Developing a Knowledge Management (KM) Plan

Introduction

This is a tool developed to help NASA Project managers to understand NASA NPD and NPR requirements for Knowledge Management (KM) Plans within a Project Plan, and the value of project learning.

What is a Knowledge Management Plan and why do I need to develop one?

NASA Procedural Requirements and NASA Policy Directives (NPR 7120.5E and NPD 7120.6, respectively) require that project and program plans include a Knowledge Management Plan.

Historically, many projects have complied with project closeout requirements by gathering, documenting and sharing "lessons learned" as a perfunctory check-off activity. There may even have been a hurried effort to gather lessons learned over the duration of the project when information recall was not fresh. Most importantly, lessons may have been missed during the project when pro-active steps might have been taken.

NASA projects can benefit from researching, capturing and curating successes and failures experienced by previous NASA projects and programs. They can improve mission success for future projects by doing the same activities on their own project.

The primary goal of this tool is to assist a project/program manager to develop a meaningful Knowledge Management Plan, defined as one that:

- Brings value to the project;
- Leverages available resources;
- Is realistic in terms of cost and schedule implications; and
- Is flexible enough to adjust to the evolving needs of the project.

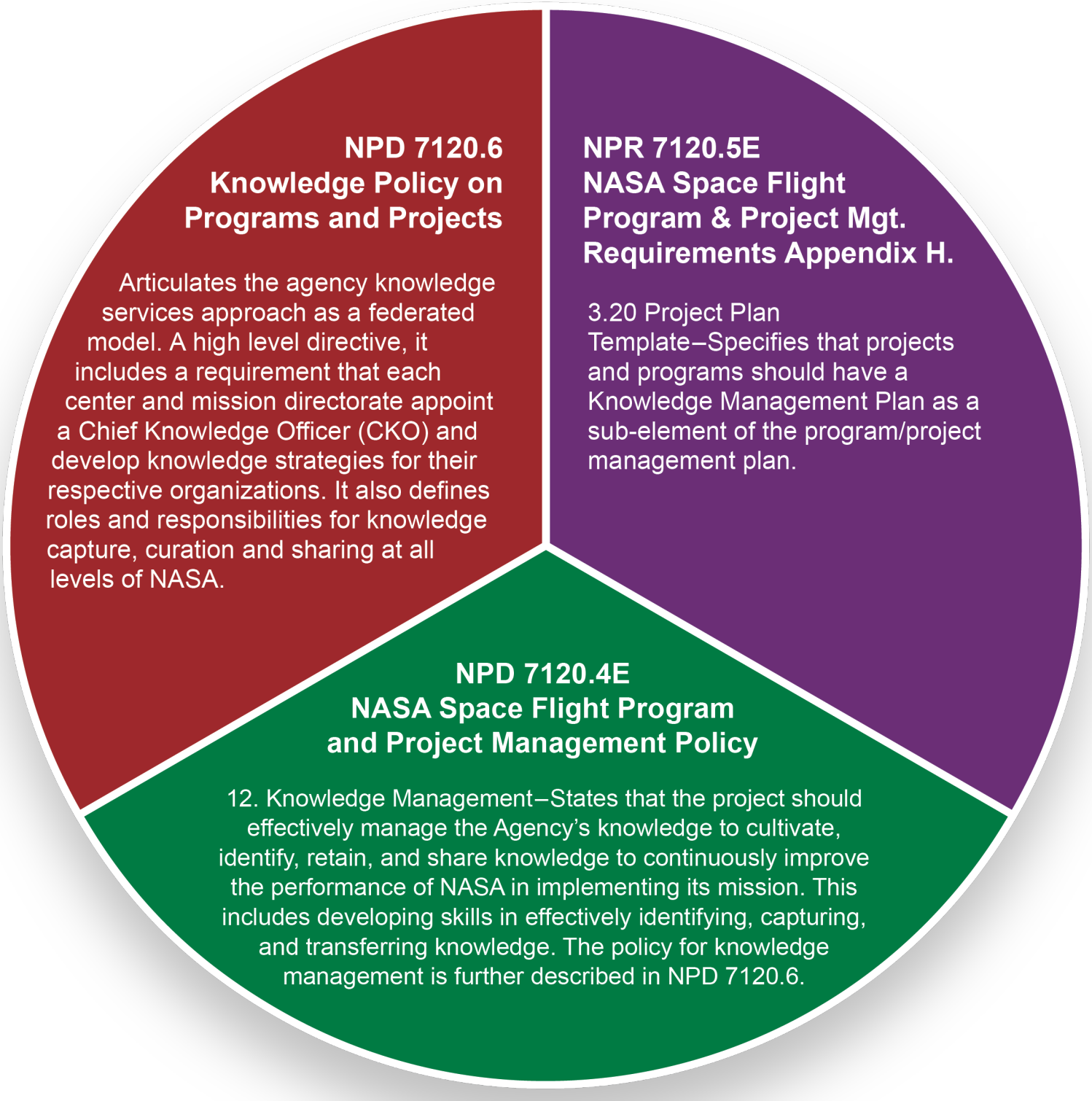
In addition, this tool enables a project/program manager to create an outline of the KM Plan mapped to the project phases for the following NPD/NPR requirements:

