DECISION MANAGEMENT PROCESS IMPROVEMENT PROJECT

By

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Abstract

It has become all too common that questions are raised during the execution of a project pertaining to the decisions that were made early on. Without having maintained a concise, accessible record of project decisions, the project manager and team members would find it difficult to provide hard evidence as to how they got to this point and what impacts specific decisions had on the project's trajectory. This paper introduces the Decision Management Process Improvement Project (DMPIP), which focuses on improving decision management process throughout the lifecycle of a project with the aim of adding value to project performance and helping obtain project success. This new tool was inspired due to a lack of appropriate methods involving complex projects at a local consulting firm.

The process along with the tool is being added to the toolset of a local Consulting Firm. This Firm plans to introduce the tools and techniques to clients that will benefit from an increased Project Management maturity level with improvements to its decision-tracking processes and demonstration of downstream effects of important decisions.

The final product is a contribution to the Project Management Body of Knowledge (PMBOK) in the form of creating a Project Decision Management knowledge area in the PMBOK format. A decision log that follows a decision throughout the whole process from problem identification and analysis to the eventual outcome is at the core of the created knowledge area.

Keywords

Introduction

Project Description

The Decision Management Process Improvement Project focused on creating a process for tracking decisions throughout the lifecycle of the project. The goal of this project was to improve the Decision Management Process on the specific current project in the pre-execution stage. The process has been added to the toolset of a Consulting Company that the Project Manager is employed by. In turn, the Project Manager/Consulting Company introduced the tools and techniques to the client that needs to increase Project Management maturity level by improving its decision-tracking processes and by demonstrating the downstream effect of the decisions. While long-term effectiveness of the tool cannot yet be established, in the short amount of time that the tool has been used it has increased the project's efficiency by bringing all of the decisions into one location, thus providing a large picture and traceability.

Background

A Consulting Company was working on the third stage of the project out of five for a client. Some key decisions were made early on with significant impact downstream. Decisions were made based on limited information available at the time and were recorded in the meeting minutes or other project documentation without a central, easy to access repository. Decisions were not being tracked throughout the lifecycle of the project. Such an approach made it difficult to demonstrate an impact of the decision later in the project as well as the cumulative effects of several related decisions. As a result, impacts of the decisions were surfacing and the customer started raising questions as to why things were being done a certain way. Remediation would have been to show a decision log and have the customer either validate a previously made decision or make a new one which could potentially generate a change order.

After the project idea was introduced to the Consulting Company, team decision management log was identified to be a need beyond the initial current active project and client.

A process for decision management was deemed necessary to be created along with the tool/template to track decisions and their impact through the project lifecycle.

Project Purpose

The purpose of this project was to identify a tool for tracking decisions throughout the lifecycle of the project and improve decision management process for the client. Some decisions were made early in the project and have either already had or will have a significant negative impact downstream. Capturing all of the decisions in a single repository, assessing their impact in future stages, and tracing them throughout the project would provide visibility and improve the current decision management process. End result anticipated would be to optimize project tasks by refining decisions being made.

This report demonstrates the research and analysis that was necessary to achieve the final result of the DMPIP project. A successful outcome was achieved through the application and integration of the project management processes aligned with the project management body of knowledge (PMBOK): project initiation, planning, executing, monitoring and controlling, and closing. The document provides a professional level of completion in terms of project management to support achievement of project objectives. The project manager applied knowledge, skills, tools, and techniques to project planning to meet project requirements.

The report also demonstrates mastery of project management and provides its unique contribution to the PMBOK.

Project Objectives

The objectives of this project were to:
- Expand on the current tools and decision-related processes from PMBOK fifth edition.
- Add Decision Management Process to the project delivery of the consulting company.
- Introduce a decision tracking tool to the client by incorporating it into the current project.
- Create deliverables for the PM 686B.

Product Objectives

The objectives of the product were to:
- The increase project management maturity level of the client's organization by adding decision tracking process.
- Add value to the client's project by providing decision tracking tool.

- Add value to the Consulting Company by providing Decision Management guidelines and tools.

Project Scope

The DMPIP Project included all of the work associated with planning, researching, and drawing conclusions about the most beneficial way to track decisions throughout the project lifecycle and the ability to demonstrate potential effect of deliberate omissions of necessary steps from each gate work downstream.

Included

- Research/identification of existing Tools and Techniques of the Project Decision Management from the current PMBOK guide as well as outside of it.
- Creation of a Project Decision Management Knowledge Area in the Project Management Body of Knowledge (PMBOK) format.
- Introduction of the Project Decision Management process to the Consulting Company.
- Introduction of a decision tracking template to the client by using the tool on the current project.

Excluded

- Creation of all processes and artifacts from scratch; existing tools, templates, and information will be used as much as possible.
- Adoption of the Project Decision Management by the Consulting Company.
- Adoption of the Project Decision Management by the Client Company.
- Measuring adoption of the decision tracking tool by the client.

