

CUSTOMER

DSDC

PARTNERS
in Quality Solutions

DSDC
DLA'S Central Design Activity

INDUSTRY

Software Risk
Management

Presented by: **DSDC**

For more info, send requests to: sepg@dcdc.dla.mil

Description and Objectives

Description: DoD policy (DoD 5000.1) states that Program Managers are responsible for providing risk assessments to higher authorities and the user or user's representative. This course provides an overview of risk management for software development efforts under the Program Manager's control.

Objectives:

1. Discuss risk management activities
2. Identify the risk evaluation process
3. Introduce tools used during the process

DSDC

CUSTOMER

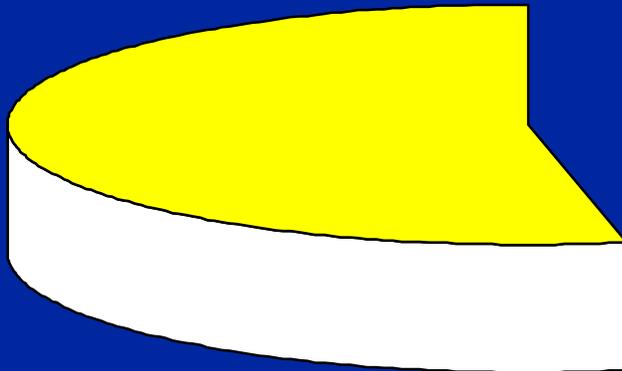
PARTNERS
in Quality Solutions

How Risky is Software Development?

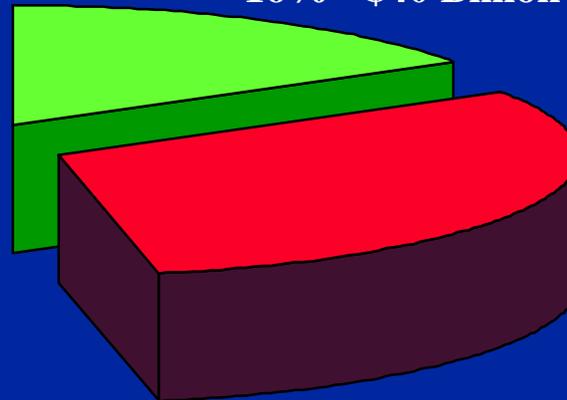
INDUSTRY

Annual Expenditure for Software Development in the U.S. - \$250 Billion

Over Budget, Delayed, Less
Than Planned Functionality
53% - \$132.5 Billion



On Budget, On Time, As requested
16% - \$40 Billion



- Successful
- Impaired
- Challenged

Canceled In Development
31% - \$77.5 Billion

* Conducted By the Standish Group International - Jan 1995

What Are Risks?

Why Do We Need To Address Them?

- ✓ Risks are future events with both a probability of occurrence, and a potential for loss [cost].
- ✓ Once they occur, they are problems and there will be some loss.
- ✓ Upon timely discovery, risks can be avoided, eliminated, or have their impacts lessened.

DSDC

CUSTOMER

PARTNERS
in Quality Solutions

INDUSTRY

What Is Risk Management?

✓ Making informed decisions by assessing what can go wrong and what the resultant impact will be

“Risk [management] does not deal with future decisions,
but with the future of present decisions.”

