Program Management Tools Course, Part 2

PMT 257

Syllabus
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INTRODUCTION

The Program Management Tools Course, Part 2 (PMT 257) provides an introduction to program management tools and techniques used in a program office as an integrated product team leader. It is a follow-on course to the Program Management Tools Course, Part 1 (PMT 251) and is designed to enhance journeyman-level skills. This five-day course prepares defense acquisition professionals for work in the Program Offices and for the Program Management Office Course, PMT 352, Parts A and B.

The primary objective of the course is to:

Generate program solutions and documents using program management tools and techniques in an acquisition program scenario.

The enabling objectives to meet this primary objective are:

1. Using scenario documentation; develop a Team Charter for an Integrated Product Team (IPT) describing the team’s purpose, goals, roles, operating agreements and critical success factors.
2. Using a list of product office personnel, construct an IPT addressing both personnel availability and background/experience
3. Given market research and company data, assess technology maturity to determine technology readiness levels
4. Using product office documentation; select cost, technical, and schedule criteria to evaluate system alternatives
5. Using product cost, technical, and schedule data; evaluate alternatives to determine an order of preference
6. Given revised scenario data, re-evaluate alternatives to determine a recommended alternative
7. Given a simulated contractor’s schedule and supporting documentation, analyze them to identify errors
8. Using scenario documentation, apply risk management processes to identify and analyze risks, and propose mitigation plans
9. Given Earned Value Management (EVM) data, analyze it to determine project status
10. Provided additional EVM data, evaluate it to detect trends in contractor performance
11. Using EVM data, assess contract performance, to identify significant risks, issues, and recommended courses of action
12. Provided simulated contractor cost data and guidance, use cost estimating techniques and factors to develop a detailed cost estimate
13. Given scenario information, prepare an information issue paper to document results of issue analysis

14. Given a project risk occurrence, apply problem solving tools to determine a recommended course of action

15. Using results of issue analysis, develop a decision briefing to justify a recommended course of action

16. Given sample risk management software tools, compare their features to determine their advantages and disadvantages

17. Given a scenario, apply project management tools to generate project documentation

LEARNING ENVIRONMENT

This course uses a unique Facilitated Online Learning Environment (FOLE) approach. The class is conducted using a combination of telephone audio bridges and internet sites to facilitate real time instructor-to-student and student-to-student interaction. The telephone audio bridges provide the capability for class-wide discussion and student team discussions. The internet sites provide access to the exercise instructions, templates, and supporting documents, access to team deliverables, as well as the capability to display course documents for real time viewing and data entry.

The student-centered environment places the primary responsibility for learning with the student. The learning methodology consists of a series of scenario-based exercises performed by student teams, and subsequent class-wide discussion of the learning objectives associated with each exercise.

Through the creation of team deliverables for the scenario-based exercises, the dynamic student interaction emphasizes the importance of developing effective integrated product teams, using critical thinking skills to develop solutions to representative program management issues, and completing typical program management tasks.

CURRICULUM STRUCTURE

The course uses a scenario based on a fictitious medium-sized military truck, the M1235 Medium Light Tactical Truck (MLTT). The scenario primarily focuses on integrating a new engine into the truck, proceeding through the Engineering and Manufacturing Development (EMD) phase of the acquisition framework, and includes 14 exercises each performed by student teams covering the following areas:

- Integrated Product Team (IPT) formation
- Team charter
- Technology maturity
• Evaluating alternatives
• Schedule analysis
• Risk management
• Earned Value Management (EVM)
• Cost estimating
• Problem solving tools and techniques
• Risk management software tools

During the five-days of the course, students assume various roles, such as IPT leader, IPT member, a subcontractor team, and a collaborative government program office-prime contractor team, acquiring valuable knowledge and skills necessary to execute typical program management tasks.

These areas are examined from a program management perspective with emphasis placed on the interrelationships required for effective team performance within the acquisition management framework.

**CLASS EXERCISES**

**Exercise 1.1, Engine IPT Formation:** The student teams use a list of fictional personnel, Product Manager (PM) guidance, and product office organization chart to determine the functional areas necessary for the Engine Integrated Product team (IPT), and then select the personnel to fill those functional roles, with the goal of balancing availability of personnel with experience in their respective functional areas.

