

CONSTRUCTION INDUSTRY INSTITUTE®

MEASURING ORGANIZATIONAL
IMPLEMENTATION STATUS:
CII KNOWLEDGE
IMPLEMENTATION INDEX (CKII)

Construction Industry Institute

3M	ABB Lummus Global
Abbott Laboratories	ALSTOM Power
Air Products and Chemicals	AMEC
Amgen	AZCO
Anheuser-Busch Companies	BE&K
Aramco Services Company	BMW Constructors
BP America	Baker Concrete Construction
CITGO Petroleum Corporation	Bechtel Group
Cargill	Black & Veatch
Celanese	Bovis Lend Lease
ChevronTexaco Corporation	Burns & McDonnell
ConocoPhillips	CB&I
Dofasco	CDI Engineering Solutions
The Dow Chemical Company	CH2M HILL/IDC/Lockwood Greene
DuPont	CSA Group
Eastman Chemical Company	Day & Zimmermann International
ExxonMobil Corporation	Dick Corporation
General Motors Corporation	Emerson Process Management
GlaxoSmithKline	Fluor Corporation
Intel Corporation	Foster Wheeler USA Corporation
International Paper	Fru-Con Construction Corporation
Kraft Foods	Gilbane Building Company
Eli Lilly and Company	Grinaker-LTA
NASA	Hatch
NOVA Chemicals Corporation	Hilti Corporation
Ontario Power Generation	Honeywell International
PSEG Power	Jacobs
Petrobras	Johnson Controls
Praxair	Kellogg Brown & Root
The Procter & Gamble Company	Kier/CCC USA
Rohm and Haas Company	Kiewit Construction Group
Shell Oil Company	Kværner
Smithsonian Institution	M. A. Mortenson Company
Solutia	Mustang Engineering
Southern Company Services	Parsons E&C
Tennessee Valley Authority	Perot Systems Corporation
U.S. Army Corps of Engineers	Primavera Systems
U.S. Department of Commerce/NIST/ Building and Fire Research Laboratory	S&B Engineers and Constructors
U.S. Department of Energy	The Shaw Group
U.S. Department of Health and Human Services	Siemens Westinghouse Power
U.S. Department of State	Technip USA Corporation
U.S. General Services Administration	Turner Construction Company
U.S. Steel	Victaulic Company of America
Weyerhaeuser Company	Walbridge Aldinger Company
	Washington Group International
	Williams Group International
	Yates Construction
	Zachry Construction Corporation
	Zurich North America

Measuring Organizational Implementation Status: CII Knowledge Implementation Index (CKII)

**Prepared by
The Construction Industry Institute
Implementation Strategy Committee**

**Research Summary 166-1
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Executive Summary

Better competitiveness typically comes from continuous improvement and step change improvement of processes. One method of improving processes is to implement expert knowledge developed by industry, universities and/or research institutes such as the Construction Industry Institute (CII). Although there are many valuable practices available with excellent potential to improve construction project performance, and ultimately the organization's business results, many have not been implemented to a significant extent on real world projects. Despite the importance of this implementation effort, little research has focused on the implementation of existing research products or methods of measuring the degree of the implementation effort.

In order to explore implementation improvement efforts, a survey was conducted by the CII Implementation Strategy Committee to evaluate organizational implementation status within CII. The survey was distributed to 88 CII member organizations in September 2001, including both owners and contractors. A total of 41 organizations responded. (Details of the study are given in CII Research Report 166-11.)

This document will outline results of this survey, including the CII Knowledge Implementation Index (CKII), which was developed in the research as a method to quantify the level of organizational implementation status. A significant and positive relationship was found between the CKII and project performance as measured in various performance variables. Among the conclusions of the study are that implementation generally has significant management support and corporate commitment, but the resources, self-auditing processes, and measurement of business results were found lacking. In general, CII organizations are implementing many CII Best Practices, but there is room for improvement. Policy implications of the study are discussed in this document, including a path forward to better organizational implementation.

Introduction

The construction industry is highly competitive and organizations need to continuously improve in order to remain successful. One way to improve is to implement best practices that are developed by various universities and research institutes such as the Construction Industry Institute (CII). Although there are valuable research products (i.e., industry knowledge) available having great potential to improve construction project performance and organizational business results, many have not been implemented to a significant extent on real world projects.

