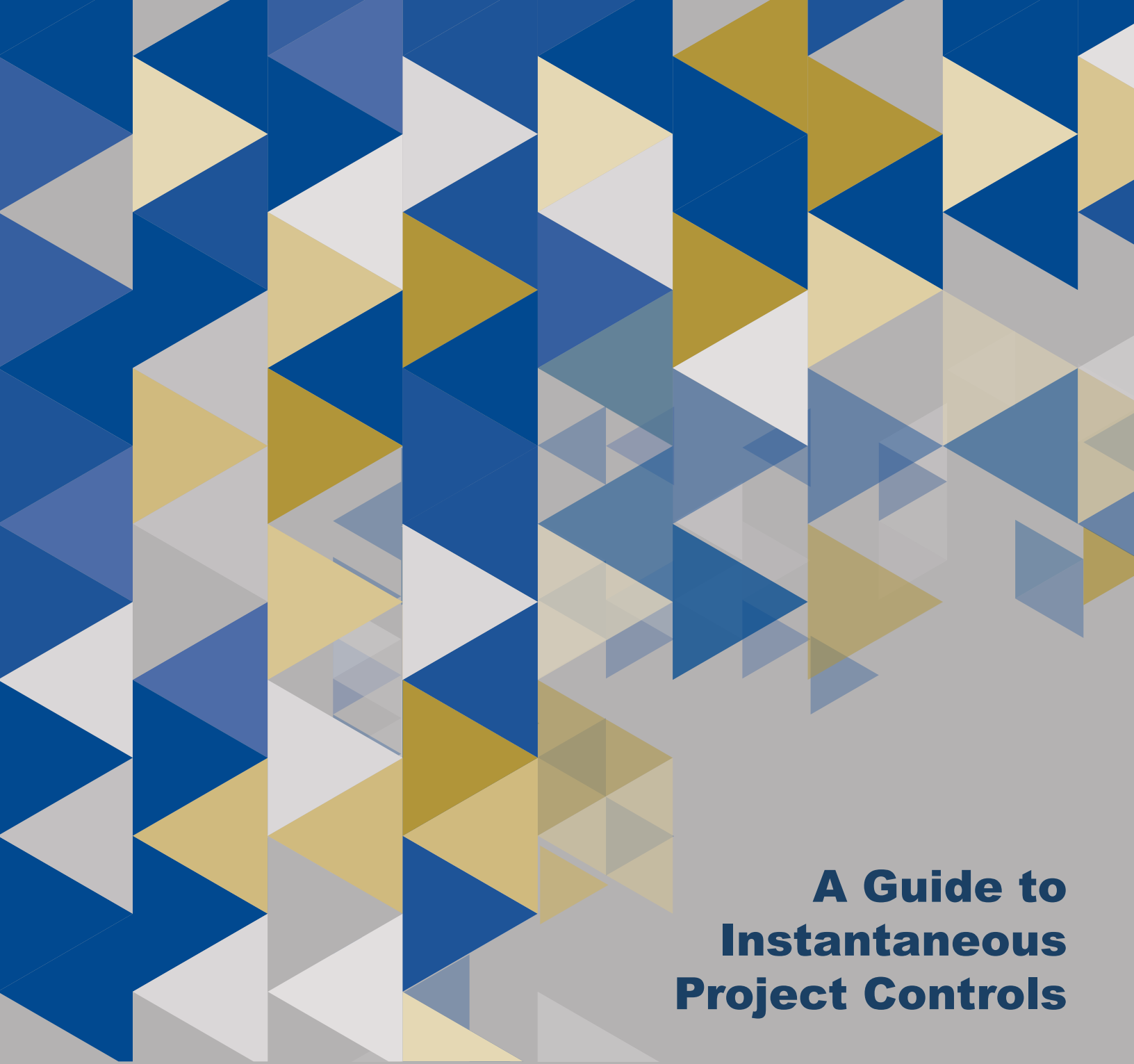




A Guide to Instantaneous Project Controls



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Research Team 316, Instantaneous Project Controls Systems

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Introduction

CII established Research Team (RT) 316, Instantaneous Project Controls Systems, to identify, synthesize, and prioritize the key strategies and critical success factors of instantaneous project status reporting. The purpose was to streamline current project controls processes such that project teams can readily obtain the information they need to respond effectively to trends and events. To accomplish its goals, the team conducted surveys and case study interviews. The case study findings generated a maturity matrix comprising nine instantaneous controls implementation strategies, grouped into three main categories: organizational behavior, project controls, and advanced information technologies.

This maturity matrix was the basis of the three tools the team developed: 1) the Instantaneous Quotient (IQ) tool, which provides a thorough assessment of the maturity of an organization's instantaneous controls capability; 2) the Quick Assessment (QA) tool, which gives an overview of an organization's strategic gaps and weaknesses; and 3) the Workflow Implementation Process tool, which prioritizes and plans for the implementation of the nine strategies. Rather than take a project-by-project approach, these tools support an organizational focus on instantaneous controls.