Deliverables

There are several deliverables which were produced as a result of the successful completion of the DMPIP Project. The following deliverables had to be met in order for the project to be considered successful. The Project Manager was responsible for ensuring the completion of these deliverables.

The project produced:

- A Project Decision Management Knowledge Area in the Project Management Body of Knowledge (PMBOK) format

- Decision log template
- Academic Project Report

Project Benefits

Capturing the Value of Project Management Through Decision Making report details the challenges in decision making as they relate to projects and programs by identifying ways organizations can improve the decision-making process by focusing on the fundamental aspects of culture, people, and process. They may seem too simple, but the consistent, too-high project failure rate indicates that these three differentiators of organizational success are clearly not easy. The most successful organizations improve decision making by:

- Embedding a *culture* that enables an effective decision-making process and supports the people making the decisions.
- Providing the right support and information to the *people* making project and program decisions.
- Establishing and following a transparent *process* to support effective decision making." (Langley, 2015)

Decision Management knowledge area created was a supportive process to ensure the right people with the right information are making decisions to create a culture with the effective decision-making process. The decision-tracking tool was created to remediate an immediate need for the project team working on a specific client's assignment. The tool includes elements of decision traceability throughout the lifecycle of the project as well as shows impacts of the decisions downstream.

The tool is not specific to the current project or client and will be usable across many current and future projects and clients.

The project provides benefit to the Project Management community and a contribution to the Project Management Body of Knowledge by adding a Decision Management Knowledge Area.

Research Methodology

Project research and analysis section describes how project objectives were met by collecting and analyzing requirements, conducting research and implementing research results to meet product requirements.

Project research required was completed in two phases. The goal of the first part of the research was to discover project's, sponsor's, and stakeholders' requirements, and to document the problem or opportunity for the project. Information collection methods included case study, focus group, and non-structured interviews. The goal of the second part was to discover existing data that met as many stakeholder requirements as possible. The research included a literature review of project management scholar books, journal articles, project management professional websites, and interview data to understand readily available tools and processes. Gap analysis was performed to identify areas not covered by existing information and in need of development.

All of the primary and secondary data was collected and compiled into a single process document similar to the PMBOK guide knowledge area with the tracking tool at the heart.

Case Study

A case study of a client engagement with an existing project management delivery process provided a business case for the project and served as a starting point for the analysis. The case study presented issues on a particular project that arose from decisions that were made during project initiation and planning that either reduced delivery efficiency during the execution stage or contradicted project objectives. The project team was deemed responsible for the downstream impact of the earlier decisions. As a result, a clear need for decision traceability and a centrally accessible repository to maintain project and product decisions throughout project delivery needed to be established.

Project and product direction was provided by the project technical lead or project manager and only occasionally involved a stakeholder in charge of the affected requirement area. The project team was not involved in many pre-project decisions, however, was responsible for project execution thus affected by impact downstream. As a remedy capturing as many decisions as available would have been helpful to present the overall strategy during the presentation of the alternatives of achieving product objectives and establish a record that could be either verified or overridden when necessary.

Findings revealed that on large projects, like the case study one, it became a challenge to meet project requirements while not participating in the decision-making process. It was also discovered that some decisions were made by different stakeholders in isolation and occasionally contradicted each other. Thus, proper documentation of all project and product decisions is crucial for the project team.

Gap analysis identified a need for a tool for decision capturing along with a process to use for decision management. However, one of the main stakeholders' requirements was to not add overhead to the current project delivery process. Thus, the recommendation was developed to merge the new, to be a developed tool, with one of the tools already used.

Review of the existing client tools was conducted and an Excel spreadsheet used to track assumptions, issues and actions were deemed to be the best fit for integration. The determination was made for the new tool to be produced in Excel format and merged into the identified spreadsheet.

Focus Group

Consulting company project team was used as a focus group for research, product review and testing. Group ideas and attitudes were utilized for requirements identification and product steering. Product readiness and usefulness was tested with this focus group.

Focus group consisted primarily of the Project Management Professionals with many years of experience. The group had regular bi-weekly meetings, so team already went through stages of forming, storming and was at a performing stage for this project. Leveraging years of real world experience was a positive risk making it possible to complete the project on an aggressive timeline. Tasks affected by the realized opportunity included but were not limited to the requirements gathering, prototype reviews, and acceptance testing.

The team noted that it was hard to keep track of decisions since there was no formal process. Many times clients' decisions were made as a best guess based on a lack of information necessary to analyze the alternatives and their outcomes. Decisions were documented in meeting minutes and could not be easily found upon a request. Such methods lacked visibility and did not provide a comprehensive overview of a strategic direction. In fact, occasionally, decisions were found to contradict each other or the organizational strategy.

