

The PMBOK® Guide Third Edition: An analysis

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Abstract

This article compares the changes from the *PMBOK® Guide 2000 Edition* to the *PMBOK® Guide Third Edition* (2004 Edition). Its purpose is to review the historical perspective of the Guides with reference to their process inputs and outputs. In particular, there have been conceptual changes that should be explained for the benefit of the project management community.

As a result of this research, as well as making suggestions for future editions, we strongly recommend improvements to the 2004 Edition by way of an amended update. This should be done in two stages. The Project Management Institute should move to correct invalid figures as First Stage Improvements, to avoid harm to the reputation of the Guides. This should be followed closely by a Second Stage project of improvements along the lines described in this paper.

Background

A review of the past shows that the breakthrough in project management started almost a quarter century ago with the publication of the Ethics, Standards and Accreditation (ESA) Report in 1983.ⁱ This was followed by the publication of a project management body of knowledge (PMBOK) in 1987 developed by a number of dedicated professionals.ⁱⁱ A few dedicated professionals continued to build on this work resulting in the publication of A Guide to the Project Management Body of Knowledge (The PMBOK® Guide) in 1996.ⁱⁱⁱ Since this more advanced work was completed, its basic concept continues to develop with the support of thousands of project managers.

So far, the project management community has embraced the changes to the system for managing a project. The upgrade from ESA to the 1996 Edition gained the project management community an improved concept, structure and contents. Four years later, the 2000 Edition replaced the 1996 Edition. This upgrade represented a smooth transition by focusing on a better explanation of the 1996 Edition with only one substantial change relating to the Project Risk Management knowledge area. However, the magnitude of changes from the 2000 Edition to the 2004 Edition needs a more thorough analysis to assess their effects.

Early in our reading of the 2004 Edition we observed that the sets of process inputs and outputs and associated text is substantially different from the 2000 Edition with significant changes to both contents and context. As a result, we found it very challenging to make this detailed study, particularly in view of conceptual changes that should be explained and, in our view, eventually improved. Given that the new document has been already published, we suggest that such improvements should be accomplished in two stages: The first stage should focus on the modification of several figures, while the second stage should be an early analysis of problematic solutions and preparation for the next edition. However there have also been many improvements.

To approach the problem we identified how each component relates to other components within the Guide. This provided a clear context for each component and was a key step to developing detailed material for analysis of each component, process and process group. The ultimate result was a better understanding of both the 2004 Edition and the preceding edition leading to identification of problem areas and recommendations for improvement.

We recognize the possibility of resistance to change from those who have already spent so much time on the latest update of the Guide. Nevertheless the Project Management Institute should initiate a discussion and further study to achieve gradual progress towards an improved document. Current literature and control mechanisms should also be taken into account to help filter potential improvements.

Introduction

Before starting work on this paper, we made a general review of the 2004 Edition. During this review we observed many good things, but also changes that need additional explanation.^{iv} Accordingly, we developed a perspective that reflects the upgrade from the 2000 Edition. At the output/input level, implicitly at the process and the process group levels, the 2004 Edition differs substantially from the 2000 Edition. We suspect that the extensive changes and a lack of methodologies to control these changes may have given rise to some problematic differences found in this latest edition. It is evident that these differences have changed the historical perspective and understanding of the 2004 Edition.

From the evidence we provide in the Findings section of this paper, we concluded that the 2004 Edition should be improved. Therefore, we developed a structure and approach for doing this that requires the definition of a set of new goals and objectives for this improvement. This should be solved in two stages:

- The primary objective of the first stage should be collection, classification and correction of minor errors, e.g., modification of several figures. The results of this stage could be communicated to the project management community through the PMI web site.
- The primary objective of the second stage should be a clear historical perspective leading to a better explanation of its predecessor edition, unless it proves that the 2004 Edition is a breakthrough. A result of this understanding and tracking of the historical perspective of the Guide will be an increased confidence in the latest document. In fact, this stage should be an early analysis of the current edition with a view to preparation of a new edition in years to come.

For further details, see the Findings section of this paper.

Our approach

In our approach we used the same methodology we adopted in analyzing the 2000 Edition. This methodology shows how process analysis can be simplified if process relationships are presented in terms of process inputs and outputs.^v Doing this opened the door for a wide analysis of the context of inputs and outputs.

The assessment of context was achieved by answering a variety of questions related to each input and output, such as:

- Can we differentiate each component?
- Is this set of components sufficient to continue to the next process?

