimum team experience with critical development technologies**

- ☐ More than 1 year
- ☐ 6 months to 1 year
- ☐ Little or none

**2-4. Tools, workstations, and other technical resources**

- ☐ Established, stable, and well understood
- ☐ All have been used before
- ☐ Some new facilities or tools required

**2-5. Planned reuse from earlier projects**

- ☐ More than 75 percent
- ☐ 40 to 75 percent
- ☐ Little or none

**2-6. Early simulation or modeling of deliverable**

- ☐ Will be done with existing processes
- ☐ Planned but will need new processes
- ☐ Not planned or not possible

**2-7. Technical interfaces required (connections of this project's deliverable into a larger system or to deliverables from independent projects)**

- ☐ None (stand-alone) and well understood
- ☐ Less than 5 and all are to existing systems
- ☐ More than 5 or more than 1 that is new (parallel development)

### Hardware

**2-8. Hardware technology incorporated into deliverable**

- ☐ All established, existing technology
- ☐ Existing technology in a new application
- ☐ New, nonexistent, or unknown technology

**2-9. Testing**

- ☐ Will use only existing facilities and processes
- ☐ Will use existing facilities with new processes
- ☐ Unknown, or new facilities needed

**2-10. Component count**

- ☐ Number and type similar to recent successful projects
- ☐ Similar number, but some new parts required
- ☐ Unknown, larger number, or mostly unfamiliar components

**2-11. Component sources**

- ☐ Multiple reliable, managed sources for all key components
- ☐ More than one identified source for all key components
- ☐ A single (or unknown) source for at least one key component

**2-12. Component availability (lead times, relative to project duration)**

- ☐ Short lead times for all key components
- ☐ One or more key components with long but known lead times
- ☐ One or more key components with unknown lead times

**2-13. Mechanical requirements**

- ☐ All significant processes used before
- ☐ Some modification to existing processes required
- ☐ New, special, or long lead processes needed

### Software

**2-14. Software required for deliverable**

- ☐ None or off-the-shelf
- ☐ Mostly leveraged or reused
- ☐ Mostly new development

**2-15. Software technology**

- ☐ Very high-level language only (4GL)
- ☐ Standard language (C++, Java, PERL, COBOL)
- ☐ New or low-level language (assembler)

**2-16. Data structures required**

- ☐ Not applicable or relational database
- ☐ Other database or well-defined files
- ☐ New data files

**2-17. Data conversion required**

- ☐ None required
- ☐ Minor
- ☐ Major or unknown

**2-18. System complexity**

- ☐ No new control or algorithm development
- ☐ Little new control or algorithm development
- ☐ Significant new or unknown development

**2-19. Processing environment of deliverable**

- ☐ Single system
- ☐ Multisystem but single site
- ☐ Distributed, multisite system

## Section 3. Structure Risks

**3-1. Project sponsorship and management commitment to project objective (scope, schedule, and resources)**

- ☐ Enthusiastic
- ☐ Supportive
- ☐ Neutral or none

**3-2. Project priority**

- ☐ High
- ☐ Moderate
- ☐ Low

**3-3. Project manager experience**

- ☐ Success on recent similar project
- ☐ Managed part of a recent similar project
- ☐ Low or none on this sort of project

**3-4. Project manager authority**

- ☐ Most project decisions made by PM
- ☐ Limited decision making and budget control
- ☐ None; all decisions escalated to others

**3-5. Project manager focus**

- ☐ Full time on this project
- ☐ More than half time spent managing this project
- ☐ Less than half time spent managing this project

**3-6. Project plan**

- ☐ Plan is realistic and bottom-up
- ☐ Plan seems possible and has defined reserve for schedule/budget
- ☐ Plan is unrealistic or no plan exists

**3-7. Project version control and change management**

- ☐ Well-defined and rigorously used process
- ☐ Informal but effective process
- ☐ Little or no change control

**3-8. Project life cycle**

- ☐ Well defined with clear milestones and phase deliverables
- ☐ Defined but not rigorously used
- ☐ No formal life cycle

**3-9. Project staffing**

- ☐ Available and committed
- ☐ All key people identified
- ☐ Significant staffing unknowns remain

**3-10. Subprojects**

- ☐ This project is independent of other work
- ☐ All related subprojects are well defined and coordinated
- ☐ Related subprojects are loosely coupled or not clearly defined

**3-11. Project work environment**

- ☐ Your site; workplace known and conducive to project progress
- ☐ Some work must be done in an unknown or poor work environment
- ☐ Mostly off-site or in a poor work environment

**3-12. Staffing commitment**

- ☐ All key people are full time
- ☐ Mix of full-time and part-time staffing
- ☐ All part-time or external staffing

