



**INDUSTRY EXPOSURE TO
THE BUSINESS ROUNDTABLE'S
CONSTRUCTION INDUSTRY COST EFFECTIVENESS PROJECT**

**by
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**A Report to
The Construction Industry Institute
The University of Texas at Austin**

**Under the Guidance of
Task Force 83-1
CICE Impact Evaluation**

**from
The University of Maryland
College Park, Maryland**

**SD-2
December 1984**

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Printed in the United States of America.

PREFACE

This report contains an evaluation of the exposure of the construction industry to the Business Roundtable's Construction Industry Cost Effectiveness (CICE) Project. The report represents the first phase of a three phase study which will evaluate the impact of the CICE Project. The second phase will evaluate the industry's awareness to the CICE findings. The third phase will evaluate the industry's implementation of the CICE recommendations.

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EXECUTIVE SUMMARY

This study represents the first attempt by the Construction Industry Institute (CII) to evaluate the impact of the Business Roundtable's Construction Industry Cost Effectiveness (CICE) Project. The study identifies the extent of construction industry exposure to the findings and recommendations of the CICE report. It is the first of three studies. The other two studies will follow in 1985 and attempt to evaluate the level of awareness within the industry and the extent of implementation efforts.

Industry exposure is defined as companies, organizations or individuals who have some knowledge that the Business Roundtable has completed a group of reports dealing with the cost effectiveness of construction projects. The extent of this exposure was analyzed in three parts. The first part of the study used data collected by the Roundtable as to the total number of CICE reports distributed to the construction industry. The second part analyzed Roundtable data on companies requesting specific CICE reports. The third part dealt with activities undertaken by the Roundtable and organizations outside the Roundtable to extend the exposure of CICE information to the industry.

Total Distribution of CICE Reports

Total CICE Reports distributed to the construction industry is approximately 900,000 reports, as of May 1984. Of the twenty four reports distributed, the most popular reports include:

	<u>Reports Distributed</u>
1. Summary Report - More Construction for the Money (published January 1983)	97,000
2. A-3 Improving Construction Safety Performance (published March 1982)	54,000
3. C-2 Scheduled Overtime Effect on Construction Projects (published February 1981)	53,000
4. C-6 Absentism and Turnover (published June 1982)	43,500

All other reports have distributions exceeding 35,000 copies, with the exception of the report, Executive Summary-Message To Owners, which had a limited distribution.

Specific Requests and Distribution of CICE Reports

The construction industry was separated into nine major participant categories. This study tabulated approximately 6000 letter requests for CICE reports which resulted in approximately 400,000 CICE reports being distributed. The breakdown for each major participant is shown below:

<u>Industry Participant</u>	<u>Letter Request Percentage</u>	<u>Report Distribution Percentage</u>
Owners	18	15
Contractors	32	18
Consultants	11	5
Organizations	10	45
Academic Institutions	9	6
Developer Owners	2	1
Labor Unions,	4	5
Government	4	2
Others	9	3

The most popular reports based on the specific letter requests were almost the same as reported for total distribution, with only a slight change in the order:

A-3 Improving Construction Safety Performance

Summary Report - More Construction for the Money

C-2 Scheduled Overtime Effects on Construction Projects

A-4 First and Second Level Supervisory Training

Owners and Contractors both preferred the Summary Report and Report A-3 Improving Construction Safety Performance the most. The third most requested report for Contractors was Report C-2 Scheduled Overtime Effects on Construction Projects, but Owners preferred Report A-7 Contractual Arrangements.

Consultants also preferred the Summary Report but the second and third most preferred reports were: A-6 Modern Management Systems and A-2 Construction Labor Motivation. Organizations requested a very high percentage of Report A-3 Improving Construction Safety Performance. The reports dealing with training, A-4 First and Second Level Supervisory Training and D-4 Training Problems in Open Shop Construction, were the next highest requested reports.

