



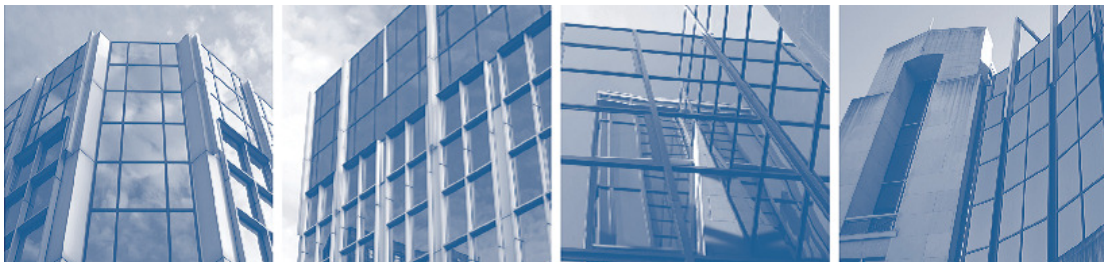
Software Engineering Institute

# Rethinking Risk Management: Additional Material #1

## *Evaluating Your Program: Streamlined Version of the Mission Diagnostic Method*

### **Mission Success in Complex Environments**

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# Introduction

This workbook provides a streamlined version of the basic Mission Diagnostic method, which is designed to enable you to quickly assess a program's potential for success based on a set of success/failure drivers. The worksheets in this workbook are based on a standard set of drivers. This set has 20 standard drivers of success and failure for software development and acquisition programs that managers or an evaluation team should generally be able to answer *and* be able to prove or justify their answers.

The workbook is divided into two parts. Part 1 provides worksheets for analyzing the value for each driver. Part 2 provides a worksheet for summarizing the results of Part 1 in a driver profile in a bar chart and provides some basic guidance for next steps.

## Part 1: Evaluating Mission Drivers

### Directions

Answer the questions using the criteria provided below. Make sure to provide the rationale for each answer in the space provided, using any relevant positive and negative points. If you are uncertain about a particular driver, make your best guess or check the box for “Equally Likely.” If you have no idea at all what the answer could be, use Don’t Know. There is an example on the next page.

### Criteria

Answer	Definition
Yes	The answer is almost certainly “yes.” Almost no uncertainty exists. There is little or no probability that the answer could be “no.”
Likely yes	The answer is most likely “yes.” There is some chance that the answer could be “no.”
Equally likely	The answer is just as likely to be “yes” or “no.”
Likely no	The answer is most likely “no.” There is some chance that the answer could be “yes.”
No	The answer is almost certainly “no.” Almost no uncertainty exists. There is little or no probability that the answer could be “yes.”
Don’t Know	More information is needed to answer the question.

**Example**

Driver Question	Answer						Rationale
	No	Likely no	Equally likely	Likely yes	Yes	Don't Know	
<p>1. Are program objectives (technical, cost, schedule) realistic and achievable?</p> <p>Consider: alignment of technical, cost, and schedule objectives; inherent technical risk; resources available</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p><b>+</b> The program team has a good sense of its requirements and responsibilities.</p> <p><b>-</b> Technical objectives do not sufficiently consider integration and functionality issues.</p> <p><b>-</b> The current set of objectives for the initial deployment phase is not documented or well-communicated to program team.</p> <p><b>-</b> Plans for the initial deployment phase are driven by the schedule and not by the need to deliver an effective operational capability.</p>