Data collected during focus group meetings was recorded to be further transformed into the requirements during the research stage, or incorporated as an update to the tool or process during the development stage. A comprehensive set of requirements was developed as an outcome of the group brainstorming session. Since the session was conducted in a free form by design, a large spectrum of requirements was voiced. Due to having experienced project managers in the focus group, most requirements were immediately prioritized into three categories: high, medium and "as time allows". High priority requirements must be met by the product in order for the team to begin using the tool and the process. Medium priority requirements were personal preferences that did not have to be met by the go-live date but would increase the adoption rate. "As time allows category" were identified opportunities for future development.

All identified requirements were recorded into the Requirements Traceability Matrix (RTM) with their corresponding priority. Literature review results were compared against the RTM and determination was made which findings were helpful in meeting stakeholders' requirements and were to be included in the final process.

Focus group was later used to evaluate the tool prototype and provide subject matter expert (SME) opinions during the proposed process review. Received feedback was incorporated to produce a successful tool and a management process that was ready to be deployed. Focus group members were invested in the development process which increased the likelihood of the adoption.

Interviews

Non-structured interviews were conducted to obtain opinions regarding the role of decisions in the overall project delivery. The interviewees were comprised of the project sponsor, who holds a Master of Science in Project Management degree as well as globally recognized Project Management Professional certification (PMP) from Project Management Institute (PMI), three other certified PMPs, and seven business analysts that perform some project management duties. Professional experience of interviewees ranged from eight to twenty-five years providing a cumulative experience of over eighty years. These interviews were conducted in a non-standard format through the research and development stages with questions relevant to the current state of the product. Questions were open-ended to encourage interviewees to elaborate on points they considered most important. Even though a standard for managing project decisions was not established, each project manager was capturing decisions throughout all stages of each project using their own tools and processes. Non-structured interviews allowed the interviewee an

opportunity to present their own methods of recording and tracking decisions. This also allowed the researcher to analyze the gaps in the de facto approach and suggest improvements.

Presented methods ranged from capturing decision via meeting minutes, confirmation email or by means of using other tools, such as an issue log. Usually, there was not a single location consistently used throughout the project delivery as it was for other project information such as a risk register. Each interviewee stated that the product in scope was beneficial and would add value for both consulting company and the client.

During the development phase of the project, non-structured interviews were used to introduce draft versions of the decision management process sections. This allowed obtaining feedback from interviewees by means other than the focus group setting which helped avoid groupthink. At least one other project management professional besides the project sponsor was very passionate about the topic and provided valuable insights into his approach based on years of experience. His participation led to a development of a whole pre-decision-making stage. He pointed out that some requests for decisions were either denied or did not provide enough information for the authorized decision-maker thus resulting in an outcome not favorable by the project. The goal of the additional stage was to avoid a poor decision by means of properly formulating the original request. This was the first time the idea was brought up and after the analysis was deemed to add value to the decision-making process. The idea was later presented to the project sponsor and added to the requirements. Since the project was in the planning stage, no change request for the scope addition was necessary.

The nature of the non-structured interviews created challenges for combining research results since questions were open-ended by design. Received data was analyzed and categorized as either a requirement for the tool, process, or an area of improvement during further development.

Literature Search

A literature search was conducted which involved finding and reviewing all readily available materials. These materials included internal company information, PMBOK, company resources, professional project management websites, and any other published materials. The goal of the literature search was to identify existing tools, techniques, and processes that were used in the industry for managing decisions. Researched data was evaluated and analyzed for its applicability to the target knowledge area. Research went through several iterations as the product was being developed and required either additional

literature search or abandoned some results. Even though target knowledge area was built primarily for software development or upgrade projects, the goal was to generalize the information to provide ability to be used in multiple industries. Thus, information that was too specific to the particular industry was not included in the results.

Research was limited to decision as it applied to the project management industry. There was a large amount of potentially applicable publications found, however, a closer look revealed that the main focus was the decision-making process or tools. To get the logical flow of the decision management in the project, the information was sorted into the following categories:

- Decision environment
- Definition of a decision
- Decision-making process
- Decision analysis
- Tool and techniques

Decision environment

Literature search findings were in alignment with the focus group statements. Arroyo (2014) conducted interviews and case studies and found that:

- Decisions are rarely documented.
- The rationale is not clear.
- Formal decision-making methods are seldom used.
- The decision-making process usually lacks transparency and does not help in building consensus or continuous learning.
- Multiple stakeholders with different perspectives and conflicts of interests are involved.

Rolstadås, Pinto, Falster, and Venkataraman (2015) argue that "a more formal and rigorous approach to decision making is needed. This will improve the quality of the decision and develop commitment and understanding in the project organization."

