



Lessons Learned Alignment Across a Large Organization

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Outline

- Provide context and background for NASA's approach to lessons learned
- Share observations from NASA's 2023-2023 lessons learned alignment review
- Suggest best practices for aligning lessons learned systems in a large organization
- Highlight success stories from NASA's approach



Context: Lessons Learned at NASA

NASA's Knowledge Map





History

- 1992 Paper-based Lessons Learned system was developed. Some entries date back to the 1970s
- 2002 U.S. General Accounting Office report highlighted fundamental weaknesses in the collection and sharing of lessons learned by program and project managers. Primarily focused on mishaps.
- 2005 NASA Engineering Network (NEN) developed to align Chief Engineer's Office with lessons learned
- 2012 Chief Knowledge Officer formally connects lessons learned and other knowledge sharing techniques

Challenges

- Promote continual engagement with learning and knowledge sharing
- Keep current and adapt to organizational changes
- Maintain awareness of technological capabilities and adapt to changes in environment
- Appropriately balance Agency priorities / critical knowledge with local learning and development



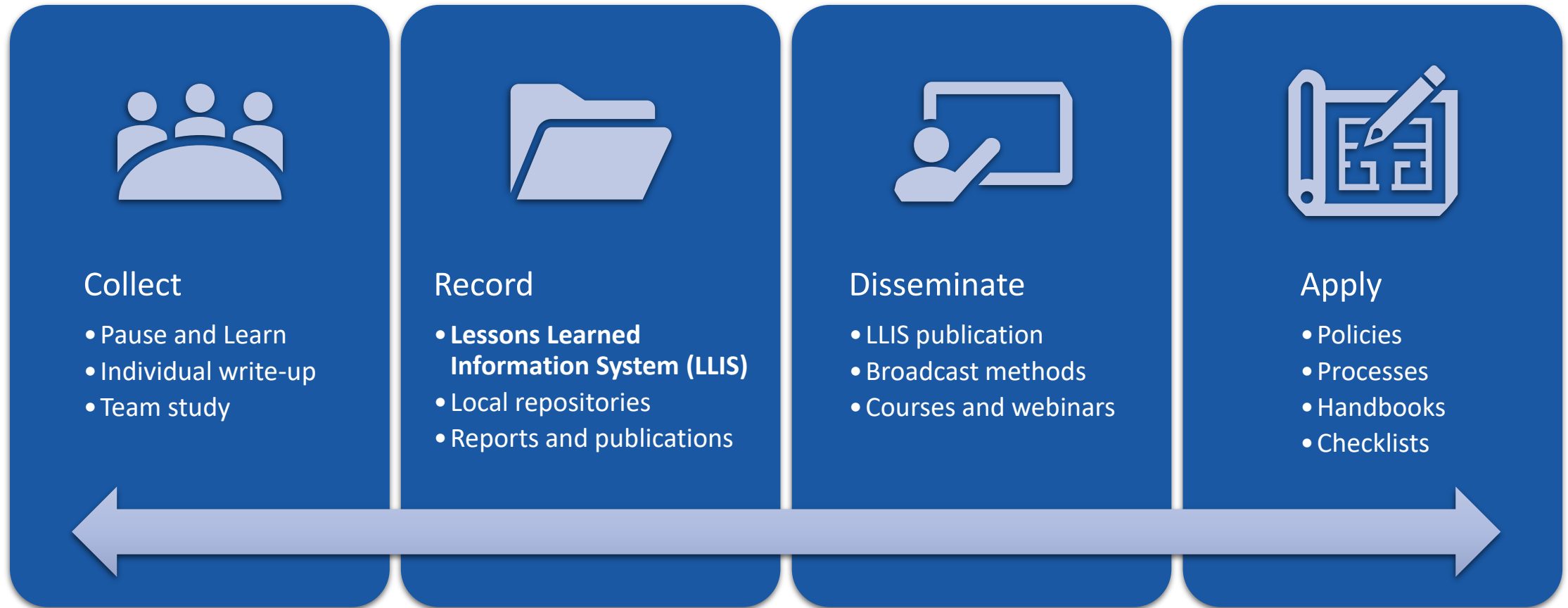
NASA Lessons Learned

Captured knowledge or understanding gained through experience which, if shared, would benefit the work of others. Unlike a best practice, lessons learned describes a specific event that occurred and provides recommendations for obtaining a repeat of success or for avoiding reoccurrence of an adverse work practice or experience.

-NASA Policy Directive 7120.6a



Lessons Learned Lifecycle





Agency-Wide Highlight Criteria

1. Submitter shall concur with submission to the NEN/LLIS.

Lessons submitted for agency highlights should be reviewed by submitters and their teams for dissemination to a wide audience. *Note: lessons that are not approved for sharing with the public may be submitted to the NASA Engineering Network (NEN). These restricted lessons will not be eligible to be selected as agency highlights.*

2. Lesson shall be appropriate for a broad audience, and any limitations based on NASA policy and Federal laws and regulations must be clearly marked.

