ENTERPRISE TECHNOLOGY LESSONS LEARNED PROGRAM

Strategy and Procedures

January 2021

Version History

Version Number	Implemented By	Revision Date	Description of Change
1.0	Varnado	January 28, 2021	Final Version 1.0

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1. OVERVIEW

1.1 Introduction

This technical standard provides management expectations and a framework for the U.S. Department of Housing and Urban Development's (HUD) Enterprise Lessons Learned Program. The framework is intended to support the development and implementation of a HUD-wide lessons learned process that supports and promotes the identification and communication of lessons learned by HUD and contractor personnel in the performance of HUD's Information Technology (IT) missions.

Many effective lessons learned activities are conducted across HUD's complex IT enterprise. The objective of this technical standard is to enhance lines of communication among these activities with minimal impact on the processes and methods that currently exist. The technical standard encourages the use of a common language and a common institutional framework to facilitate HUD-wide sharing of lessons learned information while enabling tailored local lessons learned based on the nature of work and organizational complexities. The standard is designed to promote improved sharing of lessons learned across IT programs, not to create additional, overlapping programs or impose new requirements.

This technical standard broadens the concept of lessons learned to include all areas of HUD business as practiced by both HUD and contractor personnel at all levels of management and work performance. It is intended to support the identification and sharing of good practices as well as lessons learned from unintended outcomes.

The broad application of lessons learned is particularly important to the Department's commitment to maintaining effective IT systems and services. HUD staff and contractors are responsible for ensuring that systems and services are maintained under effective configuration control that reflects the current mission, program objectives, and budget direction from the Office of the Chief Information Officer (OCIO). Information on systems and services performance such as performance measures, performance indicators, self-assessment findings, independent assessment findings, and other relevant feedback should be factored into the configuration control process. Additionally, the application of lessons learned will play a key role in maintaining systems integrated and in improving HUD and contractor programs, processes, and practices integral to program success. HUD and contractor organizations should review the elements specified in this technical standard to assist management, staff, and line workers to share information, adopt successful practices, and avoid repeating mistakes.

1.2 Background

A hallmark of HUD's IT Systems and services is the transparency and communication of technical and non-technical review results. The sharing of operational information was more limited due to the diversity of HUD's IT missions and historical operating practices. Over the past several years HUD has encouraged improved communication of operating experiences. HUD's Project Planning and

Management (PPM) Life Cycle V2.0[1]requires that lessons learned be identified, evaluated, shared, and incorporated into projects, programs, or operations. The references to lessons learned reflect the need to communicate acquired knowledge more effectively and to ensure that beneficial information is factored into planning, work processes, and activities. Existing requirements did not provide a comprehensive standard for HUD-wide lessons learned programs nor did they guide tailoring local HUD and contractor lessons learned programs. As a result of the lack of a HUD-wide vision for the role of lessons learned and historical practices, identification, sharing, and use of lessons learned were often insular and sporadic across the complex IT enterprise.

Why a Lessons Learned Program?

Why does HUD need lessons learned (LL) capability? Before we discuss that, it is important to understand what a "**lesson**" is and what is a "***lesson learned***." A lesson is a knowledge or understanding gained by experience. The experience may be positive (*a best practice*), as in a successful test, mission, exercise, or workshop, or negative, as in a mishap or failure**. Successes and failures are both considered sources of lessons**.

A lesson must be significant in that it has a real or assumed impact on everyday operations. It must be valid in that it is factually and technically correct; applicable in that it identifies a specific design, process, or decision; and it reduces or eliminates the potential for failures and mishaps or reinforces a positive result. It is the knowledge acquired from an observation or an adverse experience that causes a worker or an organization to improve.

A lesson becomes a LL when you can measure a behavior change that is of a positive nature that improves performance. Organizations struggle with actually "*learning*" lessons once identified. Even though there are many understandable reasons for this, you cannot give up. Other organizations complain that once you identify a lesson, it ends up in some database and you quickly forget it. The irritation of every LL practitioner is seeing important lessons collected and never shared or resolved. This takes time and effort and, in most instances, money. Often there is no obvious "owner" of the lesson identified, and there is rarely a system set up to resolve the issue and implement corrective actions.

There are some very sound reasons why HUD needs an LL capability that can evolve into an effective program. Here are just a few:

- It saves time by providing a central location for efficient searches of valuable LL information.
- It helps reduce or avoid costs by providing information on success stories that you may be able to implement or mistakes that you may be able to avoid.
- You can expand your information network by providing information sharing opportunities by connecting with other sites, "experts," or people doing similar work.

[1] The Project Planning and Management (PPM) Life Cycle V2.0 provides practical approaches to optimize innovation, minimize schedule and budget risk, and better plan and execute projects. PPM V2.0 incorporates many principles from the Project Management Body of Knowledge (PMBOK®), a best practices project management methodology which presents a set of standard terminology and guidelines for managing projects.

- Most importantly, it can reduce the risk of repeated mistakes and improve the chance that success is continual.

These are also some advantages to capturing project lessons and turning them into knowledge:

- To improve project management processes.
- To improve management decision making (develop new strategies).
- To improve personnel performance.
- To increase organizational knowledge.
- To save resources (money, supplies, time).

1.3 Scope

1.3.1 Purpose

HUD expects all individuals performing IT work to make decisions and execute their work based on the best available information. Managers at all levels of the organization and throughout the contractor community are expected to ensure that decision making is founded on the best professional and industrial practices currently available. All professional, technical, and craft personnel are expected to plan and execute their work based on the best available practices.

Through their work experiences, all personnel is expected to identify opportunities for improvement and best practices and share these with their colleagues, the broader IT community, and other federal agencies and contractors. The purpose of lessons learned is to share and use knowledge derived from experience to 1) promote the recurrence of desirable outcomes, or 2) preclude the recurrence of undesirable outcomes. This technical standard is designed to facilitate the sharing of information across the HUD's complex IT enterprise -- among operations and area offices, field and headquarters elements, and Federal contractor and subcontractor entities.

The standard establishes broad management expectations for developing, sharing, and using lessons learned and a framework to facilitate implementing these expectations.

1.3.2 Applicability

This technical standard defines the expectations and framework for identifying, sharing, and using lessons learned. When selected for use, this technical standard applies to all HUD Headquarters and field IT organizations, management, and operating contractors (hereafter referred to collectively as "HUD organizations").

HUD expects each element and each contractor to tailor lessons learning activities based on the work and organizational complexity at each local level. HUD expects that the programmatic aspects of identifying, sharing, and using lessons learned will be developed to support each local organization(s).

2. PROGRAM DESCRIPTION

2.1 Overview

The use of lessons learned is a principal component of OCIO's culture committed to continuous improvement. The methods used to instill lessons learned as part of the culture vary, as do the mechanisms for identifying, sharing, and using lessons learned. The nature of the work and the complexity of the organization are prime determinants of culture and infrastructure support for lessons learned. Cultural methods often include setting expectations, providing support and incentives, monitoring and feedback, and continuous improvement. Infrastructure mechanisms typically include a clear definition of resources, processes, procedures by which personnel is supported to identify, share, and use lessons learned. The infrastructure mechanisms are often referred to as Lessons Learned Programs. Lessons Learned Programs include two basic processes.

- The first is a development process that includes the identification, documentation, validation, and dissemination of a lesson learned.
- The second is a utilization and incorporation process that includes identification of applicable lessons learned, distribution to appropriate personnel, identification of actions that will be taken as a result of the lesson learned, and follow-up to ensure that appropriate actions were taken.
- In addition to these elements, lessons learned programs contain processes to measure operational performance improvement and program effectiveness.

For contractor organizations, the contractor should consider interface agreements in cases where multiple contractors are performing work under the direction of the same local OCIO organization. The function of the Lessons Learned is to facilitate the sharing of lessons with all OCIO and contractor organizations, other government agencies, industry, and the public.

2.2 Program Elements

Properly implemented lessons learned should improve management decision-making during every phase of Department activity including initial program and project conception, facility startup, mature conduct of operations, reengineering, and systems and service retirement. As a component of planning and execution, management should establish expectations, provide resources, and monitor performance. The following HUD Enterprise expectations are intended to provide high-level guidance for developing, communicating, and using lessons learned.

2.2.1 Management Commitment

For OCIO organizations, responsibilities for using lessons learned and supporting the lessons learned program are established through Functions, Responsibilities, and Authorities documents.

For HUD contractors, requirements for lessons learned are translated into contract level requirements through the Federal Acquisition Regulations (FAR). Managers at the appropriate HUD and contractor levels are expected to support the lessons learned programs for their particular work. Management commitment should be expressed by demonstrating that lessons learned are developed and

communicated at all levels, shared with the rest of the HUD, and demonstrating that lessons learned are factored into local management systems and mechanisms for improving work performance.

2.2.2 Program Scope

Lessons learned should provide a powerful method of sharing good ideas for improving work processes, equipment design and operation, quality, and cost-effectiveness. While individual lessons may deal with narrow issues, the overall program should be broad in scope, with lessons from many facets of an organization– business, operations, management, and more. If an organization focuses only on failures or non-compliance issues, their overall lessons learned program's effectiveness will be reduced and they will miss opportunities to improve all their operations.

3. FUNCTIONS OF HUD's LESSONS LEARNED PROGRAM

Lessons learned (LL) programs will vary according to the needs of the organization; however, most will have at least six functions as shown in Figure 1. Each of these functions is explained in greater detail later.

Figure 1: Lessons Learned Program Functions

3.1 Collect

The first function of any LL capability or program is the collection of information relevant to an issue that someone has determined requires analysis. In an LL program, the issues are usually topics the organization realizes are causing concern or problems, and the organization wants to determine a better way to do business or enhance performance. Historically, most organizations are passive when it comes to reporting problems and potential solutions shared with other organizations, so those other organizations do not encounter the same difficulties. Normally, if someone does not make the effort to "pull" these issues from the organization, do not expect them to "push" them to you. Many reasons exist for this, such as operational pace, shortages of manpower, time constraints, a lack of understanding of the importance of sharing information, or no process in place that facilitates the sharing. Ultimately, the goal of any collection effort is to gather enough information to have an informed analysis that resolves the issue so other organizations can benefit from the experiences of those who have gone before them.

We do not collect lessons to evaluate an organization; rather, we collect lessons to help organizations improve. If the perception of the LL program is as an evaluator, an inspector, or an agency of internal review, no one will be willing to share problems and corrective actions. A policy of non-attribution may be appropriate. Make every effort to avoid personally naming individuals; instead, use titles or work positions. Try to avoid naming specific business units or offices if possible. For example, if you were collecting on the Configuration Management Office, instead of saying OCIO CM Office, simply say a CM component. In other words, be generic when it comes to sources but specifically when it comes to issues. To get the desired access and have credibility with your organizations, the LL program must be seen as trustworthy, unbiased, and able to guard sources when asked to do so. That said, information

gathered from a collection should not be watered down or altered. Collect the facts and only the facts, and try to avoid opinions.

Finally, there is a tendency in many LL programs to focus on what is not working well (the negative). A good LL program should also collect information on what is working well (the positive). "Best practices" are what we call positive observations. Certainly, the tendency is to focus on the problem areas, but you may find organizations that have mastered a certain task and can now share those best practices with others. As a rule of thumb, expect that 80 percent of what you collect may be negative (in an attempt to improve); however, 20 percent should be positive best practices.