Streamlined Mission Diagnostic Method

Mission Drivers							
Driver Questions	Answer						Rationale
	No	Likely no	Equally likely	Likely yes	Yes	Don't Know	
1 Are program objectives (product, cost, schedule) realistic and achievable? Consider: Alignment of technical, cost, and schedule objectives; inherent technical risk; technology maturity; resources available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2 Is the plan for developing and deploying the system sufficient? Consider: Acquisition or development strategy; program plan; resources; funding; schedule; roles and responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3 Is the process being used to develop and deploy the system sufficient? Consider: Process design; measurements and controls; process efficiency and effectiveness; acquisition and development life cycles; training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4 Are tasks and activities performed effectively and efficiently? Consider: Experience and expertise of management and staff; staffing levels; experience with the acquisition and development life cycles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5 Are activities within each team and across teams coordinated appropriately? Consider: Communication; information sharing; dependencies; relationships; partners and collaborators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6 Will work products from suppliers, partners, or collaborators meet the program's quality and timeliness requirements? Consider: Applications; software; systems or sub-systems; hardware	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7 Is the program's information managed appropriately? Consider: Usability; confidentiality; integrity; availability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8 Does the program team have the tools and technologies it needs to develop the system and transition it to operations? Consider: Software applications; infrastructure; systems; databases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Streamlined Mission Diagnostic Method

Mission Drivers							
Driver Questions	Answer						Rationale
	No	Likely no	Equally likely	Likely yes	Yes	Don't Know	
9 Are facilities and equipment sufficient to support the program? Consider: Building; physical work spaces; support equipment; supplies; other resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10 Are enterprise, organizational, and political conditions facilitating completion of program activities? Consider: Stakeholder sponsorship; actions of upper management; effect of laws, regulations, and policies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11 Does the program comply with all relevant policies, laws, and regulations? Consider: policies; laws; regulations; standards of care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12 Does the program have sufficient capacity and capability to identify and manage potential events and changing circumstances? Consider: Risk management plan, process, and tools; schedule slack; funding reserve; risk mitigation plans; program continuity and contingency plans; opportunity management plan, process, and tools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13 Are system requirements well understood? Consider: Customer, user, and stakeholder requirements and needs; functional and non-functional requirements; operational requirements; system growth and expansion needs; technology maturity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14 Are the design and architecture sufficient to meet system requirements and provide the desired operational capability? Consider: Interfaces; dependencies; software and system architecture; operational requirements; technology maturity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15 Will the system satisfactorily meet its requirements? Consider: Functional; performance; operational; reliability; security; safety; usability; maintainability; technology maturity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Streamlined Mission Diagnostic Method

Mission Drivers							
Driver Questions	Answer						Rationale
	No	Likely no	Equally likely	Likely yes	Yes	Don't Know	
16 Will the system be sufficiently integrated and interoperable with other systems when deployed? Consider: Interfaces; applications; tools; hardware; data; technology maturity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17 Will the system effectively support operations? Consider: Business and operational workflows; support of organizational and enterprise missions; operational risk mitigation; disaster recovery, contingency and business continuity plans; technology maturity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
18 Have barriers to customer/user adoption of the system been managed appropriately? Consider: User acceptance; stakeholder sponsorship; transition to operations; user support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19 Will people be prepared to operate, use, and maintain the system? Consider: policies; procedures; training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20 Will the system be appropriately certified and accredited for operational use? Consider: compliance with policies, laws, and regulations; acceptable mitigation of risk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



## Part 2: Driver Profile and Next Steps

### Directions

A driver profile is a graphical summary of the current state of the mission drivers. Below is a partial example of a driver profile. Your driver profile shows helps you identify which drivers have an unacceptable value. In the example, assume the program manager wanted all of the drivers to have at least an Equally Likely value. In this example, only one driver had an answer better than Equally Likely Yes, indicating this program has strength in the area of process, but also has a lot of weaknesses that need improvement.

Possible next steps include addressing the weaknesses while maintaining the existing strength. Some cost-benefit analysis of alternative improvement plans will be needed to ensure the usually scarce funds and resources for improvement are effectively applied. In particular, if drivers such as Program Objectives and Plan have low scores, they are clear candidates for the first improvement efforts as any changes in objectives and plans will impact the rest of the drivers and any planned efforts to improve them.