**3-13. Team separation**

- ☐ Co-located
- ☐ Single site
- ☐ Multisite

**3-14. Team enthusiasm for the project**

- ☐ High
- ☐ Adequate
- ☐ Reluctant or unknown

**3-15. Team compatibility**

- ☐ Most of team has worked together successfully
- ☐ Some of team has worked together before
- ☐ New team

**3-16. Lowest common manager for members of the core project team**

- ☐ Project leader
- ☐ Up to two levels in same organization
- ☐ More than two levels up, or none

**3-17. Number of outside organizations or independent projects that this project depends on for inputs, decisions, or approvals**

- ☐ None
- ☐ One other
- ☐ More than one

**3-18. Project dependence on external subcontractors or suppliers**

- ☐ Little or none (less than 10 percent)
- ☐ Minor (10 to 25 percent)
- ☐ Significant (more than 25 percent)

**3-19. Quality of subcontractors**

- ☐ High—with relevant subcontractors used
- ☐ Good—solid references from trusted sources
- ☐ Doubtful or unknown experience (or none)

**3-20. Project communication**

- ☐ Frequent (weekly) face-to-face status gathering and written reporting
- ☐ Sporadic, informal, or long-distance status and reporting
- ☐ Ad hoc or none

**3-21. Project tracking**

- ☐ Frequent (weekly) reporting of actual progress versus plan
- ☐ Project leader tracks and deals with plan exceptions reactively
- ☐ Informal or none

**3-22. Project documentation**

- ☐ Accurate, current documents are online for project team
- ☐ Current status and schedule are available to project team
- ☐ Documents known only to project leader, or none

**3-23. Project issue resolution**

- ☐ Well-defined process; issues tracked and closed promptly
- ☐ Informal but effective process
- ☐ Issues are not easily resolved in a timely fashion

Project Appraisal

assembled using a computer spreadsheet).

Figure 9-7. Project Appraisal

Project : Zinfandel  Effort-Months (Planned) 100

| | | Project A | | Project B | | Project C | |
|---|---|---|---|---|---|---|---|
| | | Comparison | Change in Effort | Comparison | Change in Effort | Comparison | Change in Effort |
| Effort-Months (Actual) | | 110 | | 80 | | 107 | |
| Scope: | Functionality | Similar | 0 | 3% | 2.4 | Similar | 0.0 |
| | Usability | -3% | -3.3 | Similar | 0 | Similar | 0.0 |
| | Reliability | Similar | 0 | 3% | 2.4 | Similar | 0.0 |
| | Performance | 5% | 5.5 | Similar | 0 | -3% | -3.2 |
| | Supportability | Similar | 0 | Similar | 0 | Similar | 0.0 |
| | Technology | -5% | -5.5 | 5% | 4 | -3% | -3.2 |
| Resources: | Maximum staff | -3% | -3.3 | 3% | 2.4 | -5% | -5.4 |
| | Control | Similar | 0 | Similar | 0 | Similar | 0.0 |
| | Staff experience | 3% | 3.3 | Similar | 0 | Similar | 0.0 |
| | Geographical separation | Similar | 0 | 5% | 4 | Similar | 0.0 |
| Schedule: | Total length | -5% | -5.5 | Similar | 0 | 3% | 3.2 |
| | Net adjustments | -8% | -8.8 | 19% | 15.2 | -8% | -8.6 |
| | Indicated effort-months | | 101.2 | | 95.2 | | 98.4 |

Mean effort-months 98.3

Selected Detail from the PERIL Database - Scope Risks, Schedule Risks, Resource Risks,

*Appendix*

# Selected Detail from the PERIL Database

The following information is excerpted from the Project Experience Risk Information Library (PERIL) database. (These risks are

web development
data representation (data science) web real time and big data development representation
medical
english school platform

*Identifying and Managing Project Risk*

Project Experience

*Practice Standard for Project Risk Management*

risk identification, which relies heavily on thorough project definition and planning
assessment and manage- ment of risk

These chapters cover methods for assessing identified risks, establishing an overall risk plan for the project, making project adjustments, ongoing risk tracking, project closure, and the relationship between project risk management and program, portfolio, and enter- prise risk management.

aligning your projects with reality
reducing your risks with minimal incremental effort

These risks are related because only through an adequate understanding of the work can you detect whether objectives are impossible, and only by using the information you develop can you hope to do anything about it.
Identifying and Managing Project Risk is intended to help leaders of today's complex projects (and their managers) successfully deliver on their commitments

have unique aspects and objectives that significantly differ from previous work
and the environment for com- plex projects evolves quickly.

Project Communication and Control