Dr. Robert Charette

DSDC

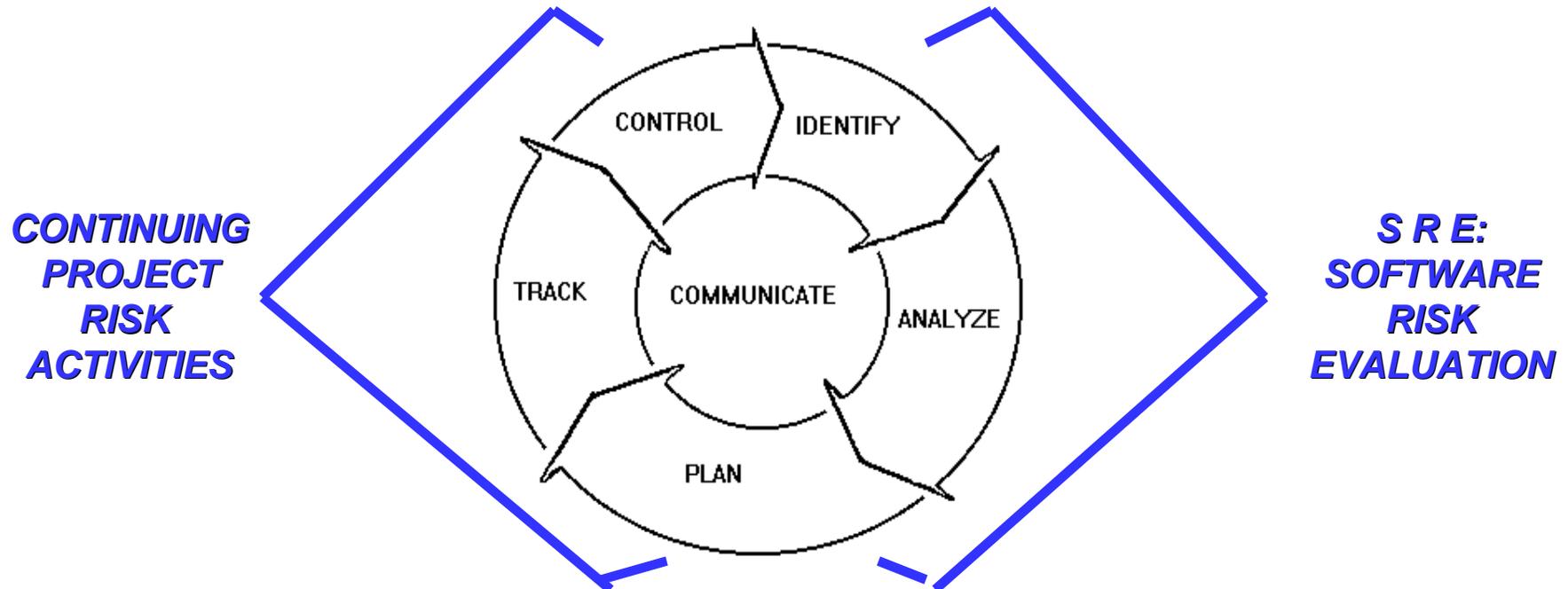
CUSTOMER

PARTNERS
in Quality Solutions

INDUSTRY

What Is The Big Picture?

SEI Risk Management Model



DSDC

CUSTOMER

PARTNERS
in Quality Solutions

INDUSTRY

What Is a Software Risk Evaluation (SRE)?

- ✓ A structured, repeatable process for identifying and analyzing risks, and planning for their mitigation within a project or program
- ✓ Based Upon A Proven Interview Method
 - ✓ SEI's Risk questionnaire
 - ✓ Group Interviewing protocol
 - ✓ Focuses upon delivery and quality risks

DSDC

CUSTOMER

PARTNERS
in Quality Solutions

INDUSTRY

What Are the Benefits of SREs ?

- ✓ **Creates a forum for talking about and planning for project risks**
- ✓ **Provides decision-making information to the project manager**

DSDC

CUSTOMER

PARTNERS
in Quality Solutions

INDUSTRY

What Tools Are Used?

- ✓ The DSDC Risk Management Procedure (DSDC Process Guide, Tab B, Encl 16)
 - ✓ Risk Planning and Tailoring template
 - ✓ Standard Risk Statement Format
 - ✓ The Risk Rating Table
 - ✓ Decision Flowcharts
 - ✓ The DSDC Risk Management Plan