Following this introduction, Chapter 2 provides an in-depth discussion of the maturity matrix. Next, Chapters 3 and 4 offer guidance on using the IQ and QA tools, respectively. Chapter 5 then explains ways to leverage the Workflow Implementation Process tool, and Chapter 6 addresses practical implementation considerations, such as when or how to use the tools. Finally, Chapter 7 presents narratives of three industry implementations of instantaneous controls, each with different scopes and varying degrees of success; each account relates the level of success case to the degree each of the nine maturity matrix strategies is implemented.

The Maturity Matrix

RT 316 studied several organizations (in a variety of industries) that had successfully implemented innovative strategies for a number of instantaneous controls functions. While compiling the collective insights and lessons learned from these early adopters, the research team quickly saw common strategies emerge. In total, the team identified nine strategies necessary to enable organizational support for instantaneous project controls. These nine strategies, grouped into three categories with three strategies each, constitute the RT 316 Maturity Matrix. (See Figure 1.) The three categories are 1) Organizational Behavior, 2) Project Controls, and 3) Advanced Information Technologies. As the arrows in Figure 1 indicate, these strategies should be sequentially implemented, since organizational behaviors support efficient project controls functions, which, in turn, can be leveraged through the implementation of advanced information technologies.

The research team documented several instances of organizations trying but failing to attain instantaneous controls through the purchase of new software packages alone. The problem in these cases was that the organizations had not addressed the need to establish the right processes, practices, and behaviors before adopting new software platforms. Indeed, increased information integration was of no use if data were not being consistently collected, if the work coding structure did not allow the integration of data, or if the information was not being analyzed across different reporting functions. (See Chapter 7 for examples of implementation efforts with different levels of success.)



Figure 1. Maturity Matrix

Each of the nine maturity matrix strategies has a direct application to implementing instantaneous controls in the construction industry. Following are brief descriptions of maturity of each strategy:

1. **Culture.** Organizations have a culture in which individuals challenge current technologies, tools, and processes, and adopt new ones that improve project controls capabilities. Instructions, procedures, and policies support process improvements. Individuals understand the relevance of timely and accurate project controls, for instance, in support of strategic decision-making.
2. **Leadership.** Senior management has a sustained vision of instantaneous project controls within the organization. Management supports, communicates, and encourages adoption and use of instantaneous project controls, and is tolerant of justifiable problems and failures during implementation. Rewards and recognition are aligned with the vision of achieving the right level of instantaneous controls.
3. **Contracts.** Data/reporting requirements and communications interfaces are properly defined for all contract participants, to ensure that the communication chain operates with efficiency and integrity. Data/reporting requirements and communication interfaces are contractually enforced. Alignment of unique code structures, work breakdown structures, and metrics is maintained for all contract parties over time.
4. **Work Planning.** A carefully developed code structure supports all aspects of project controls. Individuals understand the relevance and importance of work planning practices to informed and proactive decision-making. Project organizations promote work planning practices across all organizational boundaries and align accountability with expectations for continuous feed, on-demand, or instant reporting.
5. **Data Collection.** A well-defined set of instructions, procedures, checklists, and/or standards govern project controls data collection within the organization. Project controls data are automatically and continuously collected. Single data entry practices are enforced. Collected data are clean, consistent, and complete. Focus is on consistent and effective implementation.
6. **Reporting.** The reporting frequency of each project controls function is prioritized, including any instant and continuously monitored functions. Reports are automatically generated at the right frequency. Reported

information is reliable and is presented with the right set of metrics, adequate levels of detail, and in the correct formats. Reports can be accessed virtually anywhere by means of remote, mobile, and/or cloud solutions.

7. **Information Integration.** Appropriate data and project controls information is seamlessly and inter-operably exchanged across internal and external organizational boundaries. Barriers at information interfaces have been identified and mitigated. No manual or semi-manual data transfer of information across project functions or organizations is necessary. Data and information are protected through appropriate access, confidentiality, redundancy, and security protocols.
8. **Workflow Management.** Project controls and management processes and procedures have been re-engineered around communication and information management technologies. Timely compliance with audit requirements and regulations is ensured through communication and technologies. Specific and appropriate review/access privileges are established for different users throughout the organizational or project structure.
9. **Business Intelligence.** Advanced analytics enable automated monitoring and/or reporting functions that instantly answers critical questions about projects or portfolio investments. Ad hoc querying and reporting functions are also established to answer critical questions and support strategic decisions. Intelligent functions automatically and instantaneously identify, alert, and trigger actions in response to potential and/or actual issues and events, and incorporate these problems and solutions into the reported information.

The next chapters discuss the Quick Assessment tool, the Instantaneous Quotient tool, and the Workflow Implementation Process tool.