Collection opportunities

Opportunities to collect information on issues conform to the mission of the organization the LL program is supporting. For example, a military organization may have the responsibility to protect our nation from foreign adversaries but also provide support to civil operations in times of national emergency. When you analyze that mission, many collection opportunities exist that can provide vital observations and lessons on how to best conduct those operations in the future. Although the participants should be the first line of observation reporting, often it becomes necessary for the LL organization to be proactive in the collection process. The following is a potential list of collection opportunities:

- Training events and exercises that prepare the unit for each of its specified missions.
- Experiments and testing that support the organization's mission.
- Planning sessions and conferences that support the organization's mission.
- Observing the actual event or mission.

As you can see from this list, there are several opportunities to gather information. To get the maximum benefit from these opportunities and match them to the available resources requires a long-range collection schedule be developed that overlaps the various opportunities and phases them in overtime so the workload is manageable. Typically, this schedule runs for one year and makes an effort to lock in dates and locations for each collection effort. In the example above, the occurrence of a natural disaster is difficult if not impossible to plan for; therefore, the LL program must have the capability to initiate impromptu collections on very short notice.

Independent LL organizations may need a collection schedule; however, organizations with smaller, internal LL programs may not.

Determining critical issues

One of the greatest challenges of the collection phase is determining what exactly are the issues that require a collective effort to be analyzed. There are several ways to accomplish this.[2] Often issues are "command directed." A governance body or organizational Managers directs the collection on a certain issue of interest to them. This makes life simple and usually allows you to avoid a deliberate process

[2] The PPM requires completion of lesson learned during the closeout phase, and annually during the Annual Operational Assessment Review.

whereby the LL program must decide what issues are most important. Sometimes a "*shotgun*" approach is effective. This approach understands that in every complex operation there are always issues that require work, and if the LL program is working, the issues will certainly be discovered. The disadvantage with this approach is that you do not focus, and you tend to look at everything, which dilutes your efforts.

Finally, a more analytical and deliberate approach would require some degree of analysis by the process, system, or service owner to determine the issues that are most important to OCIO management. A deliberate approach focuses your time and resources but requires a decision process to be developed to determine what is critical. One way to do this is to study past operations, reports, articles, and briefings and begin to compile a list of issues that seem to reoccur and cause difficulty. You can weigh each issue with its degree of importance, assess risk, rank order the issues, prioritize resources, and make a recommendation to senior leadership on which issues are most important for collection. Each collection effort will more than likely uncover new lessons and issues that can be added to the existing list. Once again, you will need to go through a process to determine which issues are most critical for future collection efforts.

The LL collection plan

Once you have determined the critical issues, you will need to develop a collection plan to guide the collection. A collection plan can be as simple as a list of questions you desire to ask the organization and its subject matter experts (*SMEs*) or as detailed as the following:

- Specific guidance for the observers.
- A delineation of collection responsibilities for each observer.
- A list of questions for each issue.
- A determination of the collection methodology for asking each question, which includes who will be asked each question.
- Identification of documents and resources to be used in conjunction with the collection effort.
- A schedule of interviews.
- Travel, support, and information management.

However, the common threads in all collection plans are the questions. You never answer a good question with a yes or no. The question should be worded in such a way that the person answering the question must give a full account of the process the organization is using. Follow these examples:

WRONG: Is your organization performing IPT meetings and briefings?

Are we measuring performance improvements in the functional areas?

RIGHT: How is the IT PM performing IPT functions?

How might we measure performance improvements in the functional areas?

As stated previously, you must avoid the tendency to collect on too many issues. More is not necessarily better. As a general rule but based on the size of your collection team, more than 10 issues for anyone's collection effort gets cumbersome. If a collection team can deploy with six to 12 lead questions already

prepared for each issue, that normally gives you the degree of fidelity you need to get good results. Additionally, the collection plan is only a plan. Once you begin to ask questions to the interviewees, there is nothing wrong with developing new questions "on-the-fly" that better address the issues based on the information you are gaining from the unit's SMEs. Do not get locked into the plan. It is only a start-point to get you moving in the right direction.

Finally, there is another collection plan technique you may or may not elect to use. It involves the use of a hypothesis statement for each issue. The hypothesis statement is a statement that defines what you want to confirm or deny about the issue. For example:

> **Hypothesis**: The PMO continues to have difficulty obtaining infrastructure support due to the lack of early Concept of Operations (*CONOPS*) submissions.

In this example, there is probably some anecdotal information that indicates the PMO is experiencing problems with the level of communications. Focusing on the collection plan will confirm or deny this issue. The use of a hypothesis statement is sometimes more beneficial in focusing your collection efforts when you are trying to confirm that a corrective has been applied and a change of behavior is anticipated for the better. For example:

> **Hypothesis**: The implementation of early submission of the CONOPS has greatly reduced the difficulty of obtaining on-time infrastructure support.

Figure 2 gives a sample collection plan format for briefing purposes on one issue. Again, the plan can be as detailed or as simple as the observer desires. The sample shows the issue and hypothesis, lists lead or key questions to ask, and describes the interviewees or individuals who will be asked the questions. Appendix A gives an example of a very detailed collection plan, and Appendix B gives an example of interview techniques.

Direct and indirect collections

- Now that we have a collection plan, you must begin to decide (if you have not already done so) how you intend to conduct the collection.
- An LL program will normally use two different types of collections, both accomplishing the same tasks but each using different resources.
    - **The direct** (sometimes called formal) collection effort always involves detailed planning and is generally a top-down driven process.
    - **The indirect** (sometimes called informal) collection effort uses much less planning and generally fewer resources but is typically a bottom-up process.

An example of a direct collection would be a team of SMEs assembled and trained on the collection process and how to build a collection plan, focused on specific issues generated by a higher authority, to complete a 30-day collection on a specific organization issue.

An example of an indirect collection could be as simple as an IT program/project (PM) manager in the PMO submitting an observation he or she wrote, which is forwarded up the chain of command, eventually getting to the appropriate governance body. This is sometimes called an unsolicited

observation. It may or may not be tied to an existing issue, but it is information that someone deems critical enough to take the time and effort to submit in writing from a lower echelon.

Although it is always challenging to get organizations to submit unsolicited observations, they are typically some of the best lessons an LL organization receives.

- **Issue:** Project Management (PM) core competencies
- **Hypothesis:** PM personnel participating in FAI certification and conducting non-standard missions are degraded by their PM core competencies.
- **Lead Questions:**
  - What nonstandard missions did you conduct?
  - How much of your time was spent on other than PM competencies?
  - How much time are you spending on conducting PM missions?
  - How has this experience impacted your primary skills of providing PM support?
  - What can the governance body do to help units doing nonstandard missions?
  - What sort of training would have better prepared you for nonstandard missions?
- **Interviewees:** IT PM, contractor PM, Business Analyst, PMO management

Figure 2: Example collection plan briefing

Another informal collection technique may be simple research. If a qualified analyst or researcher conducts extensive research on an issue and finds the right information and lessons, it may prevent the requirement for a direct collection effort, saving time and resources. In either case, the researcher or observer in each instance should have some degree of expertise in the area he or she is exploring, hopefully, an SME who can provide valuable insights into the operation.

The only reason for understanding the distinction between direct and indirect collections is to realize there are many ways to get LL. Some ways are more challenging than others. It may sound difficult to put together a direct collection team, but it is sometimes harder to get feedback from the field. Anyone involved with LL programs for any amount of time understands this. If timely feedback was so prevalent, there would be little need to deploy direct teams.

The use of a very instructive process as outlined in Appendix C called the after-action review/report (AAR) which directly supports the lessons learned process. You would think that this is an indirect process but one that requires a great deal of effort and time to execute. This process is one that produces some of the best and most timely lessons.

- The after-action review is a verbal discussion held after an operation or event with key participants to determine what happened, what worked, what did not work, and how to improve for the next event.
- The after-action report is a written document that highlights unit accomplishments and LL. It works well as a historical reference tool and is given to other organizations getting ready to participate in the same event.

Observation reports

The result of a direct collection effort should be a well-written observation report. Although modification may be necessary to correspond to any situation or desired format, the following sections are included:

- **Introduction**: The introduction may discuss the mission of the collection team, dates of the collection, and who was involved, and typically thanks the organizations observed for their support. It gives any other special instructions and may highlight the classification of the report.
- **Executive Summary** (EXSUM): The team chief leading the collection, with input from the individual observers, usually writes the EXSUM. It summarizes the results of the collection by issue. A good technique in the EXSUM is to list the overall top three or four issues that require immediate attention. Additionally, the EXSUM should cover what is working well. If someone reads only the EXSUM, they should get a good sense of what the collection was about and the results.
- **Chapters**: There should be one chapter for each collection issue. Each observer responsible for an issue should write his or her chapter. The chapter should start with a brief paragraph summarizing the major findings in this area. It should then list each observation and the associated lessons, recommendations, and any best practices in the prescribed format.
- **Appendices**: Miscellaneous information such as maps, charts, checklists, photos, operation orders, and briefing slides can be included here.

You can use several different formats to write an observation. One of the easiest to use is the issue-discussion-recommendation or observation-discussion-recommendation format:

- Title: The topic of the observation.
- Description: One sentence explaining the observation.
- Discussion: The major analysis of the problem is supported by facts and examples.
- Lessons: A list of any lessons observed to share with other units supported by the discussion.
- **Doctrine**, **organization**, **training**, **materiel**, **leadership and education**, **personnel**, **facilities** (**DOTMLPF**) Recommendations: Recommendations for corrective actions under each category that applies supported by the discussion.

The key to any format is that you thoroughly discuss the observation using facts and examples while trying to avoid opinions, highlighting any lessons, and making recommendations to fix the problem if you have the expertise to do so. When dealing with LL, do not mistakenly write a truism instead. A truism is something we know to be true at all times. At one point, it may have been an LL (a long time ago), but over time, it becomes enduring.

A good length for a written observation is one to two pages. Another thing to keep in mind is that the "*shelf life*" for an observation is about six months. This means that anyone who attempts to use the observation to justify an effort after about six months needs to confirm with the source that the observation is still valid. For example, maybe the source organization determined the observation will not be corrected for whatever reason, or maybe the observation was corrected, and it is no longer an issue. Using an old observation or observation report that is no longer valid to substantiate or justify a

project without making sure it is still an accurate assessment of the issue will show that you have not done thorough research.

For this reason, some LL organizations prefer to keep raw observations as internal reports, disseminated only to those who need the information. One technique to use is putting a statement in the front of the report that "warns" the user after a certain period to make sure they verify the status of each observation before citing them in another project. If you have the time and energy, a very good procedure is to update the status of each observation once any new information develops concerning its resolution. This requires a conscientious staff and considerable time and effort to monitor and track the actions associated with each observation, most of which may not directly involve the LL organization. The issues-resolution process, which will be discussed later, can provide information to support this effort.

Make every effort to keep the observation report classified at the lowest level possible. That said, it is the responsibility of the observer to ask the interviewee the sensitivity of the material he is receiving. If there is any doubt, always have the unit intelligence officer or facility security specialist confirm the classification of the information in question. Be especially careful with photographs taken or briefing slides with embedded pictures. Organizations that deal with classified information daily are sometimes sloppy in their handling and marking of documents.