Lessons should not contain management sensitive or competition sensitive information. Although Controlled Unclassified Information (CUI) is permissible in NEN, it must be clearly marked, and lessons containing CUI require additional reviews before selection as agency highlights.

3. Lesson elements shall have long-term validity and value to future work.

Lessons should encourage the appropriate actions and decisions for the agency, its teams, and its partners under similar circumstances in the foreseeable future.

4. Lessons shall focus on themes or elements with relevance to agency missions and/or agency operations with a direct impact on agency missions.

Though generally technically-focused, content may incorporate any topics related to the agency's critical knowledge. Therefore, administrative and operational lessons pertaining to activities and mission support functions in relation to their engagement with core mission activities also are encouraged.

5. Lessons shall represent something new or a new perspective/refinement for previously documented lessons.

New entries should not repeat previously documented lessons unless there is a change in understanding to the prior lesson. Those lessons that offer actionable suggestions for addressing challenges in following existing procedures can be especially valuable.

<https://appel.nasa.gov/lessons-learned/lessons-learned-lifecycle-and-highlights/>



Lessons Learned Alignment Review



Local Knowledge Has Local Value

One advantage of the Agency's **federated approach** to Knowledge Management is that it supports **lessons learned processes at different levels of the organization**, allowing the Agency to **focus on capturing operational and technical lessons learned specific to local stakeholders**.

- Most Center and Mission Directorate lessons learned systems provide Agency-wide access.
- Most Centers tend towards fewer fields in their lessons learned systems to serve the needs of the constituents. Systems with a few big “buckets” seem to be more inviting to individuals who would be submitting lessons versus lots of specialized fields.
- Local LL repositories are beneficial and provide value to the agency. Local repositories solve local problems.



Maintaining Trust Is Essential

- Capturing and sharing lessons requires **trust** between projects and Chief Knowledge Officers (CKOs) and between or among Agency organizations.
- Writing lessons with **recommendations and actions for other organizations** requires careful coordination.



Renew Engagement with Periodic Reviews

Lessons learned systems and the data contained within them need to be **reviewed periodically** to ensure they reflect current organizational needs, content relevancy, and new technical capabilities.

- One well-regarded approach is to frame lessons learned requests as **problem solving requests**.
- Another approach is to set up a mechanism to **allow submitters to submit/vet/brainstorm some of their lessons** for collaborative development and possible knowledge sharing in an early stage on a lesson intake process.



CKOs Provide Essential Support

- Maximizing the benefits to **broadening and sharing lessons across the Agency requires CKO involvement.**
- We use lessons learned systems as memory systems, and it is important for **CKOs to be a resource for lessons learned for their communities.**
- Successful systems reinforce the role of the CKO as “ask an expert”. CKOs must be much more familiar with lessons learned systems than the technical workforce that benefits from those systems.
- The CKO Community will continue to **support and recognize leading practices for lessons learned**, and we will also continue to highlight tools and resources that relate to lessons learned to our audiences.



Results



Lessons Learned Sharing Protocols

Immediate Team or Project	Center or Mission Directorate	NASA*	
Personnel Sensitive Proprietary	Center Competitive Mission Specific	Agency Wide Highlights Course Materials	Lessons Learned Information System Historical Material
Lessons learned in this category are reviewed by immediate team. Individual items are rarely exchanged beyond involved parties.	Lessons learned are reviewed by Center or Mission Directorate CKOs. Individual items may be exchanged among CKOs or groups.	Lessons learned in this category are reviewed and confirmed to meet basic standards from Agency Wide Highlights Process. * With additional review, appropriate information from this category can also be shared with NASA partners and the public.	
Individual items can be considered for broader distribution.			



NASA Lessons Learned Resources

- Center and Mission Directorate CKOs:
<https://appel.nasa.gov/critical-knowledge/nasa-knowledge-community/>
- Lessons Learned Information: <https://appel.nasa.gov/lessons-learned/>
- Lessons Learned Repositories: <https://appel.nasa.gov/lessons-learned/ll-repositories/>
- Lessons Learned Information System: <https://llis.nasa.gov/>
- Spotlight on Lessons Learned Series:
<https://appel.nasa.gov/tag/spotlight-on-lessons-learned/>
- Knowledge Policy for Programs and Projects (NPD 7120.6):
<https://nodis3.gsfc.nasa.gov/displayDir.cfm?t=NPD&c=7120&s=6>



Connect & Learn



Course Catalog



Career Development



Critical Knowledge



Program & Project
Management



Systems Engineering



Lessons Learned



Knowledge Inventory



Watch, Listen, Learn



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