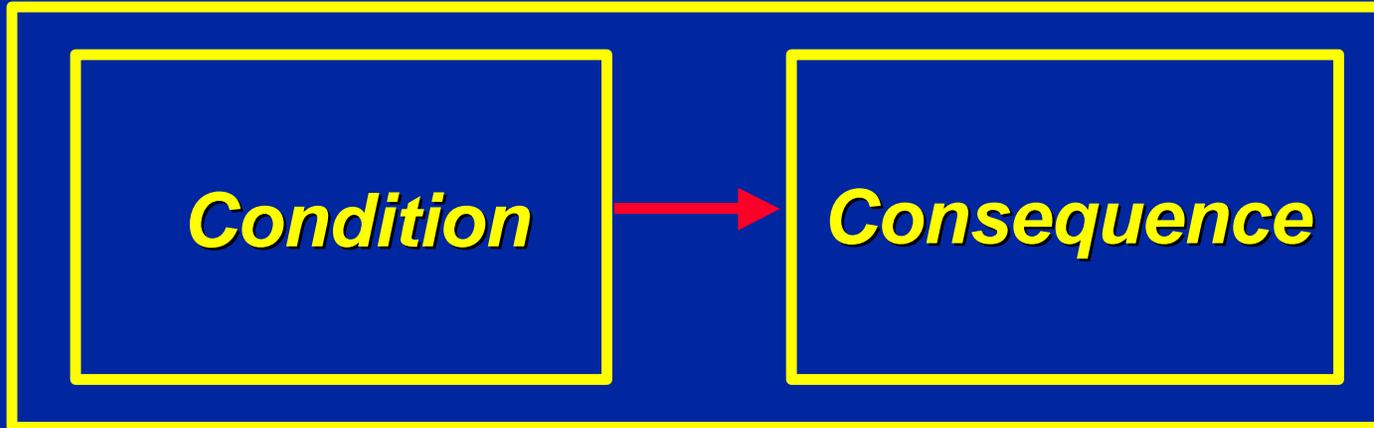
- ✓ The SEI Risk Questionnaire

When Is Risk Management Done?

- ✓ Risk Management isn't over until the project is complete
- ✓ As closure on one risk is achieved, attack another!
- ✓ "New" project risks can be identified by ANYONE at ANY TIME
 - ✓ Apply the same iterative process to all new risks
 - ✓ Project manager does analysis and planning
 - ✓ The "Top n " may change as a result

What is a Standard Risk Statement

INDUSTRY



Risk Statement

... and, as a result, ...

1. Delivery of the development system may occur after the start of the coding and unit testing phase; ...



... the schedule will slip each day the equipment is late.

DSDC

CUSTOMER

PARTNERS
in Quality Solutions

INDUSTRY

Tools: Standard Risk Statement

... and, as a result, ...

2. The requirements are ambiguous and may not be what the customer really wants; ...



... there will be conflicts and rejections during customer testing.

DSDC

CUSTOMER

PARTNERS
in Quality Solutions

Tools: Risk Rating Table

INDUSTRY

<i>PROBABILITY OF OCCURRENCE</i>		<i>SEVERITY OF OUTCOME</i>	
DESCRIPTION	FACTOR	FACTOR	DESCRIPTION
Low	1	10	Low
Moderate	2	20	Moderate
Significant	3	30	Significant
High	4	40	High

Tools: Risk Questionnaire

INDUSTRY

A. Product Engineering

1. Requirements

- a. Stability
- b. Completeness
- c. Clarity
- d. Validity
- e. Feasibility
- f. Precedent
- g. Scale

2. Design

- a. Functionality
- b. Difficulty
- c. Interfaces
- d. Performance
- e. Testability
- f. Hardware Constraints
- g. Non-Developmental Software

3. Code and Unit Test

- a. Feasibility
- b. Testing
- +

B. Development Environment

1. Development Process

- a. Formality
- b. Suitability
- c. Process Control
- d. Familiarity
- e. Product Control

2. Development System

- a. Capacity
- b. Suitability
- c. Usability
- d. Familiarity
- e. Reliability
- f. System Support
- g. Deliverability

3. Management Process

- a. Planning
- b. Project Organization
- c. Management Experience
- d. Program Interfaces
- +

C. Program Constraints

1. Resources

- a. Schedule
- b. Staff
- c. Budget
- d. Facilities

2. Contract

- a. Type of Contract
- b. Restrictions
- c. Dependencies

3. Program Interfaces

- a. Customer
- b. Associate Contractors
- c. Subcontractors
- d. Prime Contractor
- e. Corporate Management
- f. Vendors
- g. Politics