- Do we need all listed components for a particular input set?
- Is it necessary to generate all listed components for a particular output set?
- Do we need all relationships listed for a particular component?
- Do we need to relate a particular component with some other process?
- What other outputs can be generated with the same set of inputs?
- What can be reduced, grouped, removed, introduced, etc., to make a process acceptable?

Consequently, knowing the context of inputs and outputs, it was possible to develop a sequence of outputs/inputs and also to complete a sequence for processes and process groups defined in the 2004 Edition.

An important part of the methodology was to reveal how feed forward and feed back exchanges of information take place between process groups. Understanding how information is constantly exchanged between process components was crucial to determine how each component can be updated.

A source methodology for establishing relationships, sequences and updating procedure for components of the latest Guide, was the network planning technique. Special attention has been given to adopting a set of rules for coping with a particular situation.

Finally, we have made a statistical examination of events to indicate the magnitude of some of the changes between different editions of the various Guides.

Findings

As a result of the study, we discovered that changes included into the 2004 Edition have deviated from the historical perspective of the PMBOK® Guide. Consequently, the changes do not help us to better understand the previous 2000 Edition. For example, textual and conceptual changes include:

- Text volume of the 2004 Edition has increased 68% in comparison to the 2000 Edition (see Table 2)
- The 2004 Edition introduces content changes at the output/input level. For example, the added text describes changed process content and context compared to preceding editions. As evidence:
 - i. The increased number of inputs has changed the contents and context of input process sets. Implicitly, this changes the content and context of the output process sets. As a result, none of the 2004 Edition input sets are the same as in the 2000 Edition. And only three sets of outputs are the same in both editions (see Tables 1 & 2)
 - ii. With the number of outputs increasing by 60% from the previous edition, a real problem has arisen in the restructuring of the sets of output processes. As a result of restructuring we find ninety-eight reappearances of outputs with the same name, more than four times those in the previous edition. Out of all outputs in the 2004 Edition, 55% are repeated outputs that are created with different sets of inputs, implying that in practice they are not the same, but different.
- The 2004 Edition introduces conceptual changes compared to preceding editions of the Guide. This implies a changed understanding of the whole structure. As evidence:
 - iii. A powerful output/input concept that has been consistently applied in preceding editions assumes that an output created in an earlier process is used as an input in a later process

or processes. For example, in the 2000 Edition, the component "Project plan" is created by taking the results of other planning processes and putting them into the plan. However, in the 2004 Edition, many processes from the Planning Process Group already contain "Project management plan" as an input, e.g., Input 5.1.1.5 (Project management plan).^{vi} The output from that process flows into Process 4.3 (Develop Project Management Plan) to take a part in generation of Output 4.3.3.1 (Project management plan).^{vii} This results in an invalid process loop.

- iv. The 2004 Edition also uses other output/input approaches that make the sequence difficult to follow. For example, an output that has been generated for the first time should not have the suffix "updates", e.g., Output 7.1.3.4 Cost management plan (updates).^{viii}
- v. If a component has to be used as an input, it must be generated as an output in a preceding process or in a previous iteration of a subsequent process. However, there are inputs that may not be ready to be used as inputs, e.g. Input 7.2.1.8 (Contract).^{ix} The component "Contract" cannot be used here as an input because "Contract" is generated as an output in Process 12.4 (Select Sellers).^x This process is a part of the Executing Process Group while Process 7.2 (Cost Budgeting) is a part of the Planning Process Group.^{xi} Therefore, "Contract" cannot be an input to Process 7.2 (Cost Budgeting).
- vi. If a component is to be used as an input, it must first be generated in full as an earlier output. However, there are partially accomplished outputs that cause invalid process loops. For example, Input 6.4.1.8 (Project management plan) should not contain suffix "Activity cost estimates" at this time. This specific content of "Project management plan" passes from Process 6.4 (Activity Duration Estimating) to Process 6.5 (Schedule Development) to Process 7.1 (Cost Estimating) and back to Process 6.4 (Activity Duration Estimating).^{xii} To develop Output 7.1.3.1 (Activity cost estimates) we need Input 7.1.1.6 (Project management plan), which contains suffix "Schedule management plan". This input comes as an Output 6.5.3.8 (Project management plan) from Process 6.5 (Schedule Development). Finally, to develop this output we need Input 6.5.1.8 (Activity duration estimates), which is developed as an output of Process 6.4 (Activity Duration Estimating). There is also the case where a process contains the same components within input and output, e.g., the component "Deliverables" from Process 4.6 (Integrated Change Control).^{xiii}

Recommended first stage improvements

As a result of the foregoing, the 2004 Edition should be improved in two stages. First stage improvements should focus on correction of lesser deficiencies, e.g., correction of several figures. This stage should not deal with any conceptual or textual modification, which should be tackled from a systems view in the second stage.

