



PREDICTIVE TOOLS: CLOSING THE PERFORMANCE GAP

The Construction Industry Institute
The University of Texas at Austin
3208 Red River
Suite 300
Austin, Texas 78705-2650
(512) 471-4319
FAX (512) 499-8101

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Predictive Tools: Closing the Performance Gap

**Prepared by
The Construction Industry Institute
Predictive Tools Research Team**

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Executive Summary

“Why can’t we predict project problems soon enough so that they can be managed, solved, or prevented?”

With all of the tools and systems available in the construction industry to the project manager, why do we still have surprise cost overruns, schedule delays, and unsuccessful projects? The construction industry requires comprehensive predictive tools that will allow measurement of critical indicators and accurate predictions of project success while a project is progressing. One goal of CII is to provide the industry with information, techniques, and processes that will more accurately predict project outcome.

The CII Predictive Tools Research Team objective was to develop a process using “predictive tools” that assists a project team during *all* project stages. *Predictive tools* (systems or processes) are a project team’s means to monitor and control all aspects of a project to ensure success. Success is normally defined by meeting the project criteria of cost, schedule, safety, and performance.

The research team found that many predictive tools, systems, and processes are available to monitor and track a project, but the industry has neither combined nor accumulated these tools into a comprehensive package. This is the required next step in “closing the performance gap” for the continuous improvement process for the construction industry.

The research team focused on developing a predictive tool process that would:

- provide a comprehensive project data analysis tool to monitor a project continually (the Continuous Assessment of Project Performance—CAPP).
- develop a detailed process to identify critical procedures that should be in place through the various stages of a project (the Predictive Tools Road Map and User’s Guide).
- provide a single access tool to help a project team identify important CII documents for predictive tools (the Index of CII Tools).

The payback for project teams, and in fact everyone involved with a project, is improved project performance through:

- Improved pre-project planning
- Continuous performance measurement
- Early warning and identification of problems
- Preventative and corrective action planning

This publication summarizes two important tools, the CAPP and the Predictive Tools Road Map, both of which a project team can utilize during all phases of a project to improve the predictability of project success. The appendix provides an overview of the development of the Index of CII Tools, which was key in the formation of the Road Map.

Introduction

The topic of predictive tools has been addressed by prior CII research teams. No research team, however, has identified or assessed the implementation of predictive tools used on a project. There is a need for a work process incorporating predictive tools that can assist project teams to take proactive rather than reactive approaches to project management. A proactive approach that anticipates project problems by identifying early indicators can eliminate or minimize adverse effects.

The purpose of the CII Predictive Tools Research Team was:

- To develop a model for identifying, selecting, and implementing predictive tools for use in real-time management of a capital project. At any project phase, the model will enable project managers to proactively influence key outcomes related to project indicators of impending problems. The key will be to focus on the significant few rather than the insignificant many.

The research team's scope and objectives were set as follows:

- Develop a work process that identifies problems by project phase and suggests appropriate predictive tools that can:
 - Assist in pre-project planning.
 - Assess project status.
 - Identify problems early in a project.
 - Recommend solutions.
- Identify predictive tools currently being used in industry.
- Develop a model that relates project outcomes to multiple indicators that predictive tools must measure.
- Insure that the tools measure the critical issues and are economically administered.