Finally, out of courtesy, it is appropriate to let the organizations interviewed review a final draft of the observation report. In some instances, they may make recommendations that clarify what was given in the interviews. Typically, they should have at least two to three weeks to review the observation, a time you need to factor into your planning sequence.

What you must avoid is the tendency for the reviewing organization to "correct the report." Any LL program has the responsibility to present only the facts. One way to compromise on points of tension is to include the unit's opinion as an appendix. This should keep both sides happy.

Figure 3 highlights the LL process and where the collect function fits.

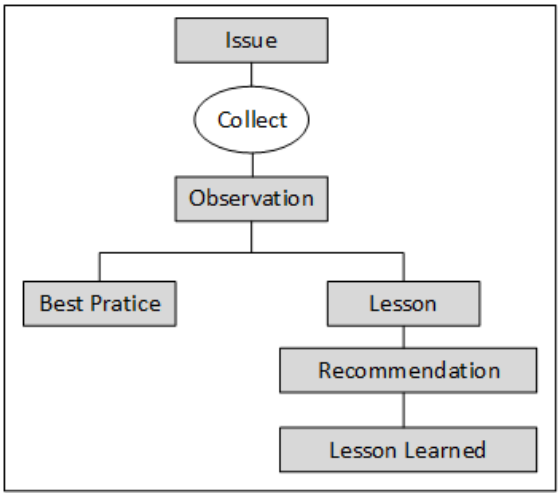

Figure 3: The LL process with the collect function

3.2 Analyze

The analysis is a process used to thoroughly understand areas of activity identified to have the potential for improvement. You can accomplish this action at the end of the event or after the active collection has been completed; however, a certain amount of analysis may be done throughout the LL process. Transforming the raw data into actionable recommendations requires a systematic process to examine the information that has already been collected and understand why or what contributed to the need for improvement. The level of analysis may be determined by the expertise or resources available or by time limitations in developing a final product. In some cases, it may be more important to conduct a surface analysis and expedite the results back to the user so they can start to take corrective action, whereas, with other observations, the complexity of the issue or resolution may necessitate a more detailed analysis and explanation. In either case, raw observations may change in context, content, conclusion, and applicability during analysis.

Validation of the observation

During this part of the analysis, you start to organize the data you have collected, ensure you have explored every possible resource, and agree on the direction and method the analysis should follow.

- **Frequency of occurrences**. Review previous observation reports, AARs, LL databases, and other reports to determine the frequency and conditions in which the observations have occurred. Is there a solution on record? An effort should be made to determine if the issue has been previously identified and a solution initiated but not yet implemented.
- **Understand the objective**. It is important to understand where to focus your analysis. While conducting the analysis, it is easy to identify additional issues that may cause you to stray away from the intended objective or the customer's needs. Consider capturing these issues and setting them aside for later collection efforts.
- **Review findings with the host organization or other stakeholders**. If not already accomplished during the collection phase, review the observations with the unit or organization where it was collected to determine if there were any unusual or contributing conditions for the issue. Do not provide recommendations at this point, since they may be based on the incomplete analysis.

Analysis of observed data

This is the step where the analysts start to analyze, brainstorm, and dissect the information collected. Use different perspectives when looking at the data to fully understand the issues, examine each piece to see if other issues exist, and start to develop the full story. It is critical to discover not only what happened but why it happened.

- Conduct additional research on the observation(s). This may require making follow-up interviews or phone calls, reviewing AARs or other collection reports, and searching existing LL databases for related information. Talking to other SMEs who are knowledgeable of the issue may also provide some missing information or confirm the data you have already collected.
- Seek expert consultation on the issue to help you understand the data you have collected, identify contributing factors, and help make informed recommendations. In most cases, you will not be an SME on the particular issue, so it is important to find someone who can answer questions, review the observation and recommendations, or participate in the analysis of the

collected data. If the issue is a piece of equipment or system, it may be necessary to contact the manufacturer or designer. If it is a training issue, you may want to contact the training center or proponent for the issue to see what is being taught and what is missing.

- Organize group discussions or "*murder boards*" to examine the observations in more detail, identify capability gaps, understand the root cause of the finding, and determine if there are related issues. Organize these discussions with someone designated to keep the discussion on track and the analysis of data moving in the right direction. Designate someone to record the results of the discussion. Displaying the data on a screen can be useful for the group to view and agree on the outcome, but it can also cause the discussion to get bogged down in "wordsmithing" and delays in the final product.
- There may be a requirement to conduct some basic statistical analysis of answers you received in questionnaires or interviews. It is important to interpret and sum up the results for the analysis and final report. Model the patterns in the data in a way that accounts for randomness and uncertainty in the observation. It may be useful to display this information in the form of charts or graphs in the final product to emphasize the frequency of observation, gaps in a capability, or need for a particular solution.

Corrective actions/recommendations

During this phase, you start to organize the results of the analysis and determine appropriate recommendations. If you do the collection and analysis correctly, the recommendations should be intuitive. The recommendations should say what needs to be done and not just what effect needs to be achieved.

- Prepare the results of the analysis in a format that is accurate and easy to understand. It may be best to first capture the data on briefing cards or in briefing slides to help organize the main points in a logical order. Add to the observation report once the data is developed and organized, as described in the Collect section above.
- Provide realistic, actionable recommendations. Making recommendations that are not feasible may only slow down the process of making any corrections. Try to designate the program area or organization that should lead the corrective action. It may also be helpful to include an implication statement or what the impact would be if the situation is not corrected.
- Support any conclusions with interview transcripts, statistical data, or other documents that will provide credibility to the observation and help facilitate the solution process.
- The analytical process transforms initial observations into best practices and lessons by grouping common observations to organizational functions.

The end state of the analysis process should be a well-defined list of recommendations or potential corrective actions with sufficient detail to be shared, achieved, and entered into the issues-resolution process. If done correctly, the analysis will help determine the action plan and resources required to implement the corrective actions.

Figure 4 highlights the LL process and where the analysis function fits.

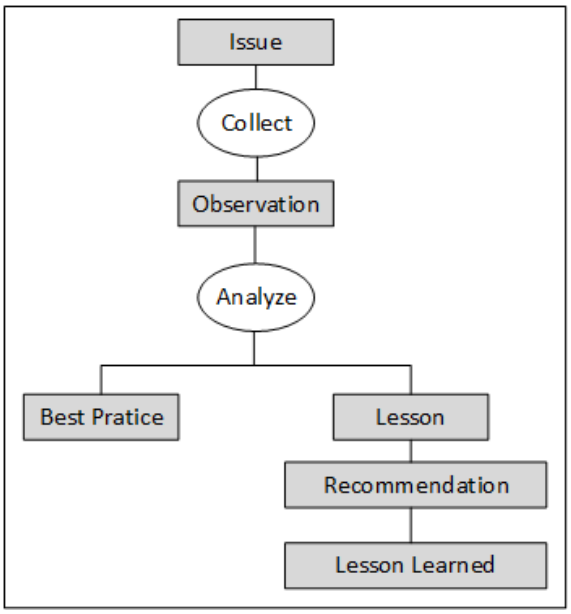

Figure 4: The LL process with the analyze function

3.3 Share

LL programs must have the ability to share and disseminate information to be effective. Besides the ability to share information, the LL program must be able to determine what information is important or urgent and how rapidly it must be passed to other organizations that could benefit from the knowledge. The LL program must have a process and medium to do this. You can share through several means, such as printed "hard copies," electronic forms like e-mail and messaging, collaborative forums, and websites. The process should support the capabilities of the medium. Additionally, you should have the ability to handle both classified and unclassified material. HUD has established a Lessons Learned portal dedicated to sharing and dessimination of lessons learned documentation created by program offices.

Prioritization of Information

The key to information or LL dissemination is a rapid sharing process. This requires an ability to rapidly analyze information from collections, determine relevancy and timeliness, and gain permission from leadership to share. The challenge in this process is the quicker you need to get the information out, the more risk you assume in conducting a thorough analysis to make sure you are drawing the correct lessons.

An example of one way to construct a rapid sharing process is depicted in Figure 5. In this example, the LL program has created timelines for sharing that are tied to the urgency of the information and a medium to disseminate that information. The terms immediate, urgent, and routine would need to be specifically defined to meet the goals of the supported organizations and their mission. However, once rapidly shared, the information should continue through the analysis process and eventually be formally vetted, archived, and become a part of the issues-resolution process, if it rises to that level of importance.

You can publish lessons of less priority as articles, reports, bulletins, and so forth. This is an excellent way to post timely, thought-provoking pieces that discuss best practices; lessons learned; and tactics, techniques, and procedures. An observation report, discussed in the Collect section, requires a longer lead time to produce because it is usually part of a direct collection effort involving a deliberate planning process. Finally, the production of a newsletter, handbook, or another periodical that may or may not go to a print plant for production usually requires the greatest resources and the longest lead times to produce. They may require anywhere from three to six months to develop and print; however, they additionally serve as excellent historical documents that may be very beneficial in supporting future operations.

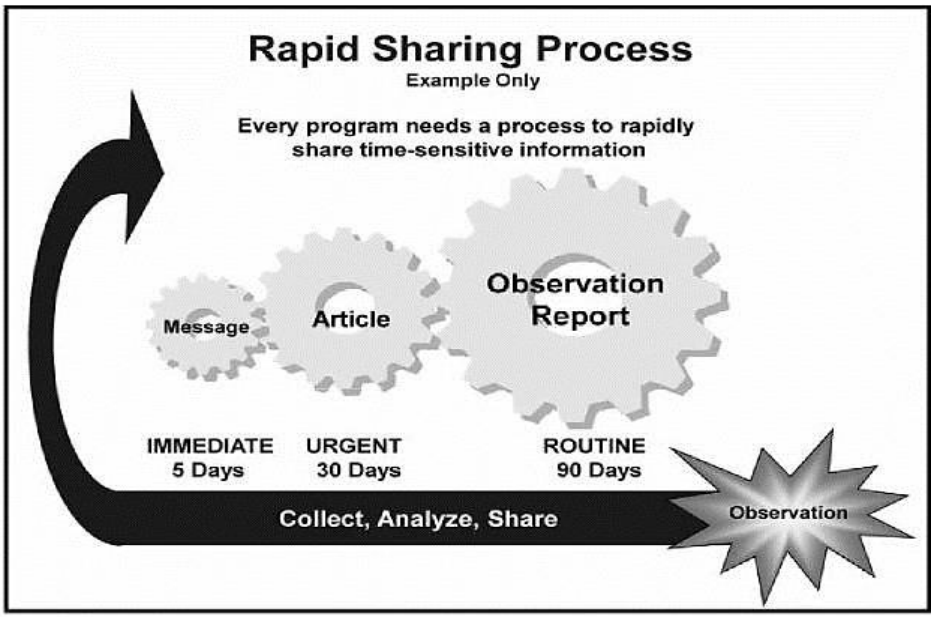

Figure 5: Example rapid sharing process

Publications and automation

As previously mentioned, the production of publications and the ability to disseminate information may be a consideration for any LL program. If you cannot share the information you collect, it is virtually useless. Some of the major functions of a publication's capability may be the following:

- Manage the publications process from the first draft to the final product to ensure consistency, clarity, and correctness.
- Ensure funding is available.
- Retain necessary editorial and graphic artist support.
- Accomplish all staffing actions before final publication.
- Coordinate with the printing office and print subcontractors to ensure a quality product is disseminated in a timely fashion.
- Work with the proponent and supporting agencies to coordinate solutions and exchange ideas on production efforts. Some examples of categories of potential publications based on the subject matter, size, and frequency are:

- Handbook: A “how-to” manual on a specific subject that generally takes a longer time to produce than most other publications.
- Newsletter: Normally less intensive than a handbook to prepare but focused on a specific topic of interest that may include opinions from a wide range of SMEs used to stimulate discussion and thought.
- Periodic Bulletin: Published weekly, monthly, quarterly, etc. Less intensive to produce than a newsletter and used to update the audience on information that is continually evolving or changing.
- Article: Prepared by an author to highlight a specific topic of interest.
- Special Study: A publication related to a specific operation, exercise, or subject, such as a country’s history, environmental cautions, cultural do’s and don’ts, and emerging doctrine or policy.
- Observation Report: Published after the completion of a collection effort that summaries the observations, lessons, recommendations, and best practices from the collection. An AAR would also be another form of an observation report the LL organization could publish.