Labor Unions preferred the reports, C-1 Exclusive Jurisdiction in Construction and D-4 Training Problems in Open Shop Construction. Both reports have an impact on labor. Two reports from Study Area D, D-3 Construction Training Through Vocational Training and D-2 Government Limitations on Training Innovations, were most popular with Government agencies.

Distribution by Company Size and Management Level

The extent of exposure to the CICE reports varies according to the size of the company and the level of management requesting the information. For Contractors, the requesting companies were grouped according to their annual

contract dollar volume. The following information represents Engineering News Record Top 400 Contractors based on contract dollar volume versus percent of request letters.

<u>Dollar Volume (\$,MM)</u>	<u>Percentage of Companies in ENR Top 400</u>	<u>Percentage of Total Letters Received</u>
1000+	6	64
300-999	11	17
100-299	26	11
36-99	57	8

The largest construction contractors were relatively few in the total number of companies requesting information but received the majority of the reports distributed. This is a good indication that large contractors who will make a difference in the industry are receiving the bulk of the Roundtable's information.

The level of management requesting the CICE reports gives an indication of the likelihood that the entire company will be exposed to the CICE reports. The higher the level of management the greater the likelihood that the company's personnel will be exposed. The following illustrates which management level requested the reports for Owners, Contractors, and Consultants.

<u>Industry Group</u>	<u>Management Level</u>
Owner	Upper - 7%
	Middle - 50%
	Lower - 28%
	Other - 15%
Contractor	Upper - 29%
	Middle - 37%
	Lower - 20%
	Other - 14%
Consultant	Upper - 34%
	Middle - 38%
	Lower - 18%
	Other - 10%

Exposure by External Sources

A total of 47 publications, containing information about the Roundtable's CICE reports, were evaluated to determine another measure of the exposure of the CICE reports. At the very least, the circulation of these publications was in excess of one million subscribers. Although the subscribers of these publications could be the same for two or more publications, the indication suggests that there is a wide ranging exposure to the CICE reports.

Along with exposure to the reports by specific letter requests and external publications, the Roundtable has developed six films and slide shows highlighting the key results and recommendations of the reports. A sample of the companies using these media sources was evaluated and it is estimated that several thousand industry participants were exposed to the information. Also, further study evaluation found that several companies have developed their own in-house films and seminars specifically dealing with the CICE reports.

Conclusions

Based on the findings of this study, the study's conclusions are: (1) Large Owners and Contractors are exposed to the CICE information, (2) Small Owners and Contractors, Government Agencies, and A/E firms need additional exposure, and (3) Additional means should be sought to extend the exposure to Academia, Labor, and Technical/Professional Organizations.

I. BACKGROUND

In 1969, the Construction Users Anti-Inflation Roundtable was founded to focus on the detrimental effect of inflation on the cost of construction. In 1972, that organization merged with others to form The Business Roundtable. An association in which the chief executive officers of about 200 major corporations focus and act on a wide range of public issues.

Over the years, The Business Roundtable has been concerned with quality, efficiency, productivity, and cost-effectiveness of the construction industry. In particular, the Roundtable's Construction Industry Cost Effectiveness (CICE) Project, conceived in 1977, looked at specific problem areas in the industry. The project took over five years to complete with more than 250 people with expertise in construction, representing more than 125 companies as well as universities and industry organizations and produced 24 separate reports.

These reports contain over 220 recommendations for action by owners, contractors, trade associations, labor, government, academia, and others associated with the construction industry. If the recommendations are carried out only to a moderate degree, the study teams conclude, total savings should amount to at least \$10 billion annually.'

To date, no evaluation has been performed to determine the exposure of the entire industry to the findings and recommendations of The Business Roundtable's CICE Project.

CICE Exposure Study

In 1983, the Construction Industry Institute (CII) formed a committee to evaluate the impact of the Roundtable's CICE project. This study represents the first attempt in evaluating the construction industry's exposure to the

CICE project. In 1985, future studies will evaluate the industry awareness as to the amount of knowledge the industry has about specific CICE reports and the extent of company implementation of the results and recommendations of the CICE reports.

