



Construction Industry Institute®

Transferring Experiential Knowledge from the Near-retirement Generation to the Next Generation

Construction Industry Institute

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**Prepared by
Construction Industry Institute
Research Team 292, Transferring Experiential Knowledge from the
Near-retirement Generation to the Next Generation**

**Research Summary 292-1
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Executive Summary

As the Baby Boomer generation nears the traditional retirement age of 65, organizations in most industries are finding themselves facing a potential mass exodus of their most senior and experienced employees; the situation in the capital projects industry is no exception. As is true in all industries, potential retirees in the construction industry have a knowledge inventory accrued from a career of successes and failures in their field. This knowledge base is often the foundation of decisions that enhance operational efficiency, foster innovation, reduce the occurrence of critical errors, and enable corporate growth strategies. Traditional human resources practices aim at replacing individuals and often do little to consider how their stores of experiential knowledge can be retained before they leave. Not only does this practice affect an organization's capacity to operate effectively, but in addition to the new hire's salary, the cost of replacing an experienced individual with someone from the outside can range anywhere between 50 percent to 150 percent of the salary, in various indirect turnover costs.

CII formed Research Team 292, Transferring Experiential Knowledge from the Near-retirement Generation to the Next Generation, to address the increased rate of knowledge loss in the capital projects industry; the study was chartered to aim at the retention of experiential knowledge that is at risk of loss due to retirements. RT 292 investigated the current state of the industry's experiential **Knowledge Management (KM)** in order to understand its knowledge transfer problem in terms of magnitude and dynamics, and to isolate the contributing factors and barriers to success. In the course of its research efforts, the team gained an understanding of the value added through effective experiential knowledge retention, developed a framework of an effective experiential knowledge retention model, and formulated of a customizable knowledge retention program.

The team conducted interviews, surveys, and case studies, and consulted heavily with industry knowledge management and human resources experts to frame the problem and understand what constitutes

a successful experiential knowledge retention program. The result is a knowledge retention model that, at a high level, has the following functions:

- aids in the implementation and preparation of a corporate knowledge retention program
- assesses current risk of experiential knowledge loss across organizational knowledge areas called **Subject Matter Areas (SMA)**
- identifies at-risk individuals whose departure would result in the loss of considerable experiential knowledge
- provides a mechanism for effectively planning to transfer/retain the knowledge at risk
- offers guidelines for implementing the plan.

The model also includes suggestions for monitoring and improving the model as a whole, as it progresses through the various levels of granularity, from companywide to individual **Subject Matter Experts (SME)**. The model details are available in CII Implementation Resource (IR) 292-2, *Implementing an Experiential Knowledge Retention Management Model*. The implementation of the model outlined in IR 292-2 will help organizations shift from a reactive response to knowledge loss and retirement to a proactive knowledge-sharing culture that minimizes the impact of retirements. The accelerated loss of knowledge due to Baby Boomer retirements is uniquely and dramatically affecting the capital projects industry.

Strategic Issues

- Reduced efficiency and an increase in critical errors threaten competitiveness.
- Knowledge loss inhibits innovation.
- Knowledge loss reduces the ability to pursue growth strategies.

Challenges

- The industry keeps growing.
- Fewer people are choosing careers in the construction industry.
- Focusing only on *key* experts is only part of the solution.
- Simply maintaining a head count guarantees a net loss of an organization's knowledge.

Introduction

Problem Statement

The capital projects industry is experiencing a dramatic increase in the departure rate of experienced people from the workforce; this is due to the large number of retirements from the Baby Boomer generation and a shortage of qualified workers able to fill the resulting employment gap. Organizations are using traditional techniques to address the situation, but the acceleration of the loss of experiential knowledge calls for a revised approach. For example, promoting mid-level employees fills the seats but only partially replaces the wealth of experiential knowledge of the departing, seasoned professionals. The effect of this approach is that, while the “bubble” in terms of employee numbers is being addressed, the experiential knowledge loss remains a problem. A comprehensive, proactive method to address this growing problem will offer organizations a competitive advantage.

The knowledge gap created by the extraordinarily high rate of employee retirement introduces both operational and cost implications. The operational effects of a knowledge gap within an organization include the following: reduced efficiency, an increase in the number of critical errors, a reduced ability to innovate, and a reduced ability to pursue growth strategies. These issues arise due to a lack of expertise, which forces the remaining employees to “re-invent the wheel” when addressing common problems. This duplication of effort contributes to loss of efficiency and more mistakes. Furthermore, without sufficient competent employees, organizations have difficulty at successfully expanding (De Long, 2002). In addition to the economic effects of this reduced operational capacity, the additional cost of replacing an employee—on top of the new hire’s salary—can range from 50 percent to 150 percent of the departing employee’s salary, depending on the quantity and criticality of the knowledge lost (Perrin, 2005). The problems a company faces when an experiential knowledge gap develops clearly

have a detrimental effect on its competitiveness. Implementing an experiential knowledge management strategy that includes proactive identification and mitigation of knowledge loss is the most effective method to circumvent these issues.

Shifting focus from people replacement to knowledge retention presents an opportunity for companies to maintain their competitiveness. Given these workforce challenges, industry organizations should adapt their knowledge management strategies and methods. RT 292 research addresses this imperative by identifying the most effective methods for transferring and retaining experiential knowledge within an organization such that the harm of knowledge loss is contained, to the economic and operational benefit of the organization.