- The 2004 Edition contains several figures that should be modified on the following basis:
 - vii. Figures should present only necessary information and nothing more. For example, Figure 3-4 contains an excessive number of relationships that should be deleted to make this figure useful.^{xiv} If we study process relationships at the output/input level, we can find out that this figure should not contain feed back relationships from the Planning Process Group to the Initiating Process Group. This is because there is no output from the Planning Process Group to feed back as an input to the Initiating Process Group.^{xv}

- There are other relationships in this and other figures that can be deleted.
- viii. The figures should be more reliable. For example, Figure 3-7 shows that Process 6.5 (Schedule Development) does not have an output that feed as an input to other processes within the Planning Process Group.^{xvi} However, if we analyze relationships at the output/input level we find that Output 6.5.3.1 (Project schedule) goes as an input to Process 7.2 (Cost Budgeting).^{xvii} There are other relationships in this and other figures that are substantial and have to be shown.
 - ix. Figures should be simpler. For example, Figure 4-2 is loaded with lists of outputs/inputs that are related to the Project Integration Management knowledge area.^{xviii} As those lists do not help explain this figure, they should be deleted, or better, reduced to a list of outputs that make direct relationships to succeeding processes. If we look at outputs from Process 4.4 (Direct and Manage Project Execution), we could get the impression that relationships between processes 4.4 (Direct and Manage Project Execution) and 4.5 (Monitor and Control Project Work) have been established throughout the listed outputs. However, if we study those processes at the output/input level, we find that relationship between processes 4.4 and 4.5 has been achieved only through Output 4.4.3.7 (Work performance information) and eventually through outputs 4.4.3.2 (Requested changes) and 4.4.3.1 (Deliverables). Other outputs from the list, from 4.4.3.3 (Implemented change requests) to 4.4.3.6 (Implemented defect repair), relate as inputs to Process 8.2 (Perform Quality Assurance).^{xix} There are other relationships in this and other figures that share similar characteristics.
- The 2004 Edition contains figures where many entries can be included, or excluded because they show a very narrow difference between incidental and usual application. There are some important reasons to do this:
 - x. Figure illustrations should be reduced to only substantial relationships that can be supported by text or can be proved at the output/input level. For example, let us have a look at Figure 3-8.^{xx} The Executing Process Group shown in this figure contains relationships to all other process groups. If we study process relationships at the output/input level, we cannot find any direct relationships from the Executing Process Group to the Planning Process Group.^{xxi} This is because feed back information from the Executing Process Group to the Planning Process Group has been directed throughout the Monitoring and Controlling Process Group, i.e., "updated and revised through the Integrated Change Control process".^{xxii} There are other relationships in this and other figures that should contain distinctive and provable relationships only.
 - xi. There should also be more consistency between figures. For example, Figure 3-6 and Figure 4-2.^{xxiii} If we look at the Initiating Process Group we can see that this process group has feed back relationships with the Executing Process Group. However, if we look at the Project Integration Management Process Flow Diagram, we do not see a drawn or a textual specification at the output/input level that feeds back from the Executing Process Group to the Initiating Process Group. There are other relationships in those and other figures that should be modified to achieve consistency between figures.

Second Stage Improvements

Second stage improvements should focus on changes that look at the PMBOK® Guide as a framework for the design of project management systems. Therefore, a new edition should be:

- Simple, that can be assimilated by a newcomer to the project management profession
- Reliable, that can be accepted by the average project management professional
- Sufficient, that can serve as a guideline for future studies and developing details for the PMBOK® Guide
- Flexible, that can accept new knowledge areas with corresponding processes and components
- Controllable, that can easily assess the results of deletion, modification and addition of any entries

In this stage we believe that an increased number of processes and components for existing knowledge areas does not solve the 2004 Edition's problems. Developing the contents of other PMI standards publications, derivative works or other books detailing the intent of the PMBOK® Guide should help to do this.