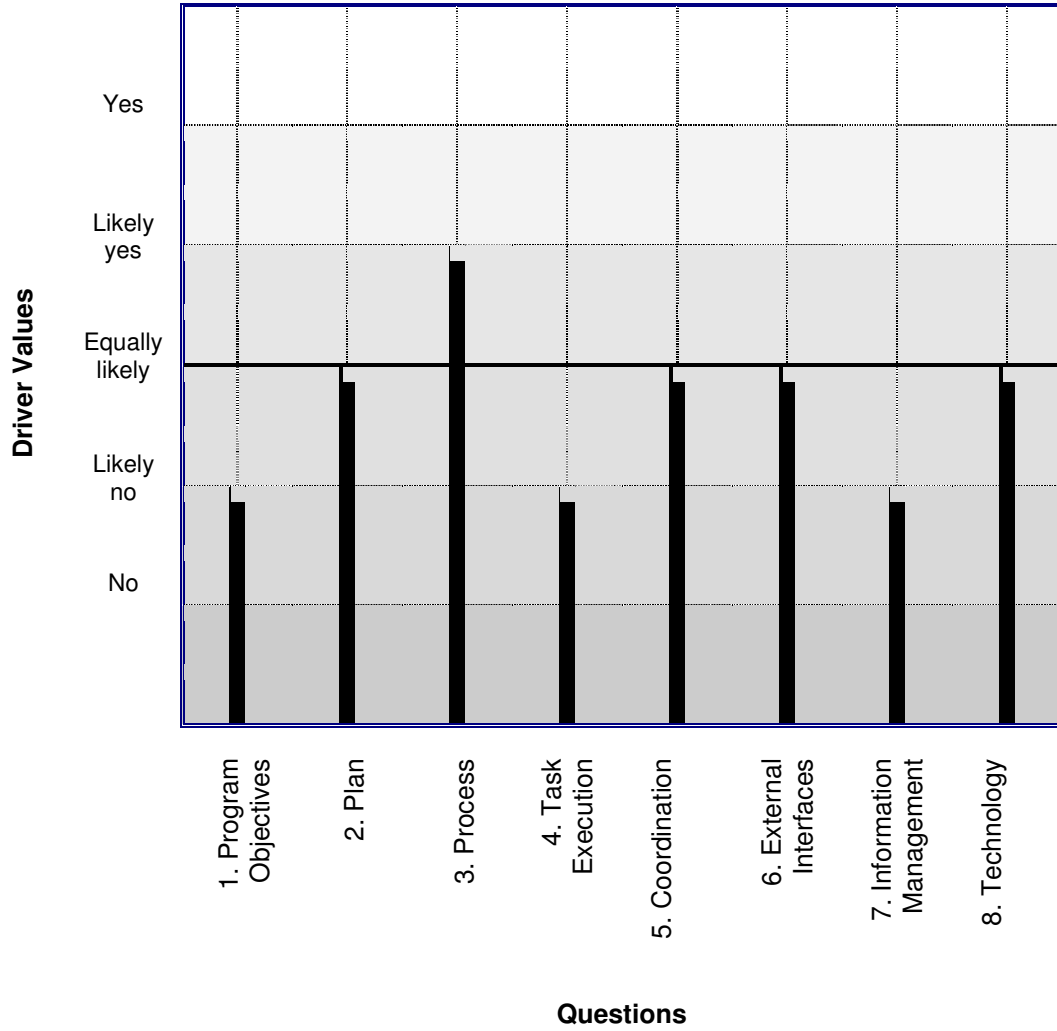
The blank driver profile worksheet is for you to use to provide a visual summary of your answers to the driver questions. Record your question answers on the graphs provided. If you marked any questions as “Don’t Know”, do not record any answers for those questions on your bar graphs. Your summary will show you, at a high level, areas in your program that may need to be improved.

On the final workbook page, you have space to record some of your next steps. Consider:

- Which drivers have values that are unacceptable?
- Which unacceptably low value drivers should be considered first for improvements?
- Which drivers represent strengths that can be used to help other drivers?

For each driver record a few notes about any actions that should be taken to improve (or sustain) the driver’s value.