Before publishing, one challenge to sharing information is the degree to which the LL program wants to edit material. There will be times when the editorial process should be eliminated or modified to facilitate the expeditious release of information critical to the success of the organizations being supported. As the saying goes, “perfection is the enemy of good enough.” The editorial process should not become so burdensome that it prevents a document from being published promptly. On the other hand, if time is not an issue, a professional product is always a good option.

Automation enhances the capability to share information. Although some organizations may prefer to retain a paper-based capability, that capability is usually expensive. Others may prefer a purely automated dissemination system using electronic distribution techniques such as e-mails, websites, and collaborative sites. Some organizations may prefer both capabilities, paper and electronic. However, making a portable document format (PDF) version of a document that is stored in HUD’s standard collaboration or project management documentation solution allows for easy document exchange and is low cost once the initial investment in automation is made.

You must consider to what extent the LL program wants to handle classified information. However, if your goal is the widest dissemination, it is best to avoid over classification. Some LL programs can create databases for cataloging observations and lessons that can be shared with other organizations. Not only can these databases store observations, but also they can archive the source material and reports that support each observation.

Figure 6 highlights the LL process and where the share function fits.

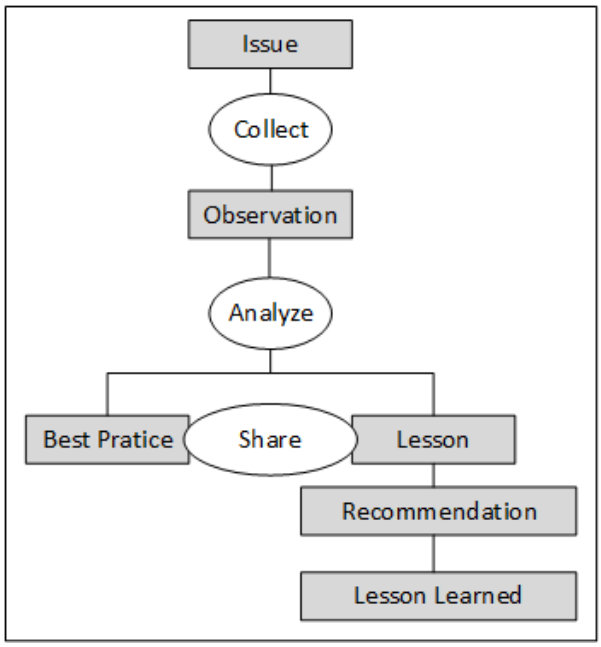

Figure 6: The LL process with the analyze function

Why don't people share?

- It's not convenient.
- They do not know what they know.
- They do not know the value of what they know.
- They believe knowledge hoarding is job security.
- They do not get credit for it.
- They do not have the time.
- They do not know-how.
- They do not know who is interested.
- Sharing of issues sometimes leads to additional work to fix.

If your LL program can begin to break down the barriers to sharing that are listed above, then you will be on your way to increasing the productivity and performance of the organization. Today, some organizations and companies have done just that.

3.4 Archive

The archive function is a broad term that encompasses several required capabilities that most LL programs desire. The ability to archive information and manage records, both print and electronic, allows access to them at a future date. To accomplish this task, digital repositories (which may be called digital libraries or archives) must be developed to store information, facilitate the historical preservation of information, and allow users to conduct research. Make it easily retrievable and available to any requestor by providing a logical system for storing information. Powerful search engines are required that permit rapid, user-friendly searches. Finally, repositories must have the capability to store and guard both classified and unclassified data.

Databases and websites

Databases and websites are necessary to store and access information. Some examples of what an LL program may desire for archiving are:

- Stand-alone applications to build collection plans.
- Stand-alone applications to save and catalog individual observations resulting from collections.
- Stand-alone applications to build AARs.
- Digital repositories to archive current information and/or older information.
- Programs that interface with other LL organizations.
- Organizational websites.
- Collaborative websites to share information.

The LL program can take advantage of this technology to increase its efficiency and ability to access information rapidly. One of the greatest challenges an LL organization will eventually face is the sheer volume of information that will accumulate in its archives. You will need to be constantly planning and determining the best new software to use to upgrade your capabilities and be open to new technologies.

Research

The primary reason to archive information is to have the ability to conduct future research. Research today no longer takes place on library shelves; it takes place electronically using the Internet. Searchable electronic archives will generally be of three types:

- Classified/Sensitive repositories.
- Unclassified repositories with access limited to specific groups, such as members of select organizations.
- Public repositories are available to all Internet users.

Searchable databases provide the researcher easy access to the information required. This capability necessitates the use of highly refined search engines. The use of standardized filing and naming conventions, protocols, and accurately tagging documents with the right metadata facilitates the search. The metadata describes what is in the document that leads you to the material you are trying to find. To ensure documents are properly processed, you may want to establish a quality assurance check. Additionally, the LL organization may require the capability to store printed material, therefore requiring a “vault” or physical repository for storage. The vault is also a good place to store back-up compact discs of all digital material archived electronically.

It is also beneficial to determine criteria for the inclusion of information in the repository. Some parameters are as follows:

- The item is from an official approved source.
- The item will add value for future research.
- The document’s handling restrictions are within the organization’s permissions.
- The security classification is within the organization’s authority to store.
- The document is not copyrighted unless you have on file written permission attached to the document.

The archives of the LL organization may be for internal use only. However, if outside agencies are permitted to gain access to the archives, they usually have read-only and download permissions.

Finally, the way information is cataloged or organized must be simple and easy to understand. One trap many organizations fall into is when these procedures are designed by information technology personnel and not by the users. To be simple and easily understood, the user must have input. The

ability to quickly find what you are looking for is paramount to any research capability. Simplicity is the key; the fewer keystrokes it takes to find a document the better.

Historical

Archived information serves a historical purpose, though the archiving and adding to the repository should take place as soon as possible after the creation of the document or information. Years from now, future generations may desire to study the accomplishments of the Department. They may also find those historical examples applicable to current operations. Archiving material where it can be easily retrieved serves this purpose. The lessons were instrumental in assisting units in their planning efforts. As a result, archiving information for future generations is a much-desired capability within any LL program. It will mean your hard work may get used more than once.

Requests for information (RFIs)

Every LL program should develop a system to answer questions or RFIs submitted to it from individuals outside the organization. Providing timely responses to questions is another way of sharing information. Some examples of this process were explained in the Share section of this chapter. The RFI system should be able to operate in both classified and unclassified communication networks. The system, to operate efficiently, should include an e-mail system, a workflow process, a document management application, a structured query language database, Microsoft Web services, and a Web interface. Once information is located to respond to the RFI, it can be sent by using links to the documents with the requested information. While anyone outside your organization should be able to submit an RFI, responses are provided based on the individual's rights as determined by their security classification or clearance. The key to any good RFI system is providing a timely response with some degree of analytical underpinnings, so the requestor gets the information in a manner requiring minimal analysis on his part, thereby making the information instantly usable.

3.5 Security

If the LL program handles personal Identifiable Information (PII) or sensitive but unclassified information, it must have the capability to review, store, and archive protected publications. Reviewing documents to determine the correct classification instructions or to ensure that documents are properly marked is a time-consuming procedure, typically requiring a separate security office to perform these duties. It will normally require dedicated personnel specifically trained to execute these tasks. Due to the sheer volume of publications coming from various sources, there can be mistakes made by the originators whereby briefings, reports, documents, etc. are improperly marked, which could lead to a security violation or "spillage" of classified data over an unclassified network.

The LL program must have the capability to perform electronic "keyword" searches on each document received to determine if classified information is embedded accidentally in a supposedly unclassified

document. Additionally, you should require the security team to brief and debrief all direct-collection efforts, so personnel are trained on the procedures to handle, store, and transport classified material. Scrub for classified information, and destroy or properly secure all notes and working papers once the collection is completed. Establish rules for the use of removable media such as thumb drives and compact discs early on to avoid loss or spillage of information not intended for public release. Besides, all laptop computers used by a collection team should be purged of all information once the team returns and is done with their use. Finally, consider other aspects of security, which include operational security to protect the organization's plans and procedures and physical security to protect the facility, equipment, and personnel.

Figure 7 highlights the LL process and where the archive function fits.

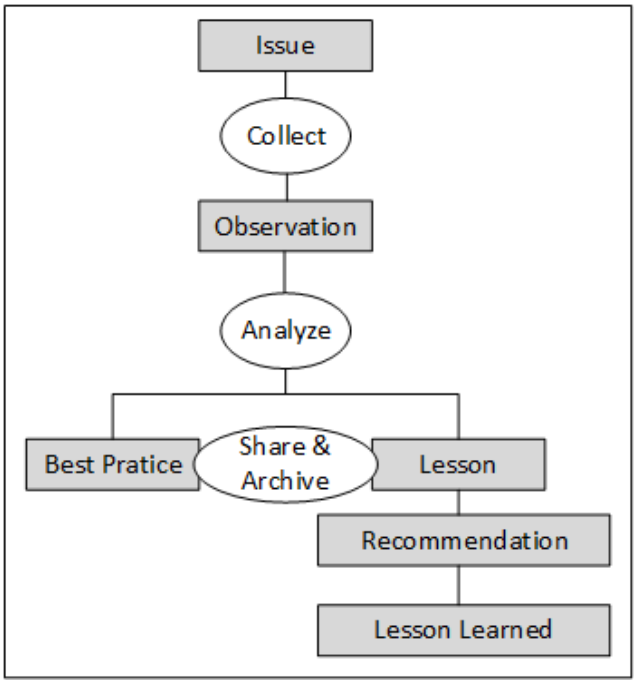

Figure 7: The LL process with the archive function

3.6 Resolve

The most challenging component of any LL program is establishing a process to legitimately resolve issues once the analysis is completed and as early and quickly in the process as possible. Issues resolution beyond the organization is challenging for several reasons:

- Issues resolution requires a "*forcing function*." This means it typically needs executive-level support and involvement. In the military, this translates into a general officer or flag officer participation in the process. Ideally, you should involve leaders at all levels who are willing to dedicate time and effort to resolve issues at whatever level they occur.
- Someone must determine which issues to tackle and are they willing to invest time and resources (funding and people) to bring about a behavior change. Do not resource LL programs to accomplish this task.