- By attempting to include all interactions, the 2004 Edition has introduced some concepts that become a negation of interactions. Such concepts operate in ambiguous terms that cannot help but turn questions into arguments about the interactions, e.g., Figure 3-4.^{xxiv} There are several reasons why such concepts should be changed:
 - xii. More arguments should be presented about why the simple and practical concepts in previous editions were replaced by more complicated concepts that do not improve the clarity of the latest Guide over previous editions. For example, the earlier concept of process group interactions of Figures 3-1 and 3-3 of the 1996 Edition^{xxv} and Figures 3-1 and 3-3 of the 2000 Edition^{xxvi} have been replaced with the new concept shown in Figure 3-2 and Figure 3-12.^{xxvii} The earlier concept can be proven at the output/input level because relationships between process groups are clear, realistic and encompass almost all cases. However, the new concept is difficult to analyze from an output/input aspect because the relationships are ambiguous and therefore lack sense. We need to revert to preceding editions.
 - xiii. The backbone of the second stage improvement should be five process groups and process group interactions that have been applied to the PMBOK® Guide 1996 Edition and the PMBOK® Guide 2000 Edition. The design and description of process interactions, including feed back loops between processes, must be consistent with interactions between process groups (see subparagraph xi above).
 - xiv. At the component level, we must know that a component progresses within a knowledge area, from the first process to the next process, from the first process group to next the process group. Therefore, during a particular iteration, a component from a later process or later process group cannot be used in an earlier process or earlier process group. If a certain output is used as an input by other knowledge areas, then a knowledge area that receives the input must belong to the same or later process group (see Findings section, third bullet).
 - xv. Updates should be assumed as an ongoing process of progressive iteration, which can affect any inputs and outputs. Updates start from the first phase, first step and first iteration within the Initiating Process Group to the last phase, last step and last iteration within the Closing Process Group of the project. Therefore, all suffixes (updates) should be removed from the document. Otherwise we must determine why some outputs have suffixes (updates) and others do not. For example, the component "Project scope management plan" has direct progressive updates throughout several processes^{xxviii} while the component "Risk management plan" has only indirect update throughout output "Risk register (updates)".^{xxix}

- xvi. If we agree about the flow of information in any new edition, then every knowledge area should contain no more than one process for any process group. For the existing process groups, existing knowledge areas, existing processes and components we can compile: one process for the Initiating Process Group, nine processes for the Planning Process Group, five processes for the Executing Process Group, nine processes for the Monitoring and Controlling Process Group and two processes for the Closing Process Group.^{xxx}
 - xvii. The number of open start/end components should be reduced to make the flow of information clear and efficient
- The increase in text and number of outputs with the same name has made the 2004 Edition more difficult to follow. Therefore, we should work to reduce the volume of text where possible. There are several opportunities for this:
 - xviii. There are many duplicate text and tables that should be deleted. For example, more than 50% of the text in Chapter 3 is copied from the chapters that describe knowledge areas. Therefore, this text should be deleted and replaced by references to chapters describing knowledge areas. Additionally, new text should be written for Chapter 3 that describes the figures related to interactions between process groups.
 - xix. There are components and repeated use of components that are also described elsewhere or referenced according to description. If we describe each component comprehensively in the glossary, then no referencing or additional descriptions should be necessary.
 - xx. There are many components that can be combined with other components. For example, the components "Activity list" and "Activity attributes" can be safely combined into a single component because they are a single entity (there is no activity without attributes and no activity attributes without activity). In addition to this, if we know that other components (milestones, calendars) are also activity attributes, then the output/input concept can be simplified and the text reduced.^{xxxi}
 - xxi. There are descriptions for components that imply changes. Take a look at the component "Work performance information". This includes "status of deliverables; implementation status for change requests, corrective actions, preventive actions, and defect repair; forecasted estimate to complete; reported percent of work physically completed; achieved value of technical performance measures; start and finish dates of schedule activities".^{xxxii} If this component includes all those elements, then we do not need most of those attributes, which are listed as individual components. There are other components that are already combined in a similar way. For example, if we look at the last two editions of the PMBOK® Guide and compare the output sets for Process 11.3 (Qualitative Risk Analysis), we can observe that the output sets are different. However, if we study the text related to the listed outputs, we find that the contents of the listed outputs are almost the same in both editions.
 - xxii. There are several general components, e.g., "Enterprise environmental factors", that appear for the first time as an input to Process 4.1 (Develop Project Charter).^{xxxiii} This component also reappears as an open start input into all knowledge areas. That means the component is not changed during project development and can be removed from other processes. However, it will affect other processes indirectly through the output of Process 4.1. If such general components need to be listed at all, then they should be listed in the Project Integration Management knowledge area only.
 - xxiii. There are processes that can easily be combined if they have similar and supplemental

input and output sets such as processes 4.1 (Develop Project Charter) and 4.2 (Develop Preliminary Project Scope Statement).^{xxxiv} As we can see, this particular input set is used in Process 4.1 (Develop Project Charter) to generate Output 4.1.3.1 (Project Charter). This output, in combination with a similar input set as in preceding process, is used in Process 4.2 (Develop Preliminary Project Scope Statement) to generate Output 4.2.3.1 (Preliminary project scope statement). Therefore, processes 4.1 (Develop Project Charter) and 4.2 (Develop Preliminary Project Scope Statement) could be presented as a single process that has an input set as Process 4.1 (Develop Project Charter) and outputs "Project charter" and "Preliminary project scope statement".