### Example Driver Profile (Partial)



**Driver Profile**

<b>Driver Answers/Values</b>	Yes																				
	Likely yes																				
	Equally likely																				
	Likely no																				
	No																				
		1. Program Objectives	2. Plan	3. Process	4. Task Execution	5. Coordination	6. External Interfaces	7. Information Management	8. Technology	9. Facilities and Equipment	10. Organizational Conditions	11. Compliance	12. Event Management	13. Requirements	14. Design and Architecture	15. System Capability	16. System Integration	17. Operational Support	18. Adoption Barriers	19. Operational Preparedness	20. Certification and Accreditation
		<b>Driver Questions</b>																			

Streamlined Mission Diagnostic Method

<b>Next Steps for Drivers</b>	
<b>Driver Questions</b>	<b>Next Steps</b>
<p>1 Are program objectives (product, cost, schedule) realistic and achievable?</p> <p>Consider: Alignment of technical, cost, and schedule objectives; inherent technical risk; technology maturity; resources available</p>	
<p>2 Is the plan for developing and deploying the system sufficient?</p> <p>Consider: Acquisition or development strategy; program plan; resources; funding; schedule; roles and responsibilities</p>	
<p>3 Is the process being used to develop and deploy the system sufficient?</p> <p>Consider: Process design; measurements and controls; process efficiency and effectiveness; acquisition and development life cycles; training</p>	
<p>4 Are tasks and activities performed effectively and efficiently?</p> <p>Consider: Experience and expertise of management and staff; staffing levels; experience with the acquisition and development life cycles</p>	
<p>5 Are activities within each team and across teams coordinated appropriately?</p> <p>Consider: Communication; information sharing; dependencies; relationships; partners and collaborators</p>	
<p>6 Will work products from suppliers, partners, or collaborators meet the program's quality and timeliness requirements?</p> <p>Consider: Applications; software; systems or sub-systems; hardware</p>	
<p>7 Is the program's information managed appropriately?</p> <p>Consider: Usability; confidentiality; integrity; availability</p>	
<p>8 Does the program team have the tools and technologies it needs to develop the system and transition it to operations?</p> <p>Consider: Software applications; infrastructure; systems; databases</p>	
<p>9 Are facilities and equipment sufficient to support the program?</p> <p>Consider: Building; physical work spaces; support equipment; supplies; other resources</p>	
<p>10 Are enterprise, organizational, and political conditions facilitating completion of program activities?</p> <p>Consider: Stakeholder sponsorship; actions of upper management; effect of laws, regulations, and policies</p>	
<p>11 Does the program comply with all relevant policies, laws, and regulations?</p> <p>Consider: policies; laws; regulations; standards of care</p>	

Streamlined Mission Diagnostic Method

<b>Next Steps for Drivers</b>	
<b>Driver Questions</b>	<b>Next Steps</b>
<p>12 Does the program have sufficient capacity and capability to identify and manage potential events and changing circumstances?</p> <p>Consider: Risk management plan, process, and tools; schedule slack; funding reserve; risk mitigation plans; program continuity and contingency plans; opportunity management plan, process, and tools</p>	
<p>13 Are system requirements well understood?</p> <p>Consider: Customer, user, and stakeholder requirements and needs; functional and non-functional requirements; operational requirements; system growth and expansion needs; technology maturity</p>	
<p>14 Are the design and architecture sufficient to meet system requirements and provide the desired operational capability?</p> <p>Consider: Interfaces; dependencies; software and system architecture; operational requirements; technology maturity</p>	
<p>15 Will the system satisfactorily meet its requirements?</p> <p>Consider: Functional; performance; operational; reliability; security; safety; usability; maintainability; technology maturity</p>	
<p>16 Will the system be sufficiently integrated and interoperable with other systems when deployed?</p> <p>Consider: Interfaces; applications; tools; hardware; data; technology maturity</p>	
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<p>18 Have barriers to customer/user adoption of the system been managed appropriately?</p> <p>Consider: User acceptance; stakeholder sponsorship; transition to operations; user support</p>	
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