



Global Knowledge™

Expert Reference Series of White Papers

Project Management Network Diagram: A Tool for Understanding the PM Life Cycle

Project Management Network Diagram: A Tool for Understanding the PM Life Cycle

Brian Denis Egan, Global Knowledge Instructor, MBA, PMP



Overview

Fully understanding the Project Management Institute's (PMI®) approach to project management can be difficult. This is not because of the complexity of the material. The difficulty arises from having a body of knowledge that is structured for referencing, not learning.

PMI divides the tasks associated with project management into 44 processes. There are also 44 different management activities that must be completed, in a specific order.

These activities, or processes, are well described by training manuals. Unfortunately they are discussed in isolation from each other. As a consequence it is very hard to develop a comprehensive understanding of the relationships between the many processes.

If you are new to PMI, you need a summary document that provides an overview and introduction to the big picture. Once you can see the forest, it is possible to study individual trees.

Fortunately, if you are trying to prepare for the Project Management Professional (PMP®) exam, such an overview is now available through Global Knowledge.

The Project Management Network Diagram (PM Network Diagram) provides a visual illustration of the project management life cycle (in terms of the chain of events that take place in a project).

Study Time

As a graphical presentation of the project management life cycle this diagram summarizes a large portion of the Project Management Body of Knowledge (PMBOK®). It can radically reduce the time required to prepare for the PMP exam.

In effect, the PM Network Diagram does for the learning process what a network diagram does for projects. It provides a visual aid that simplifies the explanation and discussion of project management stages, their relationships, and their timing.

Time Well Spent

When preparing for an exam, you will want to make the most efficient use of study time. In order to be efficient, it is necessary to know "what you need to know".

There are many study guides that review what you need to know in 500 pages. Unfortunately they do not provide effective overviews or clarify whether every detail needs to be memorized.

The PMP Network Diagram provides the overview that study guides lack. On one 8.5" x 11" page, the PM Network Diagram summarizes the knowledge needed to answer 50 – 70 percent of questions on the PMP exam. The diagram provides an overview of what you need to know.

Of course it is still necessary to learn what you need to know, but this is greatly simplified by this roadmap.

Topics Covered

In this white paper you will be introduced to:

- Complications in studying for the PMP
- The PM Network Diagram
- Study tips and techniques

This white paper is essential reading if you are considering taking the PMP exam. It will save study time by clarifying what you need to know.

Background

The PMP Exam is based on the Project Management Body of Knowledge. The PMBOK® was created and is maintained by the Project Management Institute (PMI).

The PMBOK® is a compilation of the PMI's know-how. It is its dictionary of terms and practices. It is a reference tool for anyone wanting to lookup a PMI term or procedure. The PMBOK® documents PMI's version of best practices in the field of project management.

The PMBOK® is not a study guide. It is not a training manual. It is not very pleasant reading. Anyone who has struggled through the PMBOK® deserves a medal.

Complications with Studying for the PMP Exam

The biggest mistake that people make when preparing for the PMP exam is to treat the PMBOK® as a training manual. The PMBOK® is not a training manual. It is a reference tool. Imagine trying to learn English by reading a dictionary – pretty tricky. Anyone who "studies" the PMBOK® is wasting a lot of time.

Another common error is misinterpreting the nature of the PMP Exam. Is it not a test of project management knowledge. It is a test of your knowledge of PMI's terminology.

Seventy years of project management experience will not get you a passing grade on the exam. The exam does not test your general knowledge; it tests your specific knowledge of PMI's version of project management and its terminology.

The point is that actual project management experience might even work against you. For example, if you do not use the term "scope definition" in the same way as PMI, you are going to give incorrect answers. You must know its terms and use them its way.

In order to pass the exam you need to know how to think like the PMI.

What Is in a Word

In order to understand PMI terminology you must understand how the PMI breaks up a project into separate activities, or processes, and how these processes interrelate.

There are 44 processes. Each one relates to a variety of others. You need to know what the various relationships are. Learning these relationships is not easy--not because they are particularly complicated, but because of the way the relationships are explained. (More on this later.)

A Moving Target

The 2000 PMBOK® (version 2) had only 39 processes (activities necessary to complete a project). The 2004 PMBOK® (version 3) has 44 processes. This means that the PMI has changed its terminology. It has rearranged, renamed and added processes (activities) to reflect an evolving vision of best practices in the field of project management. In so doing they have changed the vocabulary of project management.

If you are perfectly familiar with the terminology used in version 2 of the PMBOK® you could not pass the new PMP exam, which is based on version 3 of the PMBOK®. Why? Because you do not know the new terminology. Vocabulary is what the PMP exam is testing.

Training Manuals

There is a big weakness in the way PMP Exam prep training manuals are structured. Of the seven that I have reviewed, all mimic the structure of the PMBOK. In other words, they attempt to teach you how to write in English by reviewing the contents of an English dictionary, step-by-step.