The relationship between knowledge implementation and organizational success has not been clearly recognized by some industry leaders, which prevents their organizations from rigorously implementing research products. In some cases, inappropriate implementation processes keep organizations from maximizing the benefits that can be gained. In others, the day-to-day pressures of “running the business,” or the organizational inertia of years of past practices, preclude adequate resources and focus from being applied to implementation, even though there is an understanding that it is important. The process of implementing known “best practices” is as important, if not more so, than conducting research to develop a new product or concept. The question is often “What do I need to do to get started?”

Despite the importance of practice implementation, little research has focused on implementation of existing research products or in measuring the degree of the implementation effort at the organization level.

CII established its Implementation Strategy Committee (ISC) in 1995 to focus on the implementation of CII knowledge. ISC efforts to help facilitate implementation of CII products have included development

of the CII Implementation Model and CII Knowledge Structure (see Reference 1). The research effort outlined in this document was conducted over a two-year period in conjunction with input and guidance from the CII ISC, and with sponsorship and approval of the CII Executive Committee. The intent of the study was to provide a snapshot of the implementation level of CII knowledge within CII member organizations using the CII Knowledge Structure and the CII Implementation Model as a baseline. This was to be accomplished by developing an index quantifying the level of organizational CII knowledge implementation leading to the identification of relationships between organizational implementation and company success. No other comparable study had been performed in the construction industry.

The CII Implementation Model gives the foundation for implementation and nine recommended implementation steps leading to a successful implementation effort (see Figure 1). Descriptions of

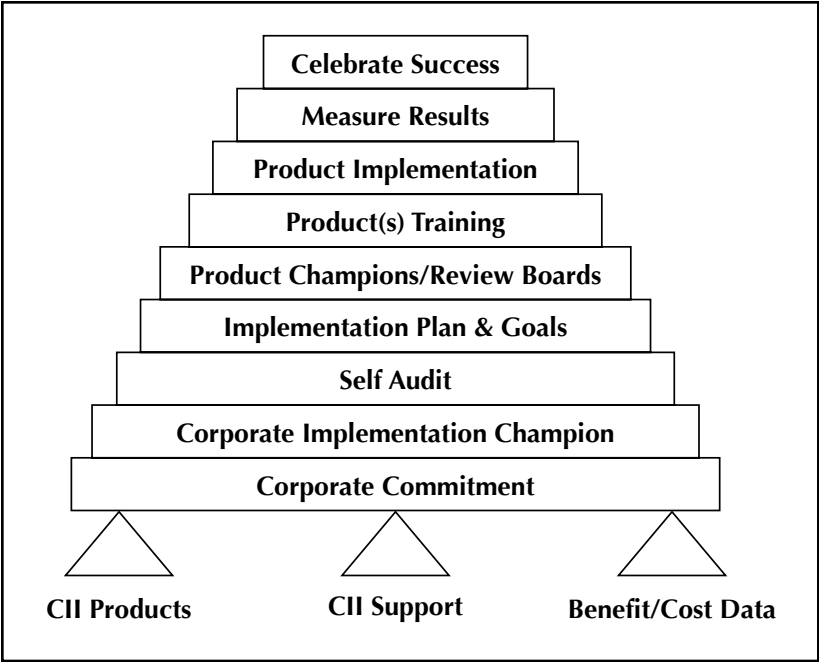


Figure 1. CII Implementation Model

these nine implementation steps are given in Table 1. Each makes up the fabric of a successful implementation process at the organizational level.

Table 1. Implementation Steps

Steps	Definition
Corporate Commitment	Clear and strong management commitment to improve, including leadership involvement
Corporate Implementation Champion	A person or persons appointed to oversee and champion the implementation efforts
Self Audit	Implementation of products evaluated, including adherence to project execution processes
Implementation Plans and Goals	Process implementation plans developed, including targets and metrics
Review Boards/Product Champions	Internal review board charged with review and selection of practices and products
Product(s) Training	Training developed specifically for the practice(s) that have been selected for implementation
Product Implementation	Products or practices implemented, usually beginning with pilot projects
Measurement of results	Results measured to determine effect of the implementation effort
Celebrate Success	Multiple methods of reward and recognition used to reinforce implementation successes

The CII Knowledge Structure organizes numerous research studies performed by CII to help CII member organizations locate appropriate practices to implement. This structure lays out a topology for CII research results and other publications and includes a process to