Definition of the decision

As defined by the Cambridge Dictionary a decision is a choice that one makes about something after thinking about several possibilities. Project decision is an act or process of reaching strategical or tactical objectives of the project. "In all projects, a number of decisions are made. Many think of decision making as one of the core activities of a project manager; thus, competence in decision making and tools to aid the decision-making process are of crucial importance for project success." (Rolstadås et al., 2015)

Decisions are the end product of wrestling with constraints: constraints of knowledge, time, resources, skills, political forces, legacy, laws of nature, human laws, ethics, personalities, and more. Effective decision making requires decision makers to surface these constraints and figure out how to craft workable decisions that accommodate them. (Frame, 2013)

Decision-making process

Decision making in the complex global business environment is increasingly challenging and vulnerable to unforeseen circumstances. Yet it is also vitally important to every aspect of business, especially project management, which involves making a multitude of decisions every day about priorities, approaches, resources, and timelines. (Langley, 2015)

As with all important business decisions, project outcomes can be traced to decisions that were made at an earlier point in time—and there's no doubt that poor decisions have negative consequences to both outcomes and an organization's bottom line. There are many reasons projects fall short of their original goals. In past research, a number of contributing factors has been identified and the percentage of projects they impact: ineffective communications (56 percent), poor requirements management (47 percent), poorly engaged executive sponsors (34 percent), and untimely/inaccurate knowledge transfer (34 percent). (Langley, 2015)

Decisions need to be made by the right people with the right information—and at the right time. Overlooking the complexity of the decision-making process is a risk that could negatively impact organizational performance, especially on an organization's most important projects and programs—those that make up the portfolio of strategic initiatives. (Langley, 2015)

The most effective decision making—the kind that helps improve project outcomes—results from a formal, methodical approach, such as the five-step process highlighted in *A Guide to the Project Management Body of Knowledge (PMBOK® Guide):*

1. Problem Definition: Fully explore, clarify, and define the problem.
2. Problem Solution Generation: Prolong the new idea-generating process by brainstorming multiple solutions and discouraging premature decisions.
3. Ideas to Action: Define evaluation criteria, rate pros, and cons of alternatives, and select the best solution.
4. Solutions Evaluation Planning: Perform post implementation analysis, evaluation, and lessons learned.
5. Evaluation of the Outcome and Process: Evaluate how well the problem was solved or project goals were achieved (extension of the previous phase).

This approach can improve the effectiveness of decisions—often dozens each day—that drive successful projects and programs. Some of these decisions are small and barely noticed, whereas others are prominent and under intense scrutiny. But together they make up the work that will lead to success or failure. (Langley, 2015)

Decision analysis

Time, cost and scope are the triple constraints of any project. Any variation in the stipulated value of these three constraints is bound to affect the project's outcome. So, what a project manager should do in order to keep these three constraints in check? Should he be doing work around after the risks have happened or should he be planning for the risks through the decision analysis? (Joshi, 2014)

Through decision analysis, the risks are not planned, but a reality check is performed with what should be the step which shall be taken in response to a particular situation. This situation may account for positive or negative risks and for the risks we can deduce a risk response plan accordingly. (Joshi, 2014)

Decisions are made to drive action. A decision made but not acted upon is useless.

Is a decision made and implemented in a way that fails to achieve the objectives that underlie the decision, a poor decision? A well-made decision can be considered a "good" decision even if the outcome

does not meet objectives. In other words, the operation can be a success even if the patient dies. (Pitagorsky, 2013)

A decision to move ahead with a project to create a new product may be a well-made decision but the product may be a total failure because the marketplace changed in a way that the decision makers could not have anticipated. (Pitagorsky, 2013)

What if the decision makers could have anticipated the change, had they taken the time to do a little more research? Had they involved other people with a broader range of knowledge or ideas? Then the decision would be poorly made. (Pitagorsky, 2013)

Tools and techniques

Project Management has emerged as a discipline of high-level decision making with the help of analog and digital tools which would help augment the intuition of a Project Manager and his team for taking decisions in favor of the future of the project. (Joshi, 2014)

A well-made decision is one that integrates all the right tools and techniques, makes use of the available knowledge, is based upon the intelligent analysis, includes effective use of intuition and subjectivity, and engages the right people in the right way and at the right time. The outcome of the application of the decision is another issue. Decisions are made based on assumptions. The assumptions are necessary because the outcome is in the future and therefore uncertain. (Pitagorsky, 2013)

There are many decision-making tools and techniques available, some are specific to the project management, others are more generic. Some decision-making models were widely known such as SWOT Analysis and Pareto Principle, while others were less popular. Decision analysis and decision-making tools and techniques were reviewed and included in the appropriate sections of the process, however, no single tool found was meant to follow the decisions through all of the stages of the project and integrate them. Tools found were either more specific to a particular function or "passive," meaning they were meant for tracking only. More discussion about the tools found and gaps identified can be found in later sections of this paper.

<center>**Research Results Analysis**</center>

Decision Tracking Tool

Research for existing decision tracking templates from various credible professional project management websites was incorporated into the draft tool. However, a gap between existing tools and stakeholder requirements was identified. The final goal was to combine the tools and enhance further to meet high/medium priority requirements in order to meet product's objectives.