- To resolve any issue typically requires the involvement of more than one department or program office.
- Many issues require long lead times to resolve, especially if the issue requires a material solution.
- You can make a strong case that the LL organization is not the best organization to lead this process, since it has a vested interest in the collection process and any follow-on efforts to determine if the corrective actions are working.

Whether or not the LL program has responsibility for the issues-resolution process, the organization's ability to change behavior by implementing a lesson is ineffective unless you observe that change and a determination made that the lesson is learned. In other words, the corrective actions have enhanced performance. To do this requires a deliberate process to commit resources, make decisions, implement those decisions, and observe the results. If the process is cumbersome and too difficult, expect the results to be less than optimal. If the process takes on too many issues, expect the system to become overwhelmed and collapse on the sheer weight of taskings to agencies that simply cannot handle the additional workload. It is better to resolve your top three issues than to attempt to solve the 70 or 80 observations from the last collection. Understand that the level that developed the issue generally has the highest interest in resolving it.

Not all issues require a formal process to resolve. In the enterprise context, if a manager can correct an issue internally, they should do that. It is possible that during a collection effort the unit or organization becomes aware of an internal problem unknown to the leadership. The first objective is to handle the corrective action at the lowest level possible. The issues that rise to the next level of attention are those the unit or organization is unable to correct internally. Most LL programs will focus on these issues. They are issues that require assistance from sources outside the unit's chain of command. For example, a major modification to a vehicle system would be an issue that requires outside assistance and generally exceeds the ability of a typical military unit to correct.

The issues-resolution process requirements are summarized in Figure 8.

- Senior leader involvement.
- Determination to commit resources.
- Assign responsibility.
- Develop an action plan.
- Implement corrective action.
- Verify the lesson is learned.

Figure 8: Issues-resolution process requirements Senior leader involvement

Senior leader involvement or executive-level participation in the issues-resolution process is the key to success. Without senior-level leadership involvement with the authority to task agencies to work issues and reallocate resources, the process fails. If you cannot fix responsibility at the appropriate level, then the process becomes the end state. The process is not as important as the product. The product, in this case, is a corrective action that when implemented, changes behavior. To develop that product is not

an easy task and always requires someone to take ownership at a level able to direct others to complete actions and hold them accountable for their progress.

Determination to commit resources

If you want an effective LL program and an issues-resolution process, you should at some point present the issues gathered and analyzed to a leader who can assist in the prioritization process and make decisions to commit resources to solve problems. There will be few if any corrective actions that will not require the expenditure of some resource, be it time, additional manpower, or money. You will quickly determine you cannot fix everything. You can accomplish some things with fewer resources than others. For example, a change to written doctrine or policy typically requires less effort and expenditure of resources than a material solution for a piece of equipment or a new operating system.

To determine where to place your efforts requires a prioritization process or an ability to rank the issues from most important to least important. This may involve a risk assessment. Normally, risk assessments are subjective, and qualitative analysis becomes the norm. In some instances, a manager, based on his experiences, professional judgment, and "gut" instincts, can make a good assessment of risk. In other instances, the assessment requires the collective input and wisdom from a group of SMEs or other professionals. For example, the military sometimes uses a "council of colonels" to assist in making recommendations to more senior officers for a final decision. Civilian organizations may convene a director-level working group or use a board of directors. Eventually, you reach a consensus or you are directed where to place your efforts based on a combination of risk levels and resource availability.

The key is to focus your efforts on the most important things that need to be fixed, where you can get the greatest "bang for the buck." For example, in a military organization, every effort is made to fix those issues that may have life-or-death consequences; they are considered high-level risks. However, the challenge is sometimes greater in prioritizing issues that do not have that clear distinction. The goal of this requirement is to determine what you can correct and then begin to develop a plan to do so.

Assign responsibility

The person in charge with the authority to commit resources needs to pick a lead program office to work the issue. In most instances, there will be supporting offices that must assist the lead program office. It is rare in today's operational environment that only one program office can fix a problem by itself. Additionally, the LL program should not be the lead office. The LL program supports the resolution effort by providing guidance and information relating to ongoing or subsequent collection efforts that may inform or assist the lead office in its work. Typically, the LL program does not have the specific subject matter expertise or the resourcing to resolve major issues of a very important nature that require a formal action plan. Its focus should remain on continued collection efforts, analysis of information, and sharing the lessons with other organizations that may experience the same challenges as the agencies working to correct the issue. As stated previously, the first place an issues-resolution process will fail is by not having senior leadership involved in the process from the start. The second-place it will fail is by not assigning responsibility to a single program office to be the lead for corrective action.

Develop an action plan

Once a determination is made to solve an issue, an action plan should be developed by the lead program office with the responsibility to work on the issue. You should approve the plan, usually at the level that has authority to assign resources. The action plan summarizes the issue, weighs the risk, outlines a way ahead or timeline for resolution of the issue, and assigns responsibility. The plan can also specifically assign the resources required. It can be as complex or as simple as needed. The example in Figure 9 shows a simple "quad" sheet format for briefing purposes.

Risk levels are more important in initial decision briefings to determine prioritization. If you use risk levels, you must define what each risk level means. Once those are established and accepted, you can replace them with other necessary information categories, such as required resources/ constraints, essential tasks, or proposed end state. You can use any combination of categories to convey the necessary information and satisfy the desires of the briefing audience, as required. The goal of the action plan is to track the progress and milestones of the lead program office toward the resolution of the issue.

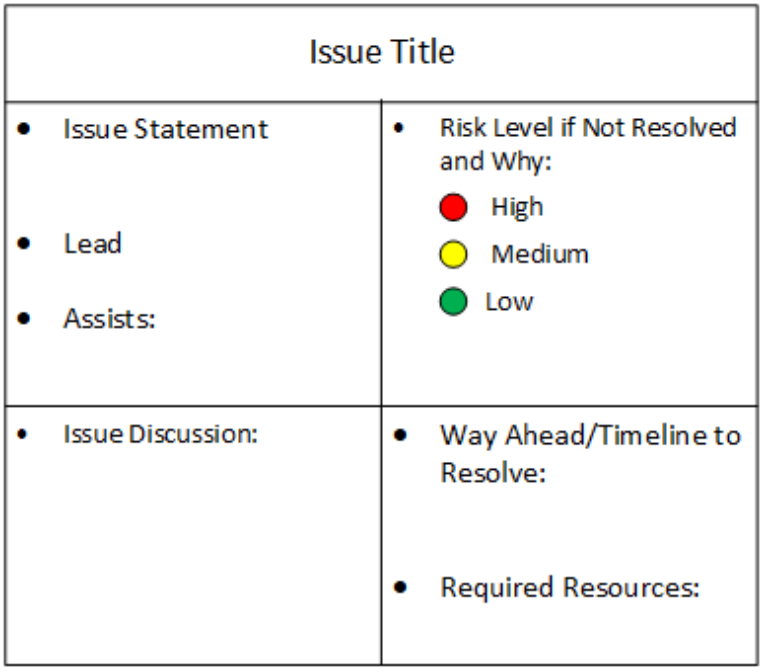

Figure 9: Example quad sheet action plan Implement corrective action

Implementation of corrective action is seldom the responsibility of the LL program. This, again, is one reason why senior leadership must be involved in the process. In some instances, training may be required before implementation. Implementing a corrective action could be a long and deliberate procedure well beyond the ability of any LL program to manage or control, or it could simply be a change to an existing policy or procedure. Like any solution to a problem, there will usually be costs to implement in terms of time, people, and/or money.

Verify the lesson is learned

Verifying the corrective action or lesson is "learned" once again comes under the oversight of the LL program. It will require an additional collection effort to validate the results. Whether that feedback is gained by a direct or indirect collection effort, the process is not complete until someone determines there is a change in behavior as a result of the corrective actions applied to the problem. The LL program must consider these additional collections as part of its overall responsibilities and plan/budget for them. This requirement to verify the lesson is learned is one reason why the LL program should remain as a "player" and not the "coach" of the issues-resolution process. By doing this, the LL program can remain the "honest broker" within the process.

When an organization is centered around people, the ability to change behavior is an ongoing process. This at times can frustrate an LL program, because it may begin to see the same mistake made over and over again, even after corrective action was applied. This should not discourage the program or indicate it is ineffective. Any good LL program understands this and adjusts accordingly by continuing to provide the most accurate information possible, so decision-makers can decide how they want to prioritize and focus resources to resolve new deficiencies while maintaining an ability to observe the success of implementing past corrective actions. The most important point to remember is that observation does not become an LL until the behavior has changed.

Figure 10 below highlights the entire LL process by function.

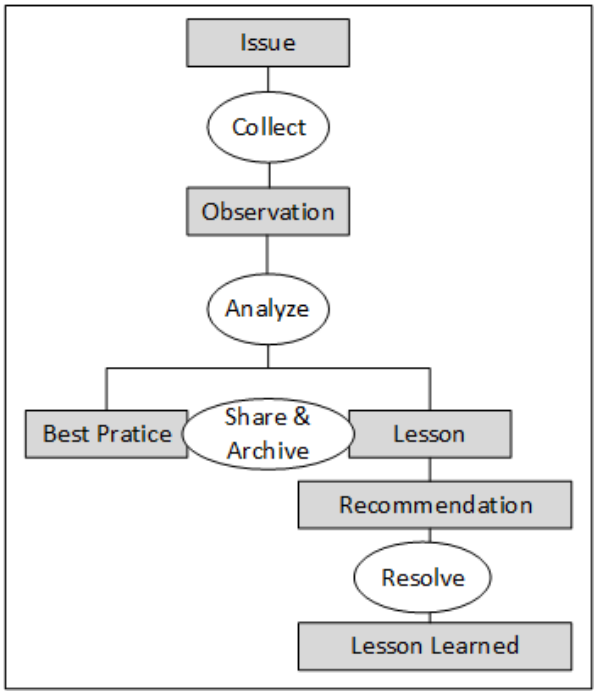

Figure 10: The LL process

Assess

There are several ways to determine if the LL program is effective. You can evaluate any LL program by the expenditure of resources against the desired results. It is difficult to determine through quantitative

analysis. However, there are some ways to evaluate the effectiveness of an LL program that may validate and justify its need. Assessment of LL effectiveness can be broken into several components: organization behavior, organization or unit performance, and mission effectiveness.

Observed behavior

If the training, education, or testing plan/program is not exhibiting the same errors or mistakes identified and addressed by the LL program, it is reasonable to conclude that the LL program has had a positive effect. Some factors that may affect this are the time required for the lesson to be disseminated and the time for changes in the training plan to take effect. You can discover observed behavior in plan and program reviews, event AARs, project reports, retrospectives, and summaries.

Lessons learned (and applied) are re-examined during active collection by the LL activity. Collection teams can look for older issues and determine if the problem still exists or if the problem was solved by information disseminated in the LL program.

Organization or unit performance

Verify LL and lessons applied by the charting organization or unit performance against established measures of performance (MOPs) for mission-essential tasks that must be performed by the organization or unit. MOPs are simply metrics of tasks the organization or unit must be able to perform with its organic resources to accomplish its mission. Examples of this are enough trained drivers; personnel properly trained and certified on equipment; and the ability to perform operational, logistical, and administrative tasks in keeping with organization policy, regulations, and, if applicable, civil laws.