xxiv. If the concepts described in subparagraphs xii and xiii above are not acceptable, then outputs with the same name should be renamed. Those outputs are the result of different input sets, therefore, they are different and all should have different names. Otherwise we must determine why some outputs, with the same name, have the same description, while other outputs have different descriptions, regardless of their input sets. For example, Output 6.6.3.8 Activity attributes (updates) has the same description as Output 6.1.3.2 Activity attributes.^{xxxv} However, outputs 6.2.3.3, 6.3.3.2, 6.4.3.2 and 6.5.3.5 have the same name, Activity attributes (updates), while they have different descriptions.^{xxxvi}

Other research

As a part of this study, we conducted other research by way of comparison. The results are shown in Tables 1 and 2 below.

Parameter	Integr'n	Scope	Time	Cost	Quality	Human Res's	Comm's	Risk	Proc't	Total
1996 Edition Processes	3	5	5	4	3	3	4	4	6	37
2000 Edition Processes	3	5	5	4	3	3	4	6	6	39
2004 Edition Processes	7	5	6	3	3	4	4	6	6	44
2000 Edition The Same Input Sets As in 1996	2	4	1	1	3	3	4	0	6	24
2000 Edition The Same Output Sets As in 1996	3	3	5	3	3	3	2	0	6	28
2004 Edition The Same Input Sets As in 2000	0	0	0	0	0	0	0	0	0	0
2004 Edition The Same Output Sets As in 2000	0	0	0	0	0	0	1	1	1	3
1996 Edition Inputs	12	19	30	18	12	11	13	13	12	140
1996 Edition Outputs	7	12	15	10	10	8	7	13	12	94

2000 Edition Inputs	13	22	33	22	12	11	13	40	20	186
2000 Edition Outputs	7	14	15	11	10	8	9	25	12	111
2004 Edition Inputs	35	25	38	21	21	19	14	25	30	228
2004 Edition Outputs	28	21	32	16	20	12	13	13	23	178

Table 1: Comparison of Knowledge Area content of successive Guides

Parameter	1996 Edition	2000 Edition	2004 Edition
Pages (Including Front Pages)	182	224	396
% Blank Pages	12.8	12.5	10.5
Average Characters / Line	77	77	77
Average Line / Page	50	50	45
Relative Number of Pages	182	224	377
% Increase	Base (182)	23	68
Processes	37	39	44
Inputs	140	186	228
Outputs	94	111	178
The Same Input Sets As in predecessor edition	Base (37)	24	0
The Same Output Sets As in predecessor edition	Base (37)	28	3
Outputs with the same name, which have been created with different sets of inputs	7	6	19
Reappearance of outputs with the same name	25	23	98

Table 2: Analysis & comparison of key elements of successive Guides

Conclusions

This paper is based on the last three editions of the PMBOK® Guide and on available reviews of the current edition. In addition, we have used our published books^{xxxvii} that present a pioneering approach for making the PMBOK® Guide a methodology and for following its contents by a scientific tool. These books are not a critique of the PMBOK® Guide, but rather focus on a detailed explanation of the respective Guides' structures by analyzing the relationships and sequences of components as they are given or implied. By being able to understand how the current Guide gradually progresses from preceding to succeeding editions we have come to an understanding of its current contents.

The author believes that these analyses of the last two editions of the PMBOK® Guide demonstrate the usefulness of our tool. Using this methodology to assess the facts, we were able to reveal some

consequences and determine whether a suggestion was valid and worthwhile. If we had to assess thousands of entries from volunteers to improve the Guide, then we could save thousands of hours in doing so. This way we could move faster from qualitative to quantitative assessment. We might also encourage more analytical articles and so move project management closer to the level of other disciplines such as engineering and medicine.

The project management community has made great progress in building the foundations and wide recognition of our profession. The 2004 Edition is the product of the people assigned to continue the successful trend of the earlier PMBOK® Guides. However, the authors of the 2004 Edition did not sufficiently explain the reasons behind the massive changes in producing this current edition. The volume of new information exceeds the ability of the average professional to follow these changes.

