

CONSTRUCTION INDUSTRY INSTITUTE

MODELING
THE
LESSONS LEARNED PROCESS

Construction Industry Institute

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Modeling the Lessons Learned Process

**Prepared by
The Construction Industry Institute
Modeling Lessons Learned Research Team**

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Executive Summary

Learning is a natural, and an inevitable, part of the human experience. Lessons are learned daily through personal experiences, and collectively these lessons build an individual's knowledge base. Organizational learning, however, is more complex. In the business environment it becomes important for individuals to be able to share their experiences with others effectively, and to develop work processes that capture these experiences for the benefit of future endeavors.

CII Research Team 123, Modeling Lessons Learned, was chartered to develop a comprehensive lessons learned process for managing organizational learning. The term "lessons learned" is defined as "knowledge gained from experience, successful or otherwise, for the purpose of improving future performance." The research team hypothesized that lessons learned represent knowledge, and that knowledge is an asset to an organization and has value.

The research has confirmed that there is indeed value in managing organizational knowledge using a Lessons Learned Process (LLP), but that significant cultural, work process, and technology issues must be addressed to be successful.

"What's the Payback?"

Implementation of an LLP requires an up-front allocation of scarce resources. Research Team 123, however, has confirmed that implementing an LLP can result in a substantial return on investment. By leveraging knowledge, employees can be trained more quickly, provide better support, and avoid costly errors. Over the past decade, CII has identified best practices such as constructability, partnering, schedule compression, and team building, all of which add value and reduce a project's total installed cost. The LLP will help to maximize the benefits of these best practices by providing a structured approach

to “learning from experience.” Implementation of an LLP is a key component in achieving continuous improvement, and can have a significant impact on achieving overall project success.

Work Culture — The Vital Ingredient

Implementing a successful LLP is not simply a matter of “installing” a new work process. An organization’s work culture is a vitally important factor in achieving success. This report identifies the attributes of successful organizations, describes the suggested LLP work process, and lists the keys steps for successful implementation. The LLP work process description is further enhanced by the new *LLP Wizard* software application, which is also described.

Moving Toward a “Learning Organization”

The successful implementation of an LLP requires a commitment from all levels of the organization. When properly implemented and maintained, however, an LLP can allow an organization to achieve superior performance through higher productivity, shorter cycle times, enhanced quality, and improved safety. The LLP can become a building block in an organization’s quest to become a “Learning Organization.” It seems clear that in today’s Information Age, it is knowledge that will provide the competitive advantage, and that the successful companies will be those that can effectively manage the knowledge process.

Introduction

The Challenge

The construction industry is inadequate in capturing lessons learned (LL) from its projects for the benefit of future, similar work. Although the Lessons Learned Process (LLP) may not be a well-recognized term, the process has been around in some form for as long as people have discovered new information and used that information for future endeavors. There are many ways to get from “discovery” of the new information to its “future utilization.” CII Research Team 123, Modeling Lessons Learned, was formed to find the most effective ways.

Research Hypothesis

The LLP is based on the premise that lessons represent knowledge, and that knowledge is an asset to an organization and has value. The LLP is a process of systematic management of the knowledge asset. The research team has shown that *there is value in managing organizational knowledge using an LLP.*

Research Purpose

Along with proving the above hypothesis, the Modeling Lessons Learned Research Team was chartered to:

- define the best practices in managing LL.
- identify the benefits of managing LL to the construction industry.
- study aspects of organizational culture conducive to maintaining an active LLP.
- model a “comprehensive” (collection, analysis, and implementation) LLP.

Research Scope

The research team looked at the cultural, work process, and technology issues associated with the LLP. The research has yielded a flexible work process/model and guidelines that will allow CII member companies to adapt the model to their own in-house capabilities, practices, and resources.