Mission effectiveness

Lessons learned and lessons applied effectiveness can also be judged by the charting organization or unit performance against measures of effectiveness (MOEs). MOEs are more goal and objective centric. The chief criteria for MOE success are the questions, “Is the organization effective in the accomplishment of its mission, and is it supporting the overall goals, objectives, and missions of the parent organization?” If an organization has increased mission effectiveness over previous performances, you can attribute it to lessons learned and applied from the LL activity. However, there may be other factors that account for an increase in mission effectiveness; therefore, the additional collection may be required to verify the effectiveness of the LL program.

Establishing written procedures

Once you have decided the size and scope of your LL program, it is a good idea to formalize your program by developing a set of written guidelines, responsibilities, policies, and procedures. The military would call this a standing operating procedure. Whatever term is used, it is necessary to standardize your procedures in writing for several reasons. First, it is one way to get decision-makers and leaders to agree to the specifics of the program. Second, it is a document that everyone can read and become familiar with all procedures. Third, it allows participants to understand their specific responsibilities. Fourth, it can be used to support funding decisions, since you will have established procedures approved by your executive leadership. Finally, it gives you a plan that can be adjusted over time to accommodate changing priorities or direction in your organization or unit. The goal of written procedures is to enhance the unity of effort.

4. Organizational Considerations

Organizational structure plays a role. Organizational structure is a key component for the sustainability of information empowerment. An LL program will thrive under the following conditions:

- Where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together.
- In situations of rapid change, only those that are flexible, adaptive, and productive will excel. For this to happen, organizations need to discover how to tap people's commitment and capacity to learn at all levels.
- Where systemic thinking is the cornerstone of the learning organization, as the training that integrates all others to comprehend and address the LL as a whole.

Knowledge is more than data or information. Knowledge comprises a range of strategies and practices used in an organization to identify, create, represent, distribute, and enable the adoption of insights and experiences. Such insights and experiences comprise knowledge, either embodied in individuals or embedded in organizational processes or practice.

Knowledge management (KM) efforts typically focus on organizational objectives, such as improved performance, competitive advantage, innovation, the sharing of LL, integration, and continuous improvement of the organization.

Types of knowledge

There are three types of knowledge:

- Tacit: Personal knowledge that resides within an individual, which relies on experiences, ideas, insights, values, and judgments. The knowledge that is resident within the mind, behavior, and perceptions of individuals. Knowledge is developed and internalized by an individual over a long period, incorporating so much accrued and embedded learning that its rules may be impossible to separate from how an individual acts.
- Explicit: You can convey formal knowledge from one person to another in systemic ways such as documents, e-mails, and multimedia. This is knowledge easily codified and conveyed to others.
- Organizational: The combination of critical data, information, and knowledge with collective intellect, which enables an organization to learn from experiences, innovate, make decisions, create solutions, perform tasks, or change positions.

> ***Eighty percent of an organization's knowledge is tacit. Organizations must value and capture both.***

KM efforts overlap with organizational learning and may be distinguished from that by a greater focus on the management of knowledge as a strategic asset and a focus on encouraging the sharing of knowledge. KM efforts can help individuals and groups share valuable organizational insights, reduce redundant work, avoid reinventing the wheel per se, reduce training time for new employees, retain intellectual capital in an organization during employee turnover, and adapt to changing environments

and markets. The challenge for any LL program is to find a way to get people to share tacit knowledge among themselves.

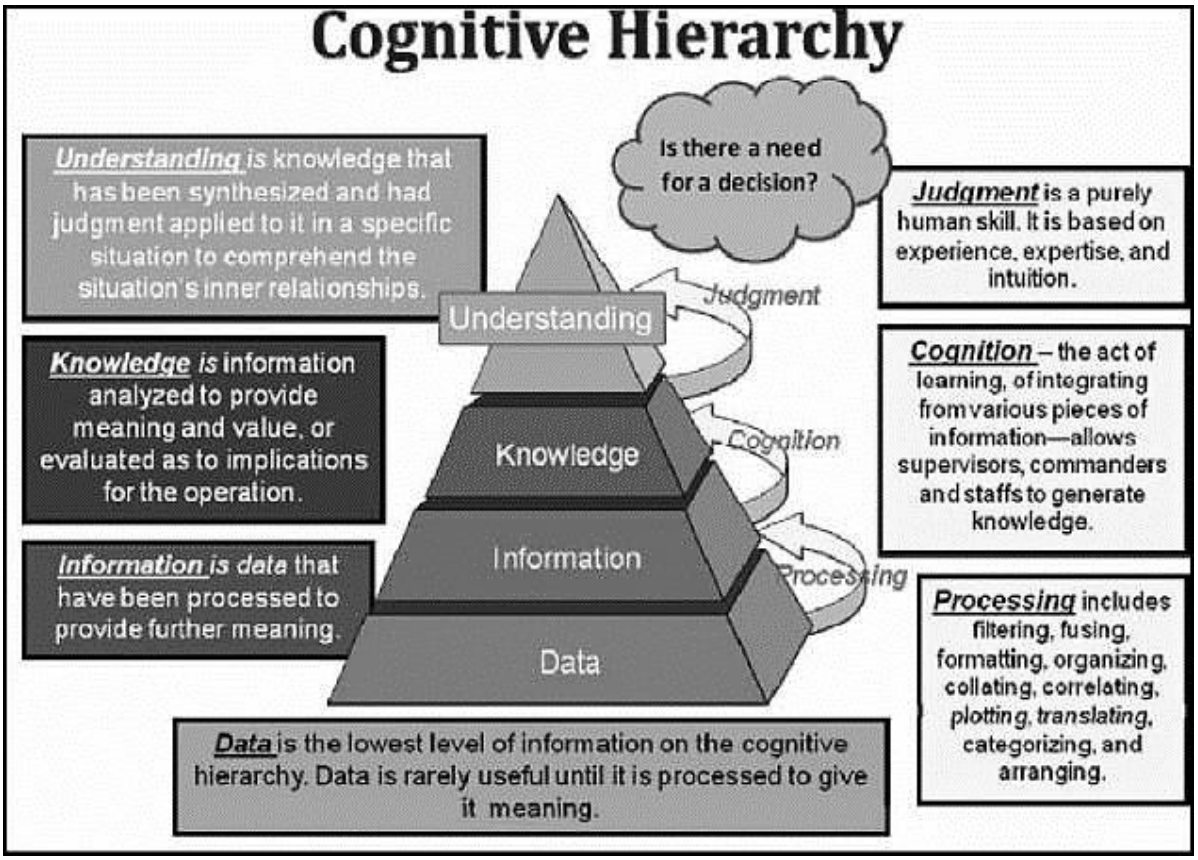

Figure 11: Cognitive hierarchy

Knowledge is meaningfully structured and based on experience. Some are usable as the basis for achieving understanding and making decisions. Other knowledge forms the background against which administrators or managers make decisions. The cognitive hierarchy, shown in Figure 11, portrays the place of data, information, and knowledge in developing understanding. This figure also shows the roles of KM and information management in this development.

Appendix A: Sample Detailed Collection Plan Format

Background. What is the situation this collection plan is covering?

Example: On 12 January 2010, the Caribbean island of Hispaniola was rocked by a 7.2 magnitude earthquake. The epicenter of the quake was just south of the Haitian capital city of Port au Prince, home to approximately two million of the roughly nine million people in the country. The devastation to the country was nearly total. Within minutes, tens of thousands of people were dead and hundreds of thousands were left homeless. So badly damaged were Haiti's government and infrastructure that it was virtually ineffectual and unable to adequately respond. It was one of the Western Hemisphere's most significant natural disasters in recent history. The U.S. government (USG) relief has been named Operation Unified Response.

Purpose. Why are you doing this?

Example: In its broadest sense, the purpose of the study is to collect best practices and lessons associated with the response by the USG and international community to the Haiti earthquake disaster. In particular, the study will examine Department of Defense (DOD) and USG interagency (IA) actions associated with Operation Unified Response in light of key lessons learned (LL) from USG participation in past international humanitarian assistance disaster relief (HADR) operations. This is to identify common themes that inform doctrine organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) solutions that can be applied to future USG HADR endeavors.

Key Tasks. What are the tasks necessary for this collection to make this happen? Who will do them?

Examples:

- Research Division: Research past flood after-action reports (AARs) and provide links and/or copies on the shared drive.
- Collection Division: Chair weekly meetings to review the past weeks' activities to determine what observations and lessons may have developed for rapid sharing.

End State. What will this effort produce?

Example: Referencing documented LL from USG participation in past HADR operations, identify challenges and issues associated with DOD and USG IA execution of Operation Unified Response, and identify and document applicable LL and best practices. The team will provide actionable recommendations through briefings and supplemental written products as required.

Scope. What are the limits of this collection effort?

Example: Per its charter as codified in Chairman of the Joint Chiefs of Staff Instruction 3150.25D, the Joint Center for Operational Analysis (JCOA) will focus collection primarily at the joint and operational levels. Specifically, activities and issues related to the Headquarters, U.S. Southern Command (HQ USSOUTHCOM), and its subordinate joint task force (JTF) component commands and supporting service entities/organizations involved in the operation, as applicable. Additionally, the collection will focus on aspects of DOD support to other USG entities, in particular combatant

commands, and service support to the Department of State (DOS) and the U.S. Agency for International Development (USAID), where there are clear lessons that either impact considerations for joint DOTMLPF or impact how the USG participates in future HADR operations of this magnitude.

Concept. How will this work together? Are there specific areas that need to be looked at based on past experiences and lessons?

Example: Using U.S. Joint Forces Command resources and coordinating with DOS, USAID, and other LL organizations, JCOA will conduct an in-stride study on the international HADR response following the Haiti earthquake, documenting challenges and best practices. JCOA will also serve as a "directed telescope," focusing on the specific issues the JTF and USSOUTHCOM leadership believe is most useful for meaningful outputs and for informing decision-makers on issues they need to consider. JCOA will provide initial and ongoing feedback on the evolution of the crisis, the changing tasks, and force requirements over time based on similar incidents — anticipating emerging challenges and possible complications.

Hypotheses and Related Questions. The hypothesis is a statement of what you are trying to confirm or deny for each issue in the collection plan. You will probably have multiple issues. List the questions you want to ask for each issue. They can be organized or grouped by staff function or by any other categorization process the collectors want to use. This is the most important section of the collection plan. You should never answer a good question with a yes or no.

Example: Speed of Response: The speed of response in moving people, equipment, and goods at the onset of a crisis is the most critical element of successful HADR operations.

- How would you rate the speed of response by the United States to this crisis?
- How would you compare the speed of U.S. response to other relief providers?
- What were the major enablers to a quick response?
- What were the major challenges to a quick response?
- How could the United States have better responded to this crisis? Methodology. How will this effort be organized?

Example: The collection team will organize to cover three distinct areas and purposes: JCOA reach back (Suffolk, VA); JCOA forward (HQ, USSOUTHCOM); and JCOA deployed in the joint operational area. The JCOA reach back team will be responsible for managing incoming data from forwarding/deployed team members, building the base briefing product, and conducting external coordination/collaboration, as required. The JCOA forward team will maintain continuity with current operational concerns/ considerations and focus activities on data collection — conducting interviews with key staff leaders to support the study — and provide feedback to the USSOUTHCOM staff. The JCOA deployed team will focus activities on data collection — conducting interviews with key leaders from DOD, international agencies, nongovernmental organizations, and private organizations to support the study — and provide feedback to the USSOUTHCOM staff.