One of the stakeholder requirements was to maintain project management efficiency by integrating with other tools/required document updates in order not to cause too much overhead for the teams. An existing client's template for tracking actions/issues/assumptions was used as a base for the decision management tool and expanded to incorporate decision tracking. Such an approach combines several required updates into one document, thus meeting the requirement of efficiency and integration.

Several tools related to the decision management were found during research. The tools were mostly limited to one particular area of the decision management process, such as logging decisions or performing analysis or aiding in decision-making process. There was not a single tool found that would follow the decision through all stages of project lifecycle with the exception of project initiation. Several tools bridged more than one area but none covered the whole spectrum. Those tools were included in the corresponding area of the decision management process. The overarching tool was created to integrate all project management processes and is at the heart of the decision management knowledge area.

Decision Management Process

There are countless books and industry publications available that describe the importance of decision-making process and present some tools and techniques that aid in efficient decision-making. However, none were found that follow the decision through problem identification to an actual outcome and integrate with the rest of the project management knowledge areas and process groups. Thus, the project objective was to create a knowledge area that would bring the existing information together and integrate seamlessly with other project management knowledge areas. This was also one of the high priority requirements from the stakeholders. During the development process, it was identified that other knowledge areas would need to be updated to include inputs and outputs from the created knowledge

area, however, it was out of scope for the current phase and was included in the opportunities for future development.

Existing materials were used as much as possible for the tool and knowledge area, however, gaps were identified and developed by the project manager.

The Project Management Body of Knowledge (PMBOK), 5th Edition, published by the Project Management Institute (PMI) is the global standard for project management industry. PMBOK was used as a foundation for the new knowledge area. It was identified that the format would match as closely as possible and that existing inputs and outputs would be used for integration. The idea was not the "reinvent the wheel" but rather to elaborate on the existing concepts and use information already widely-known to apply it to the project lifecycle.

The purpose of following the decision management process is to make a rational decision. The rational decision means the best outcome that aligns with the project and organizational strategy within the given conditions and constraints. The potential for several possible outcomes needs to be identified and the following steps followed to enable the decisions to be made rationally:

- Identify the problem, gather all relevant information along with constraints and limitations
- Find, analyze all of the alternatives and determine their impacts
- Select the best alternative
- Implement the decision and establish a control system.

Project Management Approach

Project Initiation and Planning

Standard project initiation processes were performed to define the project as per the PMBOK guide. The unique element of this project was a change of a topic after the completion of the planning process. Project manager identified a topic they were passionate about and began the analysis of the project topic change. It was identified that the new topic was targeted at a wider audience and a larger contribution to the project management community. Further discussions with stakeholders from the previous and the new project revealed to provide more benefit overall. Creation of a tool and a process was estimated to add significant value to the organization and their client. A knowledge area directly related to the project management was deemed to be a greater contribution to the project management body of knowledge than a non-related topic. The assessment also included a positive risk of working with certified project management professionals as a sponsor and primary stakeholders. The change was recommended and change control process was executed in order to proceed forward with the new subject.

A change request was assessed to have the most effect on the project scope. Effect on the budget was insignificant as the budget was for the project manager labor only and the budget was to be accepted per project planning triple constraints as determined during project planning process.

The schedule was the main constraint to be considered due to the academic requirements and timeline as shown in Exhibit 1. In order to meet an aggressive timeline, several schedule-crashing techniques had to be implemented. First, it was decided to use the previous project management plan as a base for the new planning effort since many sections were applicable to both projects due to the nature of the project environment. Second, an opportunity identified during the change control process was realized to crash the planning tasks related to working with stakeholders such as requirements collection, prioritization, and approval. These approaches allowed to complete the planning in an almost unrealistic time allocated for project initiation and planning.

	Constrain	Enhance	Accept
Budget			X
Schedule	X		
Scope		X	

Exhibit 1. Project Constraints

Project work breakdown structure (WBS) and schedule were created high level due to inability to complete preliminary research during the project planning stage. The project schedule was created as a hybrid of PERT analysis and critical chain method to remediate a lot of unknowns and mitigate risk. PERT analysis allowed to remove bias from the unrealistically short task duration. Critical chain method was used to level the only resource on the project and allow some flexibility for the task start times, but the main reason and advantage of implementing this method was a project buffer created at the end of the execution path. Project buffer allowed for the schedule to be set as aggressive as possible but to not lead to project failure because of it.

Project Executing, Monitoring and Controlling

During project execution standard project management processes were used. The most pertinent ones included, but were not limited to, risk, schedule, and scope control. The project started behind schedule due to the topic change, so utilization of schedule crashing techniques was a must.

As identified previously, the first method used for schedule crashing was to take advantage of the previously created project management plan and project artifacts. There were a lot of similarities between the project management approach, thus making it possible to make extensive updates rather than rewrite completely.

Another previously mentioned tactic used was realizing the opportunity for working with professionally certified project managers. Ability to speak their language and describe the objectives in their terms provided a significant positive effect on the tasks that required stakeholder engagement.