Figure 1 (on the next page) is from the 2004 PMBOK®. This figure is central to understanding PMI terminology. It relates the 44 processes (activities) to Project Phase and Knowledge Areas by putting them into columns and rows respectively.

	Initiating	Planning	Executing	Controlling	Close
Project Integration Management	Develop Project Charter Develop Preliminary Project Scope	Develop Project Management Plan	Direct and Manage Project Execution	Monitor and Control Work Integrated Change Control	Close Project
Project Scope Management		Scope Planning Scope Definition Create WBS		Scope Verification Scope Control	
Project Time Management		Activity Definition Activity Sequencing Activity Resource Estimating Activity Duration Estimating Schedule Development		Schedule Control	
Project Cost Management		Cost Estimating Cost Budgeting		Cost Control	
Project Quality Management		Quality Planning	Perform Quality Assurance	Perform Quality Control	
Project HR Management		Human Resource Planning	Acquire Project Team Develop Project Team	Manage Project Team	
Project Communications Management		Communications Planning	Information Distribution	Performance Reporting Manage Stakeholders	
Project Risk Management		Risk Management Planning Risk Identification Qualitative Risk Analysis Quantitative Risk Analysis Risk Response Planning		Risk Monitoring and Control	
12. Project Procurement Management		Plan Purchases and Acquisitions Plan Contracting	Request Seller Responses Select Seller	Contract Administration	Contract Closure

Figure 1: Chart of Process Groups and Knowledge Areas (2004 PMBOK®)

How, you might ask, does this chart aid in understanding? That is a good question!

Like the rest of the PMBOK®, the figure above merely lists the processes. It is not a useful study guide or training tool.

PMBOK Structure

What the table does do is explain how the PMBOK®, and related PMP training manuals, are structured. They follow the pattern set out in the table.

The PMBOK® and training manuals discuss processes by row (knowledge area) rather than by column (phase). The explanations of processes, therefore, are not given in chronological order.

Let's continue with the dictionary analogy. In the PMBOK®, the first letter of the alphabet is not "A" but "Project Integration Management". This is the first knowledge area and is the first row in figure 1. The second letter in the PMBOK® alphabet is not "B" but "Project Scope Management", and so on down the left hand column.

The PMBOK® is structured in “alphabetical” order. Processes are discussed in alphabetical sequence. First, all of the “As” are described then all the “Bs”.

The discussions are not literally alphabetical. Instead they are grouped by knowledge area (rows in the table). The PMBOK®, and all of the training manuals that mimic it, provide a methodical discussion of processes in the order that they appear in the table, moving from left to right, top to bottom.

That is a perfectly reasonable structure for reference books and a terrible structure for training manuals.

Why? It is because an “alphabetical” discussion of the processes does not explain their chronological relationships. And you must understand the chronological relationships in order to pass the exam. It is like being given the definition of 44 words, a list of grammar rules, and then being asked to write paragraphs. It is possible to learn English from a dictionary, but it is not easy.

Enter the PM Network Diagram

What is needed is an illustration of the chronological relationships between the 44 processes. That is the role of the PM Network Diagram (found at the end of this document).

As an alternative to printing the diagram, you can view it on a computer and make a hand-drawn version of your own.

Understanding the Diagram

The PM Network Diagram is an expansion of figure 1. It includes all the same information and goes several steps further. The 44 processes are listed. In addition, relationships between processes are illustrated.

Figure 2 below is a small fraction of the PM Network Diagram. It is the top-left corner. This corner will be used to illustrate how to read diagram.

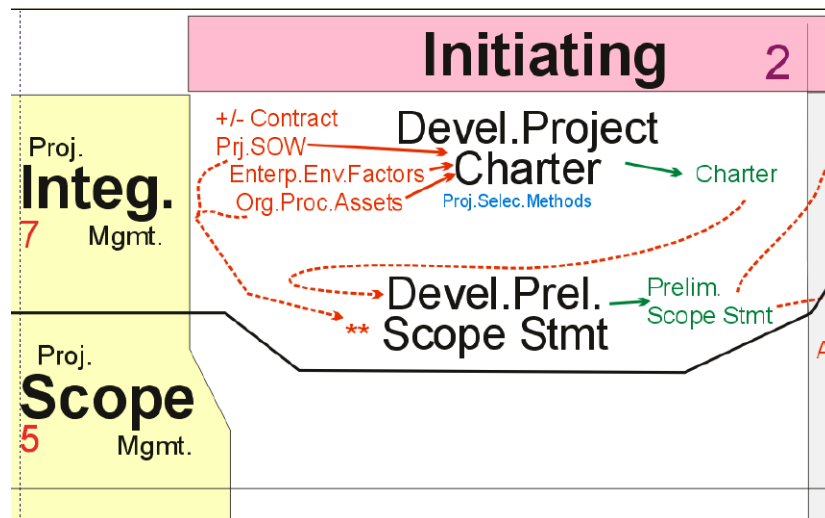


Figure 2: Top left corner of the PMP Network Diagram

Shown in figure 2 are headings for the Initiation column as well as the Integration and Scope rows.