Data Collection Procedures. What are you collecting and how?

Example: The key resources used to evaluate the study hypotheses are the data and interviews collected during the research. JCOA analysts will form data collection teams. Each team will be

required to address multiple lines of activity as it collects quantitative and qualitative data and conducts interviews of key personnel at various locations.

The following documents are typical of those needed to support the study. The list is not comprehensive, and other documents and data may be discovered by the deployed teams:

- Quantitative data sources:
  - Cables.
  - Mission reports/debriefs.
  - Significant activity reports.
  - Operation orders/fragmentary orders.
  - Standing operating procedures.
- Organization charts.
- Daily update briefings.
- Unit AARs.
- Memorandums.
- Briefings.
- Qualitative data sources:
  - Subject matter expert input.
  - Observations from meetings, conferences, and informal discussions.
  - Interview summaries and transcriptions (vignettes to support “the story”).

The roster of Key Personnel and Organizations

Example: Interviews of key personnel at all echelons involved with Haiti and other related operations will provide the key insights and professional opinions needed to validate the study hypotheses. Develop a list of key personnel and organizations to be interviewed and/or observed during the study. The list is not all-inclusive; other personnel may be identified to provide details pertinent to the study.

Data Management Procedures. How do you manage collected data? File name conventions? Location? Who has access? Who has release authority? What are the classification procedures?

Appendix B: Oral Interview Techniques

The most typical way to gather information during a collection effort is through the oral interview process. In contemporary knowledge management terms, oral interviews capture what often remains as "tacit" or silent knowledge, retained and used only by that individual, group of individuals, or unit so that others can benefit from that knowledge or experience too. There are three types of interviews: structured, semi-structured, and unstructured. Each of these has associated advantages and disadvantages, as highlighted below:

Table 1: Types of Interview Techniques

Type	Advantages	Disadvantages
Structured	High control. Minimal variability. Question response analysis possible. Easier to estimate duration. Easily managed.	Scripted. Little to no opportunity for discovery. Only get answers to what was asked.
Semi-Structured	Topic/Issue consistency. Opportunities for deepening. Opportunities for discovery. Topic response analysis is possible. More comfortable/relaxed.	Less controlled; introduces more variability since questions may not be identical. Requires more focus by the interviewer to manage/ guide direction. Requires time management.
Unstructured	Can elicit completely unanticipated information. No constraints: anything is OK. Extremely casual. Requires little management.	A comparative analysis is difficult. Least consistent (topics/ areas).

In most instances, the structured or semi-structured interview is the type preferred. Oral interviews have "pros and cons" that are good to understand:

- Pros:
  - Captures information that would otherwise not be saved.
  - Provides background information on given topics.
  - Provides personal insights.
  - Provides useful anecdotes and illustrations from the first-hand experience.
- Cons:
  - The oral interview may contain personal biases.
  - Some interviewees may be unwilling to discuss mistakes.
  - The limitation of human memory is the greatest challenge.

Interview Rules of Engagement

Interviews should be conducted by a two-person team, whenever possible. For key interviews, use a digital recorder with interviewee approval. Explain who you are upfront, the mission of your

organization, and the purpose of the collection effort. Explain that you are there to identify and collect information to support the "why it happened" based on factual examples and that you want to avoid personal opinions, if possible unless they bear directly on the issue. It is also good to highlight what the final product of the collection will be and to tell the interviewees how they can receive a copy of the observation report. Generally, you will explain to the organization that it will be able to review a draft copy of the report before it goes to final print. Remind the interviewees that you are not an evaluator or inspector, and rules of non-attribution will be in effect if they so desire. You are there to get them to "tell their story" and to make recommendations on how the performance of units or organizations that follow them may be improved by benefiting from their experiences and lessons learned (LL). Tell the interviewees you do not conduct interviews "off the record," and thank them for their time and participation.

Before you start the interview, it is appropriate to ask a few lead-in questions that are not part of the collection plan but are designed to give the interviewer an idea of the qualifications and experience level of the interviewee. This gives you an idea if you are talking to the right subject matter expert. The following questions are examples you can use:

- How long have you been with the organization?
- How long have you had this current job or position?
- How familiar are you with your personnel and with applicable policy or doctrine manuals?
- What type of training did you receive before you deployed or got this job, and were you satisfied with it?

Before the Interview

- Write out a list of questions beforehand. This is your collection plan.
- Try to construct the interview chronologically or by some other logical construct.
- Contact and orient the interviewee before the interview.
- Provide questions to the interviewee in advance, if possible. In many instances, military units will request a full list of the questions (the collection plan) that will be asked weeks before the collection starts.
- Make sure your digital recorder is functioning properly and you know how to use it. Carry extra batteries.
- Bring notepaper and pens.
- Two sets of ears are better than one, so take a team member with you, if possible.

During the Interview

- Make introductions.
- Explain the purpose of the interview and the collection effort. Ensure the interviewee understands you are not an evaluator or inspector.
- Get permission to digitally record the interview.
- Turn on the recorder, state your name, the name of the interviewee and his job position, and the date, and announce that the interview is unclassified. Do not ask for personal information, such as the interviewee's social security number.
- If possible, use two digital voice recorders at the same time for backup.

- Tell the interviewee that if he goes into a classified area, he must state so beforehand so you can turn off the recorder.
- Ask your lead-in questions to determine the experience level of the interviewee, and then start with your prepared questions.
- Take notes, but try to keep your focus on the interviewee. If two interviewers are present, one can take notes and the other can give attention to the interviewee.
- Interject new questions if necessary to clarify or go into more detail on certain points; this is the "art" of interviewing.
- Sixty minutes is about the maximum length for an interview at one sitting.

After the Interview

Fully write out the observation as soon as possible following the interview. This is very important. The information is fresh and you have less chance of confusing it with other, possibly conflicting, information at a later date. It is best if you can write the full observation within 24 hours of the interview. A good goal is to write it the evening following the interview. After conducting several interviews, it is very easy to confuse sources and recommendations. If you have the time, invite the interviewee to make revisions or clarifications to the text, point out confusing passages, and ask if you have correctly stated the observation.

Label the tape with name, date, and location, as required. If there is a chance observation is classified, have the unit security officer review it. Make the necessary changes in an attempt to keep the observation unclassified.

Thank the interviewee for his time. Ask for phone numbers and e-mail addresses and if you can contact him in the future for any additional clarifications once the observation report is in the draft.

Review "due outs" from or to the interviewee. Make sure you follow through by providing any materials or information requested by the interviewee from the LL organization's archives or databases that will help him do his job.

Summary

Be prepared. Always read up on the subject you are reporting about and the person you are interviewing. Set the rules for the interview upfront. Be sure your subject understands what you are working on and the issues you are addressing. Be on time. The worst impression you can make is being late for the interview. Be polite and do not rush your interviewee. It is important to establish rapport and a level of comfort. Listen but do not be afraid to interrupt when you do not understand a point. Try to maintain eye contact. This will make the interview more like a conversation and enable everyone to be more relaxed. Finally, review your notes right after the interview and make any clarifications necessary. After interviewing several people, your notes will begin to "run together" if you do not have some way to draw distinctions between each interview.

Begin the interview by reading this brief introductory statement. (The introductory statement must be recorded.)

This is (interviewer's name) _____

The date is (month, day, year) _____

This interview is with (first name and last name): _____

who has served as (job title) _____

for (name of organization) _____

since (month/year) _____

This interview will address the topic(s) of (list major topics of discussion):

_____

_____

The purpose of this interview is to collect information based on needs, recommendations, and suggestions that can be used to improve company capabilities. The information will be used to support management in the execution of responsibilities to organize, train, equip, and move toward a more efficient running organization. This interview may be transcribed and posted to the company website for review by authorized individuals. The information from this interview may be made available to other companies. If you prefer, we can interview on a non-attribution basis, meaning the interview is recorded and transcribed, but identifying information is removed to make you anonymous.

Do I have permission to record this interview and associate your name

with it? (Subject Response: Yes/No) _____. Your candidness during the interview is appreciated, but understand that we cannot offer legal immunity for the information you disclose. Do you have any questions before we start the interview? (Subject Response: Yes/No) _____

Begin interview questions.

Closing: "Thank you for your participation. This concludes the interview."

Figure 12: Interview outline

Interview Summary Worksheet	
Instructions: Indicate whether the interview is to be transcribed or not and indicate the priority. Summaries are to be completed by the interviewer. After completion, upload this form to the company website. Send an e-mail to the transcriptionists to notify them that the interviews and/or summary worksheets have been uploaded. An alternative is to e-mail the summary worksheets and/or interviews as an attachment.	
○ Interview to be transcribed Priority for transcription: ○ High ○ Medium ○ Low	0 Interview to NOT be transcribed (due to poor audio quality, low precedence, in written form only, etc.)
Identifying information	
Date of interview:	
Location:	
Interviewer's name (First, MI, Last):	
Subject's name (First, MI, Last):	
Unit:	
Office:	
Primary topics of discussion:	
Acronyms:	
Needs statements:	

Figure 13: Interview Summary Worksheet

Guidelines for Writing a Lessons Learned Report

A report of LL should address some key issues:

- Assessment of goals and objectives.
- Identification of activities or areas needing additional effort.
- Identification of effective activities or strategies.
- Comparison of costs and results of different activities.
- Assessment of the roles of organizations in the project and the interactions among the organizations.

To assess goals and objectives, consider these questions:

- Were the program objectives appropriate for the program goals?
- Were the objectives met?
- Does any new information about the issue need to be incorporated into the program messages or design?

To determine areas where additional effort is needed, consider these questions:

- Were any objectives unmet?
- Were any strategies or activities unsuccessful?

To identify effective activities or strategies, consider these questions:

- Were some objectives met as a result of successful activities?
- Should these activities be continued, renewed, and strengthened?
- Can you expand these activities to apply to other audiences or situations?

To compare costs and results of different activities, consider these questions:

- What were the relative costs (including staff time) and results of different aspects of your program?
- Did some activities appear to work as well as others but cost less?

To assess the roles of organizations in the project and the way these organizations worked together, consider these questions:

- Did any conflicts of organizational agendas or operating styles occur?
- How did the timing of the program coordinator with the different organizations involved?

Appendix C: After Action Reviews/Reports

One of the most important collection techniques used in the Government and many other organizations is the after-**action review/report** or AAR. The concept of the AAR can be easily adapted to fit anyone's lessons learned (LL) program, whether it is government or civilian. However, the examples used here are worded to support a military organization.

When the term AAR is used, it can mean two different collection techniques; however, both provide very important observations and lessons to a military unit, its higher headquarters, and the force in general. The two forms of AARs are:

- After action review: A verbal, professional discussion of a unit's actions that typically occurs immediately after a training event, combat operation, or other mission that determines what should have happened, what happened, what worked, what did not work and why, and the key procedures a unit wants to sustain or improve.
- After action report: A written report that is typically submitted after a training, combat operation, or other mission that normally documents a unit's actions for historical purposes but also provides key observations and LL. Portions of this document are very similar to an observation report.