The last schedule crashing technique utilized was for major writing tasks, using voice recognition software to write a significant amount of content on the go. Many great ideas come when neither computer nor oen and paper are available. Most smartphones these days have at least one voice recognition application installed, but usually there is a variety. Google Keep with Google Voice was used for this project in combination with Microsoft OneNote application with Cortana as a voice recognition program. Neither of the voice recognition systems was precise, however, given the amount of writing required for both project and product, the method was found helpful and time-saving. Written content usually undergoes several iterations of editing regardless, and this method helped to keep the thought process flowing without stopping to correct formatting or grammar.

Stakeholder management has been a concern during previous project planning activities. During project execution, it was remediated by sending weekly status reports and action items log. Primary stakeholders were updated every week on the progress of the project and deliverables.

Final Products

Decision Log

A decision log is a tool for capturing the status of a current program, project, initiative or other investment which has come to a fork in the road. An important decision must be made and the team of decision makers needs to be aligned on what options exist, make a selection, document why the option was chosen and by whom, for future reference. Used properly, it is not a CYA solution but a tool for providing clarity, expediting alignment and removing barriers to success. A decision log:

- Aligns key stakeholders on current status, a particular issue or challenge, and options to consider
- Explains each option, the relevant benefits and risks
- Documents which decision is made, by whom and when
- Provides a record of accountability and drives support by decision makers (Lichtenwalner, 2011)

There are many scenarios in which a decision log may be useful. Some examples include when the decision to be made is not clear to those who must make the decision. For example, if the project is very detailed or technical in nature but the investment decision goes to a very senior level of leadership not familiar with those details. Another scenario may be in a fast-paced project where the leadership has little time to dig into the details. Furthermore, highly regulated or sensitive environments such as food and drug industries or security matters may benefit from regular use of this tool. Of course, these documents can be useful in highly political or confrontational environments to ensure support and alignment are maintained throughout as well. (Lichtenwalner, 2011)

Decision Log Template Example

Decision Log template example is shown in Exhibit 2.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Decision #	Requested Decision Reason	Requested Date	Alternatives	Decision Statement	Decision Date	Decision Rationale	Decision Maker	Approved By	Decision Status	Lifecycle Phase Impact	Description of the Impact	Actual Outcomes	Related Risks
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														

Exhibit 2. Decision Log Template

- Decision # - A unique identifier in a numbering system assigned to a lesson learned. The identifier should be used for reference or for cross-reference in the future among project team members and future project stakeholders in search of historical information.

- Requested Decision Reason – Project tasks with more than one potential alternative that needs to be chosen before the task can be completed.

- Requested Date – Date decision was requested.

- Alternatives - Alternatives are feasible courses of action that may be considered as a potential solution, outcome or decision. Alternatives with the potential to produce the desired outcome are to be listed in this decision log.

- Decision Statement - The decision statement is a placeholder to document the most favorable option and desired outcome selected from among the alternatives considered.

- Decision Date - The decision date is the date that the final decision was reached.

- Decision Rationale -The decision rationale asks for a justification for the decision that was made. Regulations, guides, standards, practices can be included to support the decision.

- Decision Maker - The decision maker is the person or group of persons who reached and agreed to the final decision.

- Approved By - While the decision maker proposes and has the authority to make decisions, there are instances when groups of individuals must support the decision to be made so that it can be carried out. In this section, please identify the remainder of the parties that must have agreed to the decision.

- Decision Status - "Closed" is a decision that has already been made. "Open" is a decision that has not yet been made. "Requested" is a decision that has been requested but not yet made.

- Lifecycle Phase Impact - Project phase that this decision will impact.
- Impact Description – The expected impact of the selected alternative.
- Actual Outcomes - Decisions are made to reach the desired outcomes. In the decision statement, the desired outcome is to be outlined. The main objective is to analyze the gap between the desired and actual outcome for the decision that was made. This information can then be collected for decision-making in the future.
- Related Risks - Link to the Risk ID in the Risk Register.

Project Decision Management Knowledge Area

PMBOK Guide 5th Edition was used as a base for creating Decision Management Knowledge Area, which includes inputs, tools and techniques, and outputs. Existing tools, processes and theory identified during research as well as information obtained via the focus group and interviewees were used to create the knowledge area. All data was incorporated into a comprehensive document in the format of the PMBOK Chapter.

One of the main requirements was to demonstrate how the newly created knowledge area integrates with the rest of the knowledge areas and process groups. Exhibit 3 reflects the mapping of the added 5 project management processes within the Decision Management Knowledge Area and 5 Project Management Process Groups.