There are two processes listed in the cell at the intersection of Initiation and Integration. These processes, shown in black, are “Develop Project Charter” and “Develop Preliminary Scope Statement”.

Information in black is the same as it appears on the PMBOK chart shown in figure 1. Red, Green, and Blue printing have been used to indicate supplemental information.

In red are Inputs to a process. Inputs are the information that must be available in order for a process to be completed.

In blue (under the process name) are Tools and Techniques. These are the steps and practices that are necessary to complete a process.

In green are the Outputs. Outputs are the reason that a process is performed. They are the purpose of a process.

Arrows are used to show relationships between processes. The outputs of one become the inputs of another.

What a process needs (inputs), how it is performed (tools and techniques), and what the point is (outputs) are what you need to know to pass the PMP Exam.

The PM Network Diagram summarizes and illustrates what the PMBOK and training manuals take 500 pages to say.

How to Use the Diagram

The PM Network Diagram is an overview. Only the important input, output, and tools and techniques are listed.

Anyone preparing for the PMP Exam needs to commit the diagram to memory.

Being able to memorize the diagram means that you will be able to answer about 50 – 70 percent of the questions on the exam.

The other 30 – 50 percent of the exam relates to specifics of the tools and techniques. That is, things like network diagrams and earned value analysis.

But mostly, you need to know how PMI believes projects should be run and the terminology they use to describe it. That is what the PM Network Diagram is designed to help you learn.

Tips for the Exam

All of the training manuals say that the PMP Exam is not a memory test. This is not strictly true.

You need to memorize the PM Network Diagram or your own version of the same thing. You also need to truly understand how the 44 processes interrelate. You are not going to be asked to regurgitate lists. You are going to be asked what-if questions.

Exam questions are situational. To answer them you need to know, at any given point in a project, what information PMI expects you to have. For example, imagine a scenario where you are told that Activity Sequencing has just been completed. Can you attend a meeting and bring along a budget estimate? No. According to PMI's sequence of events the budget has not yet been developed.

Situational questions can only be answered if you understand the sequence of events that are presumed to take place in project management. The sequence is summarized in the PM Network Diagram.

Three Miles Wide

The PMP Exam covers a vast amount of material. The exam is three miles wide, but fortunately only one inch deep on any particular subject. It is a vocabulary test. There are a 1,000 terms, of which you need to have a superficial (one inch deep) understanding.

When preparing for the exam, do not get bogged down on any particular subject (like network diagramming). Learn a little bit about all of them. That is what the exam prep training manuals are good at: introducing the huge array of terminology that needs to be understood. (They just do not tie it all together very well.)

PMI Heaven

Remember that you are not being tested on general project management knowledge. When taking the exam, put on your PMI hat. Answer all questions as if you were a PMI devotee and believe every thing the PMBOK® says.

The exam presumes that you are in project management heaven. Do not let knowledge of the real world bias your answers. Always assume (unless told otherwise) that you are working within the ideal project management environment. All the time and resources you need are available to do whatever the PMI thinks needs to be done.

Conclusion

The PMP Exam is difficult, but not because of the complexity of the material. It is because of the breath of material and because the body of knowledge is so badly structured for the purposes of study.

Save yourself a lot of study time. Use the PM Network Diagram as a measuring stick for what you need to know and whether or not you know it.

Don't worry if the first five questions on the exam are totally incomprehensible. Everyone reports the same reaction. The test is designed to unsettle you. Do not let it. If a questions seems too difficult just skip it.

Take the exam early. Treat it as a study tool. Be prepared to fail the first time. Use the experience to determine what subjects to concentrate on. You will receive a report that outlines strengths and weaknesses. Let the report tell you what to study. Then take the exam again after having targeted those areas.

Good luck!

Learn More

Learn more about how you can improve productivity, enhance efficiency, and sharpen your competitive edge. Check out the following Global Knowledge courses:

PMP Exam Prep Boot Camp

Project Management Essentials

IT Project Management

For more information or to register, visit www.globalknowledge.com or call 1-800-COURSES to speak with a sales representative.

Our courses and hands-on exercises offer practical skills and tips that you can immediately put to use. Our expert instructors draw upon their experiences to help you understand key concepts and how to apply them to your specific work situation. Choose from our more than 700 courses, delivered through Classrooms, e-Learning, and On-site sessions, to meet your IT and management training needs.

About the Author

Brian Egan is CEO of a manufacturing company (Book Box Company) and a management consultant. He has written three professional development manuals and several white papers on aspects of management science. Since 2000, Brian has been a part-time instructor for Global Knowledge within the Project Management and Professional Skills product line.

©2005 Brian Denis Egan