The following pages provide sample formats that are examples only and can be easily modified to meet any situation or mission. Admittedly, these examples are designed for tactical military formations. However, the basic concepts can be adapted to any government or non-government organization. The main point is that any good AAR must provide LL to ultimately improve and enhance organizational performance.

After Action Review Format

Introduction and Rules

The training exercise or operation is over. It is now time to conduct the AAR. A facilitator for the AAR should be designated. For training events, the AAR facilitator may be an observer/trainer who controlled the exercise. His introduction should include the following thoughts:

- An AAR is a dynamic, candid, professional discussion of training that focuses on organization performance against the OCIO standard for the tasks being trained. Everyone can, and should, participate if they have an insight, observation, or question that will help the unit identify and correct deficiencies or maintain strengths.
- An AAR is not a critique. No one, regardless of rank, position, or strength of personality, has all of the information or answers. AARs maximize training benefits by allowing members, regardless of position, to learn from each other.
- An AAR does not grade success or failure. There are always weaknesses to improve and strengths to sustain.

Figure 14 contains a recommended sequence for conducting an AAR.

Members' participation is directly related to the atmosphere created during the introduction. The AAR leader should make a concerted effort to draw in and include Members who seem reluctant to

participate. The following techniques can help the leader create an atmosphere conducive to maximum participation. He should—

- Enter the discussion only when necessary.
- Reinforce the fact that it is permissible to disagree.
- Focus on learning, and encourage people to give honest opinions.
- Use open-ended and leading questions to guide the discussion of members, managers, and organization performance.
- Appoint a note-taker.

In some instances, it may be appropriate to separate AARs by a member to get candid comments. This may be more important for the lower enlisted ranks.

Sequence for Conducting AARs

- Introduction and rules.
- Review of objectives and intent:
  - Training objectives.
  - Management's mission/intent (what was supposed to happen).
- Summary of recent events (what happened).
- Discussion of key issues:
  - Chronological order of events.
  - Mission functions.
  - Key events/themes/issues.
- Discussion of optional issues:
  - Tasks to sustain/improve.
  - Fratricide.
  - Member/Manager skills.
  - Statistics.
- Discussion of force protection (safety).
- Closing comments (summary).

Figure 14: Sequence for conducting After Action Report

Review of Objectives and Intent

Training Objectives

The AAR leader should review unit training objectives for the training mission(s) the AAR will cover. In combat, he should review the objectives of the operation. He should also restate the tasks being reviewed as well as the conditions and standards for the tasks.

COrganization's Mission and Intent (What Was Supposed to Happen)

Using memorandums, operational graphics, and so on, the manager should restate the mission and his intent. Then, if necessary, the discussion leader should guide the discussion to ensure everyone understands the plan and management's intent. Another technique is to have subordinate managers restate the mission and discuss their manager's intent.

Summary of Recent Events (What Actually Happened)

The AAR leader now guides the review using a logical sequence of events to describe and discuss what happened. He should not ask yes or no questions, but encourage participation and guide the discussion by using open-ended and leading questions. An open-ended question has no specific answer and allows the person answering to reply based on what was significant to him. Open-ended questions are also much less likely to put the person on the defensive. This is more effective in finding out what happened. For example, it is better to ask,

"Mr. Johnson, what happened when your system began processing data?"

rather than—

"Mr. Johnson, why didn't you engage system override when the system shutdown?"

As the discussion expands and more members of the team add their perspectives, what happened will become clear. Remember, this is not a critique, evaluation, or lecture; the AAR leader does not tell the member or other manager what was good or bad. However, the AAR leader must ensure specific issues are revealed, both positive and negative. Skillful guidance of the discussion will ensure the AAR does not gloss over mistakes or unit weaknesses.

Discussion of Key Issues

The AAR is a problem-solving process. The purpose of the discussion is for participants to discover strengths and weaknesses, propose solutions, and adopt a course of action to correct problems. Managers can organize the discussion using one of the three techniques in the following paragraphs.

Chronological Order of Events

This technique is logical, structured, and easy to understand. It follows the flow of training from start to finish and allows members to see the effects of their actions on other units and events. By covering actions in the order they took place, team members and managers are better able to recall what happened.

Key Events/Themes/Issues

A key events discussion focuses on critical events that directly support training or mission objectives the chain of command identified before the operation began. Keeping a tight focus on these events prevents the discussion from becoming sidetracked by issues that do not relate to the objectives. This technique is particularly effective when time is limited.

One of the strengths of the AAR format is its flexibility. The manager could use the chronological format to structure the discussion; then, if a particular action seems to have systemic issues the group needs to address, follow that action across the entire exercise. Once that topic is exhausted, the AAR could proceed using the chronological format. Each technique will generate discussion to identify unit strengths, weaknesses, and training the unit needs to improve proficiency. However, the Manager must remember to:

- Be specific, avoiding generalizations.
- Be thorough.

- Not dwell on issues unrelated to mission accomplishment.
- Focus on actions.
- Relate performance to the accomplishment of training objectives.
- Identify corrective action for areas of weakness.
- Continually summarize.

Discussion of Optional Issues

In addition to discussing key issues, the Manager might also address several optional topics, included in the following paragraphs.

Tasks to Sustain/Improve

This technique focuses on identifying tasks on which the unit is proficient and tasks on which they need further training. The intent is to focus training on mission-essential tasks and supporting Member—ber, Manager, and collective tasks that need improvement rather than training to known strengths. Although it is important to sustain proficiency on tasks whose standards the unit has met, it is more important to train to standard on new or deficient mission-essential tasks. Train to weakness, not to strength.

Statistics

Statistics is a double-edged sword. Effective feedback requires participants to measure, collect, and quantify performance during the training exercise. Statistics supply objective facts that reinforce observations of both strengths and weaknesses. The danger lies in statistics for statistics' sake. Chart after chart of ratios, bar graphs, and tables quickly obscures any meaning and lends itself to a "grading" of unit performance. This stifles discussion and degrades the AAR's value. Statistics and statistics-based charts should identify critical trends or issues and reinforce teaching points. An example of an armored unit would be to link the number of rounds fired to the number of enemy vehicles destroyed. This would provide a good indication of unit gunnery skills. Judicious use of statistic feedback supports observations and provides a focus to AAR discussions.

Closing Comments (Summary)

During the summary, the AAR Manager reviews and summarizes key points identified during the discussion. He should end the AAR on a positive note, linking conclusions to a future training. He should then leave the immediate area to allow managers and Members time to discuss the training in private.

Written After Action Report Format

The template below (Figure 15) serves as an excellent guide to what a manager may elect to cover in his unit's written AAR. The AAR provides TTP and LL for dissemination to the OCIO.

The AAR can be organized by phases, as in the example. It should be arranged chronologically, where possible. The format is flexible; however, two key purposes of the written AAR should be to (1) document the operations conducted by the unit for historical purposes and (2) provide best practices and lessons in the observation-discussion-recommendation format that can be used to inform the Agencies' LL program (see example in Figure 16). What worked well should receive as much attention as what did not.

1. Report cover page:

   Classification.

   Preparing headquarters or organization.

   Location of report preparation.

   Date of preparation.

   AAR title.

   Period covered: (date to date).

2. Preface or foreword signed by the senior manager.

3. Table of contents.

4. Executive summary and chronology of significant events:

   Briefly summarize operations for all phases; include key dates for each phase starting with deployment and ending with redeployment.

   Include numbers of team members involved.

   Summarize task organization.

   Summarize casualty information.

   Summarize key LL.

   What were the single greatest success and the single greatest shortcoming or challenge from the unit's perspective?

5. Detailed task organization. Include any significant changes/dates as appropriate:

   Wiring diagram, including operational organizations.

   Relationship to higher headquarters and list of subordinate elements.

6. Predeployment phase with dates:

   Organization's training focus.

   What should have been accomplished during predeployment that was not accomplished?

   What was helpful to know when planning the deployment? What did you wish that you had?

   Discuss logistics and personnel shortages, if appropriate. Discuss planning for rear detachment operations.

Discuss predeployment LL in the observation-discussion-recommendation format.

7. Deployment/reception, staging, onward movement, and integration (RSOI) with dates:

Summarize deployment/RSOI operations.

Discuss RSOI LL in the observation-discussion-recommendation format.

8. Operations phase with dates:

   Summarize tactical and nontactical operations (sometimes beneficial to do this by staff section).

   Include unit participation in named operations.

   List of key operation orders (OPORDs).

   Discuss operations phase LL in the observation-discussion-recommendation format.

9. Relief in place/transfer of authority (RIP/TOA) with dates: Discuss planning and overlap.

   List or discuss key discussion topics between outgoing and incoming organizations.

   Include (either here or as an appendix) any SOPs, TTP, or checklists.

   Discuss RIP/TOA LL in the observation-discussion-recommendation format.

10. Redeployment activities with dates:

    Summarize redeployment activities and highlight planning guidance either developed or received from higher headquarters.

    Include (either here or as an appendix) any list of instructions, TTP or checklists developed.

    Discuss redeployment LL in the observation-discussion-recommendation format.

11. Post-deployment activities:

    Discuss post-deployment LL in the observation-discussion-recommendation format.

12. Provide an index/listing of all mid-tour and final unit AAR products, significant command briefings, or reports published separately:

    Include classification, titles, and distribution/disposition of reports.

    Include a point of contact or section for follow-up coordination.

13. Distribution (of this report).

14. Appendices (as appropriate):

    List of each named operation or major event with dates.

    Applicable maps.

    Photographs.

    Copies of key Operational Directives.

Particularly useful TTP or unit products developed.

Predeployment site survey information.

Unit daily journals.

Figure 15: Sample observation-discussion-recommendation format

Observation: Media-on-the-battlefield training was poorly conceived and planned.

Discussion: The role-player journalists were not sufficiently trained for the task they were to perform, and they were not resourced properly. They did not know the scenario and asked unrealistic questions. They did not provide a realistic representation of a journalist on the battlefield from a major news organization.

Recommendation: You must train role players for media-on-the-

Operational scenarios. Role players should be given a character description so they can act the part. They should understand the media credential system, ground rules, and the scenario in general. They should be capable of engaging in a dialogue to determine the essential elements of a news story.

Figure 16 Sample observation-discussion-recommendation format

Appendix D: Definitions

Actions:	Specific activities are taken as a result of a lesson learned. Actions may include: 1) Corrective Actions (actions taken as a result of the analysis of an experience); 2) Preventive Actions (actions are taken to prevent a negative situation from occurring); or **3)** Improvement Actions (actions are taken to improve the efficiency of operations based on a good work practice or an innovative approach).
Causal Analysis:	A review of an activity to determine the root cause, to identify less than adequate contributing systemic factors, and to prevent further concerns.
HUD Enterprise Lessons Learned Program:	The collection of HUD and contractor organizational lessons learned programs sharing information to improve performance.
Good Work Practice:	A positive lesson or activity that has the potential to be the basis of significant improvements or cost savings.
Lesson Learned:	A "good work practice" or innovative approach that is captured and shared to promote repeat application. A lesson learned may also be an adverse work practice or experience that is captured and shared to avoid recurrence.
Organization:	The site, plant, facility, function, or location for which the lessons learned program is implemented.
Subject Matter Expert (SME):	An individual qualified and experienced in performing a particular task. A Subject Matter Expert may also be an individual who, by education, training, and/or experience is a recognized expert on a particular subject, topic, or system.