Knowledge areas	PMBOK® Project management process groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring & Controlling Process Group	Closing Process Group
14 Project Decision Management		14.1 Plan Decision Management	14.2 Identify Decisions 14.3 Make Decisions	14.5 Monitor and Control Decisions	

			14.4 Perform Decision Analysis		

Exhibit 3. Project Integration Management

Project Decision Management Knowledge Area includes the processes and activities of conducting decision management planning, identification and capture, analysis, validation, and monitoring decisions so that the project will maximize the decision-making effectiveness. Project Decision Management uses standards and guidelines to implement, within the project's context, the organization's decision management system and, as appropriate, uses them to support continuous process improvement activities as undertaken on behalf of the performing organization. The objectives of project decision management are to increase the success of the project by the impact of the decisions with a positive outcome for the project and decrease the likelihood of project failure due to poorly made decisions.

Exhibit 4 provides an overview of the Project Decision Management processes, which include:

1. **Plan Decision Management** – The process of defining how to conduct decision management activities for a project.

2. **Identify Decisions** – The process of identifying areas where multiple alternatives or discrepancies demanding resolution exist.

3. **Perform Analysis** – The process of analyzing the effect of identified decision on overall project objectives.

4. **Make Decisions -** The process of formalizing a selected alternative and capturing the result in a form of a decision.

5. **Monitor and Control Decisions** - The process of monitoring and recording results of executing the decision activities to access performance of the project and recommend necessary changes.
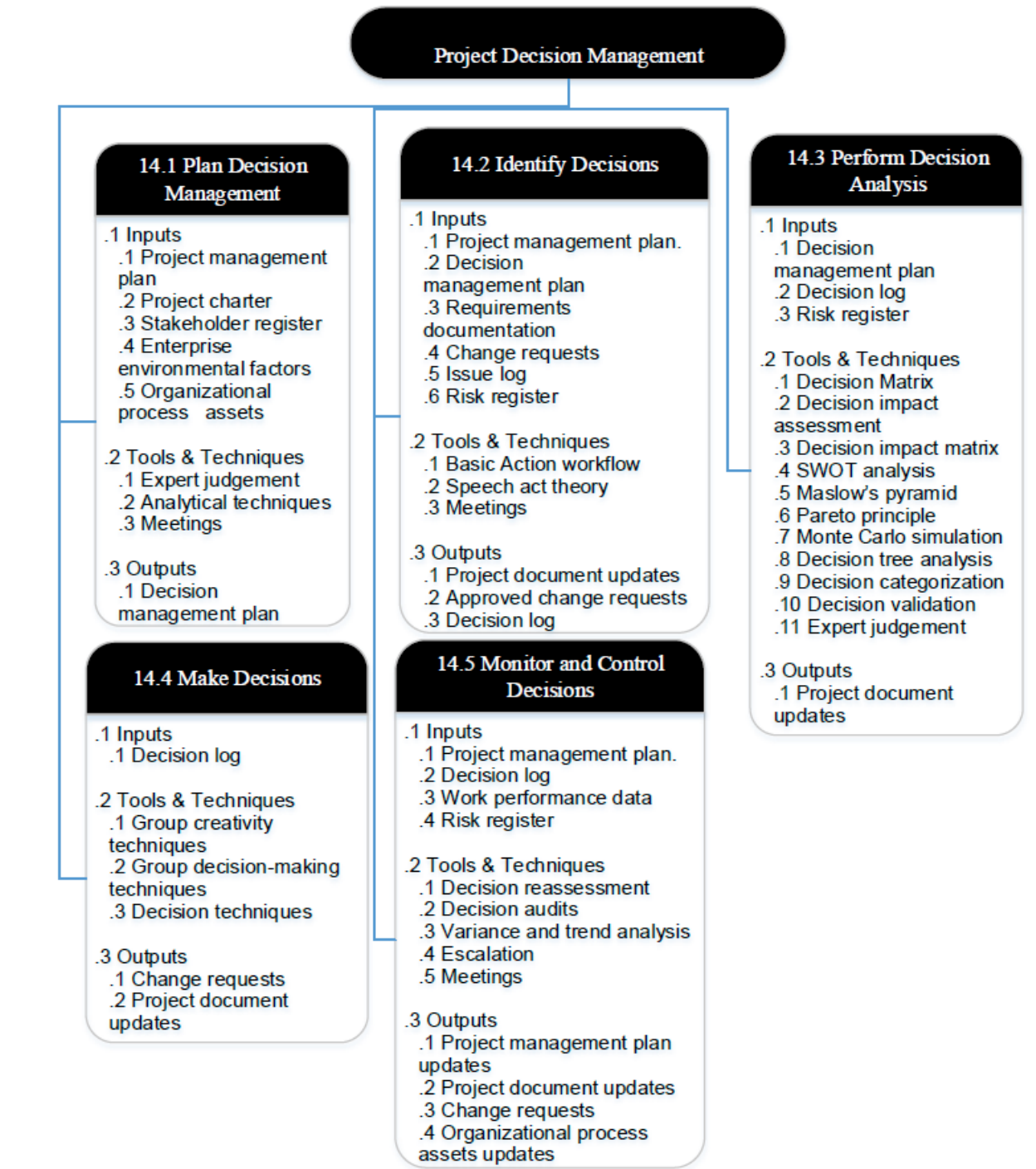
Project Decision Management