Purpose

The purpose of this research was to address the increased rate of knowledge loss in the capital projects industry; specifically, it aimed at developing methods for retaining experiential knowledge that is at risk of being lost due to retirement. RT 292, composed of academic researchers, owners, and EPC contractors, was chartered to conduct interviews, surveys, and industry case studies in order to achieve the following goals:

- Understand the magnitude and dynamics of the industry's knowledge transfer problem.
- Investigate the knowledge transfer value proposition.
- Provide definitions of terms related to the research topic.
- Develop techniques to measure the extent and nature of an organization's knowledge loss risk.
- Develop methods to effectively transfer knowledge and mitigate knowledge loss risks.
- Understand the barriers to implementing knowledge transfer methods, as well as the success factors.
- Provide a methodology for monitoring the performance of the knowledge retention model.

Method to Achieve Purpose

Figure 1 presents an outline of the RT 292 research methodology. Established early in the research to guide later efforts, this research design called for parallel, closely coordinated efforts by two sub-committees. The sub-committees were focused on knowledge loss risk assessment and knowledge loss risk mitigation, respectively.

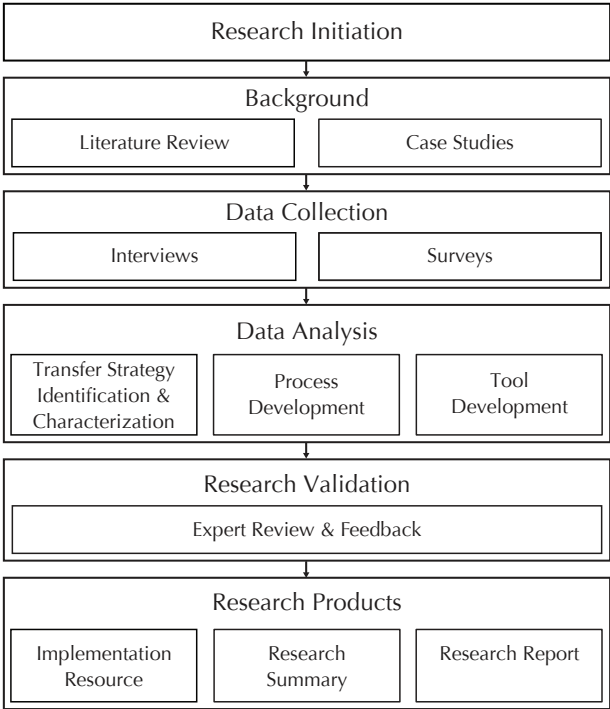


Figure 1. RT 292 Research Methodology

First, the research team conducted an extensive literature review of current knowledge transfer and management practices. This review covered journal articles, industry best practice reports, knowledge management books, and various web sources.

The team's initial data collection was from case studies of industry leaders in experiential knowledge management. The purpose was to gain insight into the following: how the knowledge management leaders within the industry mitigate their experiential knowledge loss risks; which steps they take to manage knowledge retention programs; how they assess and prioritize knowledge criticality; how they plan, implement, and monitor individual retention cases; and, finally, how they assess the overall efficacy of their programs and the value that experiential knowledge retention adds to their organizations. RT 292 performed case studies with both owner and contractor organizations that are considered leaders within the KM community.

The case studies helped to guide the development of the RT 292 Experiential Knowledge Retention Management Model. Initially, the team drafted a process map to serve as a guiding tool for the development of the model and to help identify specific data collection needs.

The second data collection effort consisted of a series of interviews with knowledge management and human resources experts from both CII member companies and non-CII industry organizations. The interviews were focused on the following: assessing the current state of experiential knowledge management practices in the industry; gauging industry awareness of its knowledge attrition problem; understanding how organizations structure their knowledge resources; and gaining insight into how organizations address knowledge criticality. The interviews also confirmed that the techniques proposed by RT 292 for retaining experiential knowledge were being used by industry. They also helped the team identify many of the success factors and barriers to success for each strategy.

In the next phase of the data collection, the team administered a survey focused on environmental characteristics that affect the applicability and efficiency of various commonplace knowledge retention and transfer practices. The team used the results of this survey to confirm that the

experiential knowledge transfer techniques it had documented were applicable to experiential knowledge transfer from retirees to next generation employees. The survey results were also used to populate the tool the team produced to characterize the knowledge transfer environment.

Following these data collection efforts, the research team analyzed the data and refined the original process map to reflect the findings. The subcommittees conducted this process development and refinement in joint webinars and at face-to-face meetings. The focus of these model development efforts was on thoroughly defining each model step and sub-step, and making sure that the system reflected the research findings and the collective team experience. As the team refined the model steps and sub-steps, it was able to outline and develop software tools that would facilitate the requirements of the knowledge retention model. The tools were developed to reduce the end user's computational requirements, consolidate data from multiple assessments, and to ensure consistent step outputs.

Once the team had developed the overall knowledge retention model, a panel of industry experts validated the system. These experts were selected on the basis of their experience within human resource and knowledge management training. Business unit and departmental managers were also included in the validation process, since they are the intended end users. The team provided the experts with the implementation resource and an evaluation package, and asked them to review the model.

After completing the literature review, data collection and analysis, model development and validation processes, RT 292 was confident that it could provide recommendations and conclusions regarding experiential knowledge transfer from the near-retirement generation to the next generation for the capital projects industry.