- NPD 7120.6 – Knowledge Policy on Programs and Projects
- NPR 7120.5E - NASA Space Flight Program and Project Management Requirements
- NPD 7120.4 – NASA Engineering and Program/Project Management Policy

Finally, this tool identifies knowledge management tools and resources by providing links to resources and tools that will facilitate the KM Plan implementation in the project life cycle (After Action Review/ Pause and Learn).

Developing a Knowledge Management (KM) Plan

What are the specific compliance requirements for the NPR and NPDs?



Developing a Knowledge Management (KM) Plan

The "Meaningful" Knowledge Management Plan

A meaningful KM Plan which can enhance project success by learning from past projects' successes and failures includes three learning components. A template is available at the end of this document that can be used as a guide for the types of learning activities (hosting knowledge sharing forums, accessing NASA's Lessons Learned Information System (LLIS), attending knowledge sharing forums, hosting a facilitated learning session such as a Pause and Learn (PaL), and reading case studies to consider during the life cycle of the project.

Putting Together Your KM Plan

Getting Started

Contact your center or mission directorate CKO to learn more about tools and resources for writing your KM Plan.

Who can help me with putting together a KM Plan?

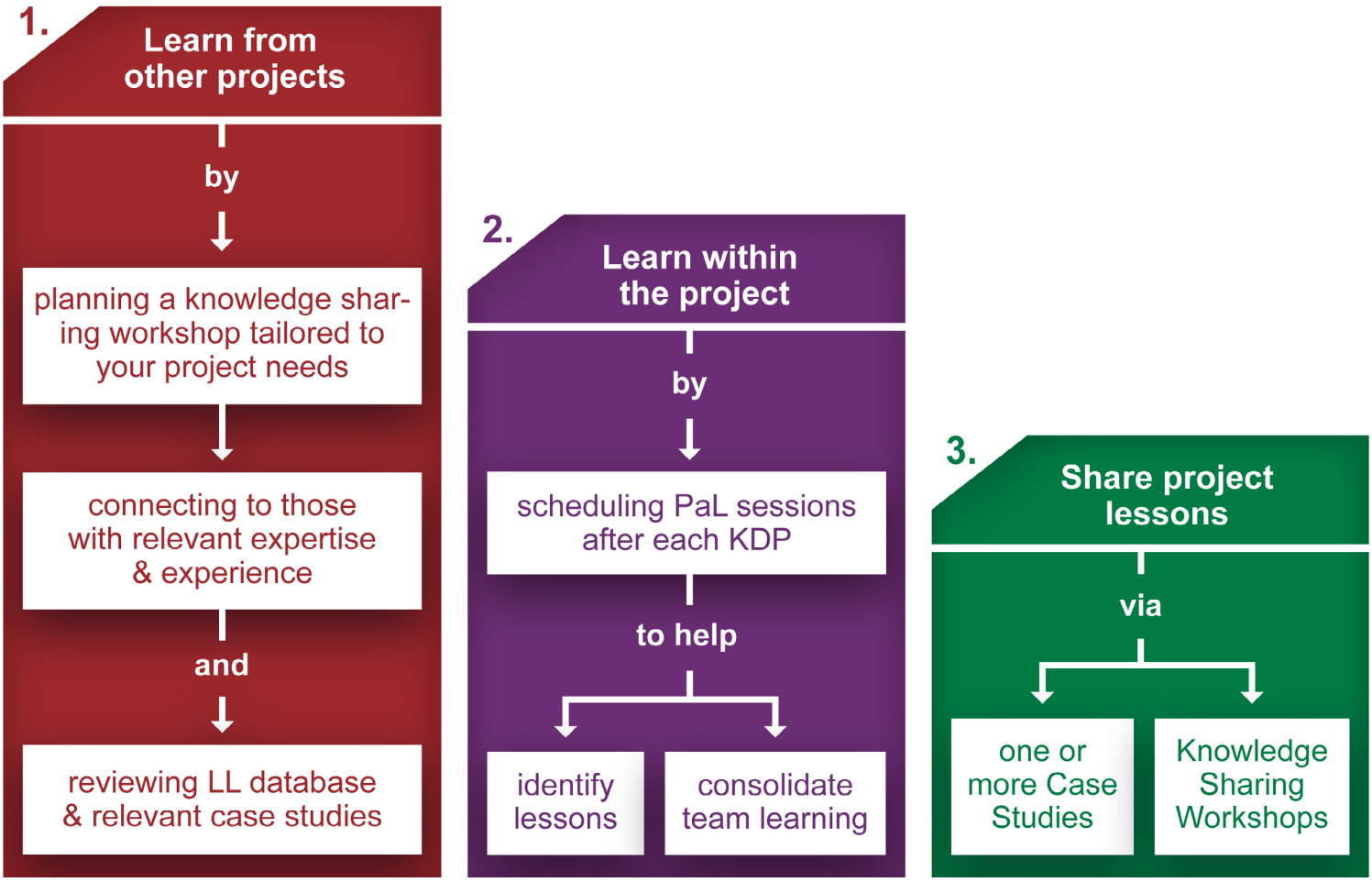