The purpose of the CICE Exposure Study is to evaluate the extent to which the construction industry has been exposed to the Roundtable's CICE project. The objectives for the study, as identified by the CII study committee, are:

1. Identify the various activities which have been undertaken to expose the findings and recommendations of the CICE Reports to the participants of the construction industry.
2. Quantify the extent of the CICE Reports exposure to the various construction industry participants.
3. Identify construction industry groups or segments where minimal or no exposure to the CICE Reports have occurred.

Source of Information

This report evaluates the exposure of the CICE reports by analyzing how the reports were publicized and distributed by identifying those requesting specific reports.

The primary source of information was the Business Roundtable. Information collected from the Roundtable included: (a) total number of reports printed and distributed, (b) specific letter requests, numbering approximately 5868 letters from 1981 to July 1984, requesting copies of specific reports, (c) list of approximately 900 owners to whom initial copies of the reports were mailed as well as all local construction user councils, and (d) presentations at seminars and conferences given by Roundtable

representatives or affiliated personnel.

Other sources of information were used to evaluate the extent of exposure given by publication sources external to the Roundtable, i.e. Engineering News-Record, Civil Engineering, AGC-Contractor, Builder and Contractor, etc. The various sources of external publications were primarily identified through references made in the specific letter requests for CICE reports received by the Roundtable.

Participant Categories

The data provided by the Roundtable was separated into categories of major participants of the construction industry. Nine participant categories were defined, as listed below:

- 1) Owners - Private companies who are the client or sponsor for a constructed facility. Participants include: petrochemical, industrial and power companies.
- 2) Contractors - Companies responsible for the physical completion of a construction project. Participants include: general contractors, subcontractors, and design/build firms.
- 3) Consultants - Companies involved in the planning or design phase of construction projects. Participants include: design contractors, consulting engineers and construction managers.
- 4) Developer-Owners - Companies which sell a completed construction project for public use. Participants include: real estate developers and insurance companies.
- 5) Organizations - Groups representing construction users, trade groups, or professional interests.
- 6) Labor Unions - Groups representing the interests of organized

construction labor.

- 7) Universities/Academic Institutions - Educational institutions involved in the transfer of educational or research knowledge.
- 8) Government - Groups associated with federal, state and local government. Participants include: government users and regulatory agencies.
- 9) Other - Groups associated with construction projects in an indirect contact. Participants include: private individuals, accounting firms, law firms, and publishing firms.

Specific Letter Requests

In reviewing who requested specific reports, the nine major categories were separated into thirty-four sub-categories as shown in Table 1.1. Basis for the determination of each specific respondent's area of interest came primarily from the specific letter's letterhead, but in many cases it was necessary to go to the content of the letter to make final distinctions. In a few cases, published lists of design firms or construction firms had to be used to identify the requestor's category.

Once the letters were sub-categorized, it was possible to compile a report distribution by category. Other information taken from the letters included: the levels of management involved in the requests, international requests and publications cited by the requesting firms. This information aided in further analyzing the extent of exposure given the reports. Publications cited in the letters were further examined based on their circulation, content and level of publicity given the reports.

Table 1.1
Participants by Category

<u>Owners</u>	<u>Universities/Academic Institutions</u>
Light Industrial	Departmental
Heavy Industrial	Faculty
Petrochemical	Students
Power Companies	
<u>Contractors</u>	<u>Organizations</u>
General	Trade Associations
Mechanical	Users Councils
Electrical	Professional Societies
Roofing-Sheet Metal-Insulation	
Soils and Concrete	
Steel	<u>Labor Unions</u>
Other Specialty	
<u>Developer-Owners</u>	<u>Government</u>
Commercial	
Hotel-Restaurant-Hospital	
Retail	
<u>Consultants</u>	<u>Other</u>
Engineers	Individual Requests
Consulting Engineers	Law Firms
Construction Managers	Publishers
Architect/Engineers	Accounting Firms
Planners	

II. CICE REPORT DISTRIBUTION

Publication of the 23 individual reports began with the first report being issued in early 1981 and ended with last report being issued in late 1982. The summary report, More Construction For The Money, was published in January 1983. The total number of reports distributed, as of May 1984, was approximately 900,000 reports.