14.1 Plan Decision Management

.1 Inputs
  .1 Project management plan
  .2 Project charter
  .3 Stakeholder register
  .4 Enterprise environmental factors
  .5 Organizational process assets

.2 Tools & Techniques
  .1 Expert judgement
  .2 Analytical techniques
  .3 Meetings

.3 Outputs
  .1 Decision management plan

14.2 Identify Decisions

.1 Inputs
  .1 Project management plan.
  .2 Decision management plan
  .3 Requirements documentation
  .4 Change requests
  .5 Issue log
  .6 Risk register

.2 Tools & Techniques
  .1 Basic Action workflow
  .2 Speech act theory
  .3 Meetings

.3 Outputs
  .1 Project document updates
  .2 Approved change requests
  .3 Decision log

14.3 Perform Decision Analysis

.1 Inputs
  .1 Decision management plan
  .2 Decision log
  .3 Risk register

.2 Tools & Techniques
  .1 Decision Matrix
  .2 Decision impact assessment
  .3 Decision impact matrix
  .4 SWOT analysis
  .5 Maslow's pyramid
  .6 Pareto principle
  .7 Monte Carlo simulation
  .8 Decision tree analysis
  .9 Decision categorization
  .10 Decision validation
  .11 Expert judgement

.3 Outputs
  .1 Project document updates

14.4 Make Decisions

.1 Inputs
  .1 Decision log

.2 Tools & Techniques
  .1 Group creativity techniques
  .2 Group decision-making techniques
  .3 Decision techniques

.3 Outputs
  .1 Change requests
  .2 Project document updates

14.5 Monitor and Control Decisions

.1 Inputs
  .1 Project management plan.
  .2 Decision log
  .3 Work performance data
  .4 Risk register

.2 Tools & Techniques
  .1 Decision reassessment
  .2 Decision audits
  .3 Variance and trend analysis
  .4 Escalation
  .5 Meetings

.3 Outputs
  .1 Project management plan updates
  .2 Project document updates
  .3 Change requests
  .4 Organizational process assets updates

Exhibit 4. Project Decision Management Overview

Conclusion and Recommendations

The Project Decision Management Knowledge Area spans the gap identified through the research described in earlier sections. This knowledge area describes the methodology for decision management throughout the lifecycle of the project. It brings together many known concepts, tools, and techniques and organizes them into the format of the industry standard.

The knowledge area is organized into five processes within planning, executing, and monitoring and controlling process groups. This is presented in the manner to lead the reader through the project and provide all of the necessary contexts for effective decision management. It was designed to be general in nature and not restricted to use within any particular industry. This was completed in this manner to address the needs of the project managers that have identified the need to scrupulously keep track of the project and product decisions and provide a transparent yet all-encompassing means of the decision management.

It is recommended that the initial draft of the process is implemented for the pilot version. The intent of the document is to be kept evergreen until the process is fully adopted. Project managers are encouraged to provide further input and updates to the process based on their implementation and use. Once the process is fully adopted the final version of the document will be added to the organizational process assets. It may be adjusted on the case by case basis per project or per client.

Decision Management is its own knowledge area, however, it is tightly integrated with the rest of the project management knowledge areas. Other areas need to be updated with the integration points, but it was outside of the scope for this project.

Decision Log has already been adopted by the project team and incorporated into the current project. Even though the adoption was outside of the project scope, the tool has already proven to add value to the project delivery. Once all of the decisions made throughout the project were collected and recorded in a single location it was easy to identify areas in need of further investigation and draw conclusions.

It is recommended that the decision log is used on most if not all the projects as the decision management is critical in the project delivery and project success as illustrated in this report. It is expected that only on larger or more complex projects the decision management will be fully planned, but it is recommended that the process is utilized regardless of whether the plan is explicitly built or not. With that in mind, the

decision log was built to walk the project manager through the process, thus, making the use of the process de facto.

Opportunities for Future Development

The Decision Management Knowledge Area is a solid draft of the process for a pilot implementation. To further the development of an all-encompassing process the knowledge area should be continuously updated during the early adoption stages as per earlier recommendation. Due to the research methodology used and a selected population, updates to this knowledge area are expected once it becomes used in a wider spectrum of projects. Ideally, it would be used across multiple clients and updated to incorporate their unique approaches and requirements to decision tracking.

Once the process is fully adopted and efficiently incorporates into the project management activities, it can be considered for submission to the Project Management Institute for possible publication. All other project management areas will need to be updated with the integration points between process, i.e. inputs and outputs. Data Flow Diagrams must also be added to illustrate process data flows.

The process was created based on the experience in the Information Technology industry and then generalized to work across multiple industries. It is possible that further generalization may be needed in order to be applicable to the global level.

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