In accordance with NASA Policy Directive 7120.6, every NASA center and mission directorate has an appointed Chief Knowledge Officer (CKO) who can be a helpful resource to consult when developing the KM Plan. The CKO can help you map out the activities to encourage project learning, and help the project team master successes and avoid mistakes that previous projects experienced. The CKO can also facilitate capturing knowledge and lessons from your project to assist future team success.

The project manager is ultimately responsible for implementation of the Knowledge Management Plan and should delegate responsibilities for specific activities within the Knowledge Management Plan, such as:

- Who will be responsible for scheduling and organizing Pause and Learn sessions, gathering lessons learned, documenting case studies, and communicating with leadership?
- Who will be responsible for learning from other projects?
- If the responsibility is shared across the project, make it as specific as possible.

Developing a Knowledge Management (KM) Plan

Goddard Space Flight Center's (GSFC) Office of the Chief Knowledge Officer (OCKO) created a framework for its flight project teams that involves embedding existing knowledge management activities, such as Pause and Learn sessions, case studies, and workshops, within project plans. Carrying out these activities during projects—in the moment—helps ensure that memories of events are fresh and the lessons they provide can be put to use immediately. The first and primary beneficiary of any lessons learned activity should be the project team itself, but these activities also support learning across projects.



Developing a Knowledge Management (KM) Plan

Project Knowledge Capture, Curation and Sharing

What kinds of activities should I consider including in my Knowledge Management Plan?