Research Methodology

The research, as outlined in Figure 1, began with a review and evaluation of relevant literature. Information sources were not limited to the construction industry, but included an investigation of other industry processes and technologies (i.e., medical, airlines, manufacturing). A survey was then distributed both within and outside of CII to gather preliminary information on the learning practices utilized by various industries, and to identify where best practice elements might exist. After reviewing the initial survey responses, the research team investigated those organizations that had formal LLPs. A more detailed follow-up survey and interviews sought additional work process details and best practice elements.

Survey questions focusing on key process implementation and effectiveness factors were used to identify processes that were statistically rated by respondents as “most successful.” Further statistical analysis was performed to identify those attributes of the most successful processes that distinguished them from the remaining processes. From these attributes and follow-up interviews came a distillation of the best practice elements of the hybrid LLP.

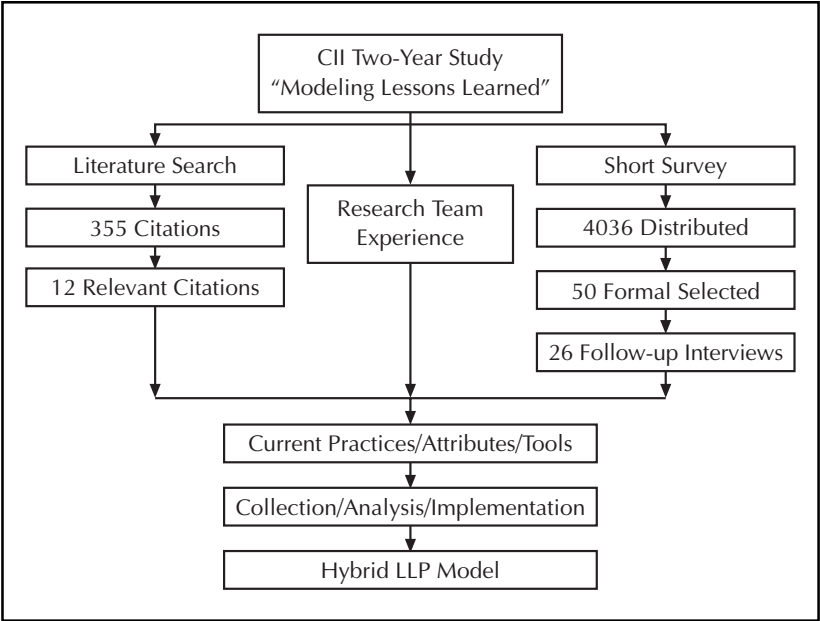


Figure 1. Research Flowchart

The Lessons Learned Process

An LLP is composed of three main components: collection, analysis, and implementation. The research team developed the following definitions for these components:

- Collection: the process of capturing newly acquired information.
- Analysis: the process of organizing and evaluating information to facilitate use.
- Implementation: the process to ensure the future use of the knowledge.

A separate element, Process Management, which nurtures and logistically supports the other components, was found to be a foundation important to the ongoing success and longevity of the program.

The research effort initially concentrated on the “mechanical” aspects of collection, analysis, and implementation (as shown in Figure 2). The research team soon realized, however, that an organization’s work culture is a vitally important factor in the successful implementation of an LLP. A larger, more complex model of managing organizational knowledge emerged. This model is discussed in Chapter 3.

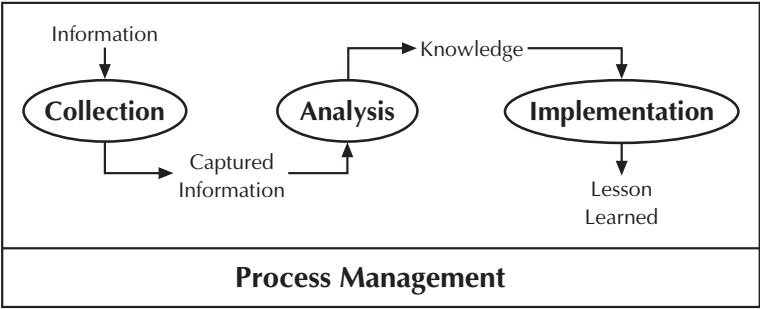


Figure 2. The Lessons Learned Process Concept