The 23 individual reports and the two reports subsequently issued, More Construction For The Money and Message To Owners, are listed in Table 2.1. Table 2.2 lists the reports with their publication dates and distribution. Except for the Executive Summary - Message To Owners, all other reports have exceeded 30,000 distributed and most have over 35,000 distributions.

The main focus of the study is to identify the participants of the construction industry who have been exposed to the findings and recommendations of the CICE Project. Of the approximate 900,000 reports distributed, over 42% were distributed to companies or individuals who specifically requested individual or complete sets of reports. Reports initially distributed to over 900 owners and construction user councils accounted for 17% of the total. The remaining 41% of the total reports distributed were usually bulk mailed for various seminars, conferences and professional and trade organization meetings.

This study concentrated on evaluating the specific letter requests received by the Roundtable from the various participants of the construction industry. These unsolicited requests, represents a very important group because of the implications that this group of participants are more likely to use and become familiar with the report recommendations.

TABLE 2.1

Construction Industry Cost Effectiveness Project

PROJECT MANAGEMENT - STUDY AREA A

1. A-1 Measuring Productivity in Construction
2. A-2 Construction Labor Motivation
3. A-3 Improving Construction Safety Performance
4. A-4 First and Second Level Supervisory Training
5. A-5 Management Education and Academic Relations
6. A-6 Modern Management Systems
7. A-7 Contractual Arrangements

CONSTRUCTION TECHNOLOGY - STUDY AREA B

8. B-1 Integrating Construction Resources and Technology into Engineering
9. B-2 Technological Progress in the Construction Industry
10. B-3 Construction Technology Needs and Priorities

LABOR EFFECTIVENESS - STUDY AREA C

11. C-1 Exclusive Jurisdiction in Construction
12. C-2 Scheduled Overtime Effect on Construction Projects
13. C-3 Contractor Supervision in Unionized Construction
14. C-4 Constraints Imposed by Collective Bargaining Agreements
15. C-5 Local Labor Practices
16. C-6 Absenteeism and Turnover
17. C-7 The Impact of Local Union Politics

LABOR SUPPLY AND TRAINING - STUDY AREA D

18. D-1 Subjourneymen in Union Construction
19. D-2 Government Limitations on Training Innovations
20. D-3 Construction Training Through Vocational Education
21. D-4 Training Problems in Open Shop Construction
22. D-5 Labor Supply Information

REGULATIONS AND CODES - STUDY AREA E

23. E-1 Administration and Enforcement of Building Codes and Regulations
24. Summary Report - More construction for the Money
25. Executive Summary - Message to Owners

TABLE 2.2
PUBLICATION AND DISTRIBUTION OF CICE REPORTS

<u>Report</u>	<u>Publication Date</u>	<u>Reports Distributed</u> (as of May 1984)
A-1	September 1982	34,700
A-2	August 1982	33,250
A-3	January 1982	54,100
A-4	May 1982	38,200
A-5	June 1982	32,900
A-6	November 1982	33,250
A-7	October 1982	32,000
B-1	August 1982	32,500
B-2	July 1982	33,560
B-3	August 1982	30,900
C-1	July 1982	33,250
C-2	February 1981	43,000
C-3	February 1982	37,300
C-4	September 1982	31,925
C-5	April 1982	37,650
C-6	June 1982	43,450
C-7	June 1982	36,000
D-1	February 1982	37,325
D-2	March 1982	35,800
D-3	August 1982	33,500
D-4	September 1982	33,200
D-5	April 1982	35,300
E-1	October 1982	31,780
Summary Report	January 1983	96,800
Message to Owners	February 1983	<u>8,750</u>
Total:		898,495