**Exercise 1.2, Team Charter Development:** Student teams develop portions of a representative team charter, including purpose, objectives, roles, operating agreements and critical success factors. In addition to providing insight into the content and benefits of a charter, it also allows the students to develop some actual roles and ground rules (operating agreements) to enhance their performance in the course in subsequent activities.

**Exercise 1.3, Technology Readiness:** Teams use information from four fictional engine manufacturers to evaluate their technology maturity and assign a Technology Readiness Level (TRL) to each.

**Exercise 1.4, Engine Evaluations:** Teams use the fictional engine manufacturer data and a fictional market research report to evaluate the four engine manufacturers based on cost, technical, and schedule criteria to determine a rank ordering of the manufacturers. A future increment of the vehicle (the M1235A3) will incorporate a new engine to increase fuel efficiency and improve engine reliability, maintainability and availability.
Exercise 2.1, Engine Evaluations – Part 2: Teams are presented with new scenario information. The engine manufacturer for the current version of the MLTT (the M1235A1), intends to cease their Defense Products Division operations at the end of the current five years of M1235A1 production runs, leaving the product office without an engine for the next increment of the vehicle (the M1235A2). Based on the new information re-evaluate three of the four engine manufacturers (the fourth is eliminated from consideration due to its level of technology readiness) to determine the rank order for integrating a new engine in the M1235A2 (instead of waiting until the M1235A3 increment). Teams develop a briefing, using a template provided, to describe the strengths, weaknesses, and critical risks of each engine, a summary of their findings and their final rank ordering.

Exercise 2.2, Schedule Analysis: Teams analyze a simple version of a contractor schedule top determine errors and areas of concern. Teams are provided with documentation from the contractor, guidance from various product office managers, a top level product office schedule (program structure chart) and a Work Breakdown Structure (WBS).

Exercise 2.3, Risk Management: Teams identify potential risks for the engine development and integration, analyze the risks in terms of likelihood and consequence, and develop a potential mitigation strategy for each risk, and complete Risk Identification Forms for each risk. Teams are provided with a fictional Risk Management Plan.

Exercise 3.1, Program Health – Part 1: Teams analyze various contractor and product office generated documents to determine program health at a point in time. Documents include: Integrated Program Management Report (IPMR), Integrated Master Schedule (IMS), six-period summaries, trend charts, and Technical Performance Measures (TPMs). There is no deliverable for this exercise; it is used to familiarize the students with the different forms of data, and how to sort the data to develop a “picture” of the program’s health.

Exercise 3.2, Program Health – Part 2: Teams continue to analyze various contractor and product office generated documents to determine program health at a later point in time. They determine the program’s technical, schedule and cost status; the product office’s best case, worst case and most likely Estimates at Completion (EACs); calculate a To Complete Performance Index (TCPI) for each of their EACs; and determine any risks, issues, and courses of action based on their findings. Teams compile a briefing to present their findings.

Exercise 3.3, Program Health – Part 3: Teams continue to analyze various contractor and product office generated documents to determine program health at a later point in time. They determine the program’s technical, schedule and cost status; the product office’s best case, worst case and most likely Estimates at Completion (EACs); calculate a To Complete Performance Index (TCPI) for each of their EACs; and determine any risks, issues, and courses of action based on their findings. Teams compile a briefing to present their findings.
Exercise 4.1, Contractor Cost Estimating: Teams assume the role of an engine subcontractor team developing a cost estimate to support the company’s proposed bid for the upcoming Low Rate Initial Production (LRIP) contract. Teams use fictional data provided and apply various cost estimating factors to determine the total cost estimate, and subsequently the price the company will propose.

Exercise 4.2, Problem Solving: Each team is provided with a different risk that has occurred, and is now an issue that must be resolved. Teams use a problem solving process and problem solving tools to analyze the issue, generate potential alternatives to resolve it. They create an Issue paper to present their findings. They subsequently decide on a recommended course of action and develop a briefing to present their findings, as well as a depiction of how they used the problem solving tools they chose to use.

Exercise 4.3, Risk Management Software Tools: Teams examine five sample risk management software tools, and decide which one they would prefer to use in their work environment. They present their findings in a short briefing.

Exercise 5.1, Course Recap: Each team is assigned a different exercise to complete which revisits a topic from earlier in the course. This exercise is used to help review course material for the final exam.

Graduation Requirements

Students are assessed via a 25-question, open book, individual exam administered online (via the Blackboard course web site) on the final day of the class. The exam counts as 100% of the final grade.