A big disappointment is the lack of published studies and discussion about the PMBOK® Guide Third Edition. Available reviews show similar findings and suggest that we should continue to improve this document. Starting from a new beginning, where we were twenty-two years ago, is a risky job. Since the 2004 Edition is out now, with so many changes that are difficult to assimilate, the Project Management Institute should be moving to publicize First Stage Improvements (as suggested earlier) to avoid discredit and rejection.

This First Stage should be followed closely by a Second Stage project of improvements along the lines we suggested earlier, but in an interactive mode. This would enable the review team to understand how each proposal might change project objectives and goals, especially for those proposals that might threaten to change the historical perspective of the PMBOK® Guide.

Glossary of terms used in this paper

Component: Sub-elements of a process, e.g., process input or process output

Context of a component: A set of relationships between a component of a process and components of other processes defined in the PMBOK® Guide

Full relationships: Relationships that exist when the PMBOK® Guide descriptions of related process components are identical

Input set: All inputs within a process

Open-end: A process component with no successor relationship

Open start: A process component with no predecessor relationship

Output set: All outputs within a process

Output/input: If an output from one process is an input into another process, then preceding process and succeeding processes are related by this interfacing output/input

Partial relationships: Exist when the PMBOK® Guide descriptions and connotations of the related processes are similar but not identical

Process iteration: A series of related outputs/inputs that advance a procedure of project management from one stage completion to another by repeatedly passing it through certain process groups

Relationships of a component: The condition that controls how an input or output is related to its predecessors or successors

Step number: A position of an output/input within particular phase and iteration of process groups.

ⁱ Ethics, Standards and Accreditation (ESA) Report, PMI, 1983

ⁱⁱ Project Management Body of Knowledge (PMBOK) of the Project Management Institute, PMI, 1987

ⁱⁱⁱ A Guide to the Project Management Body of Knowledge (pmbok guide), Project Management Institute, 1996

^{iv} Rose, Kenneth H., PMP, A Guide to the Project Management Body of Knowledge (PMBOK® Guide) Third Edition, Project Management Journal, March 2005; Max Wideman, PMBOK® Guide, Third Edition – Is More Really Better? AEW Services, Vancouver, BC, March-May, 2005. (www.maxwideman.com/papers); Robert Youker and Stacy Goff, 2004 PMBOK® Guide 3rd Edition: A Review (www.projectexperts.com/articles); Steve Fahrenkrog, The 2004 Guide Changes, PMI – Portland Chapter. (www.pmi-portland.org)

^v Abdomerovic, Muhamed, Brainstorming The PMBOK® Guide [2004 Project Management Publications, Louisville, USA. (www.pmpublications.net/brainstorm)

^{vi} Ibid, pp105

^{vii} The PMBOK® Guide Third Edition, pp79, 89

^{viii} Ibid, pp159, 167

^{ix} Ibid, pp159, 168

^x Ibid, pp272

^{xi} Ibid, pp70

^{xii} Ibid, pp125, 159

^{xiii} Ibid, pp79, 98-99

^{xiv} Ibid, p42

^{xv} Ibid, pp45-55, 79

^{xvi} Ibid, p47

^{xvii} Ibid, pp143, 167

^{xviii} Ibid, p80

^{xix} Ibid, pp79, 182, 183

^{xx} Ibid, p55

^{xxi} Ibid, pp183, 202, 223, 273

^{xxii} Ibid, p88

^{xxiii} Ibid, pp44, 80

^{xxiv} Ibid, p42

^{xxv} The PMBOK® Guide 1996 Edition, pp28, 29

^{xxvi} The PMBOK® Guide 2000 Edition p31

^{xxvii} The PMBOK® Guide 2004 Edition pp40, 69

^{xxviii} Ibid, p 105

^{xxix} Ibid, pp239, 249, 253, 259

^{xxx} Ibid, p70

^{xxxi} Ibid, pp129-130, 350-351

^{xxxii} Ibid, pp94, 380

^{xxxiii} Ibid, p79

^{xxxiv} Ibid, pp79, 82-88

^{xxxv} Ibid, pp130, 156

^{xxxvi} Ibid, pp135, 138, 143, 151

^{xxxvii} Abdomerovic, Muhamed, Brainstorming The PMBOK® Guide [2004 Project Management Publications, Louisville, USA. (www.pmpublications.net/brainstorm)