In order to create your KM Plan for capturing knowledge and lessons learned, start by scheduling a meeting with the CKO at your center or mission directorate to learn about the variety of tools and resources that can be used to help you build your KM Plan. In your meeting, you can decide together on the type of activities to be implemented in the formulation, implementation and project closeout phases. The examples below are a sampling of the options that can be included in your KM plan, but are not meant to be prescriptive.

Formulation Phase (Learn from Other Projects)

Be aware of and follow existing rules and established processes and guidance (GOLD rules, tech standards, etc.), which have lessons and knowledge from previous projects embedded in them.

Access previous project lessons learned via your local/center or agency lessons learned information systems (LLIS) by talking to other project/program managers, and by reading case studies from other projects.

Attend knowledge sharing workshops, training and case study sessions organized by OCKO and other center/mission directorate host organizations.

Request a knowledge sharing workshop tailored to the needs of your project. This can be designed with the CKO.

Consult other sources of Lessons Learned and Guidance: NASA Engineering Network Communities of Practice, Mishap Reports, APPEL Knowledge Services' Critical Knowledge Gateway (CK Gateway), Masters with Masters videos and other NASA YouTube lessons learned videos.

Implementation Phases (Learn within the Project)

Continue to access relevant project lessons learned via your local/center or agency lessons learned information systems (LLIS), by talking to other project/program managers, and by reading case studies from other projects.

Lessons learned need to be identified and documented on a regular basis rather than only at the end of the project/program. Specifically, lessons learned need to be identified and documented at the end of each project/program life cycle phase. The activity should be undertaken soon after the gate reviews.

Team members should discuss lessons learned during peer reviews in early design phase.

In addition to documenting lessons learned, consider documenting insights and things you think other projects might benefit from throughout the project at regular intervals. Turn those notes into knowledge maps and integrate them into the center/mission directorate and/or agency LLIS.

Consider whether Pause and Learn sessions (also known as After Action Reviews) or other types of activities can help your team learn from the current state of the project, share lessons with others, and redirect a project or team members as a result of the session outcomes.

Project Closeout (Share Project Lessons)

Within 60 days of launch, the project management team (with support from the OCKO), should consolidate project lessons learned into a final lessons learned report. The lessons should be entered into the LLIS, and the report can be shared with other people.

Beyond the dissemination of official lessons learned through the LLIS, the project should share project knowledge by collaborating with the OCKO to develop one or more case studies and hold a knowledge sharing workshop.

Within 60 days after the mission's launch, the project can consider scheduling and holding a knowledge sharing workshop with the support of the CKO to tell others about the mission and the key lessons learned from the mission. If case studies have been developed, they may serve as the basis for such a knowledge sharing workshop.

Within 90 days after the mission's launch, a member of the project team will contact APPEL Knowledge Services to co-develop an article on the project and lessons learned. The article will be published on appel.nasa.gov.

Developing a Knowledge Management (KM) Plan

NASA and Center Level Resources

- NASA Policy Directive (NPD) 7120.6 - Knowledge Policy on Programs and Projects
- NASA Procedural Requirement (NPR) 7120.5E - NASA Space Flight Program and Project Management Requirements
- Office of the Chief Knowledge Officer (OCKO) at Centers and Mission Directorate CKOs
- NASA Lessons Learned Information Systems
- Pause and Learn Brochure
- Pause and Learn Implementation Guide (in the FPD Knowledge Exchange)
- Case Study Methodology

To get a Template to help you write your KM plan, contact Susan Snyder, APPEL KS Knowledge Lead: sbsnyder@asrcfederal.com

Special credit for KM Plan tool content goes to NASA Goddard Space Flight Center (GSFC) Center Office of the Chief Knowledge Office (OCKO) and Barbara Fillip, former Knowledge Lead, Flight Projects Directorate, ASRC Federal/Inuteq, LLC.