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Building a Successful Global Engineering and Construction Company

Construction Industry Institute

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**Prepared by
Construction Industry Institute
Globalization Research Team**

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Executive Summary

The globalization of engineering and construction (E&C) services is a part of the much broader market trend toward the globalization of all services; this larger trend has had far-reaching impacts in recent decades on work practices, workforce demographics, the economy, and society. In the engineering and construction industry, discussions of globalization have centered largely on two main topics: (1) the *outsourcing of services* from offshore service providers, such as low-cost engineering centers, and (2) the *increasing project scope* of global projects—their larger size and greater complexity require the participation of engineers, contractors, and suppliers from several countries. Yet, a third important trend in the globalization of the industry deserves further investigation: the *market issues* that U.S. organizations face as they expand into other countries and as they encounter increasing competition from international organizations working within the United States. The situation in industry today is that as trade liberalization is increasing, the cost differentials between advanced and developing countries are declining. Market issues are creating a new globalization dynamic, making it difficult for U.S. engineering and construction organizations to maintain and increase market share domestically and abroad. In the period from 2002 to 2008, the number of U.S. companies on the *Engineering News-Record* (ENR) list of contractors performing the most work outside their respective domestic markets dropped from 36 percent to 11 percent. The U.S. engineering and construction industry needs to develop a new understanding of how engineering and construction organizations can reverse this trend; these organizations need to evolve beyond simply being users of global resources and should begin initiating ventures that effectively operate in and integrate into a global market. Understanding and moving toward this market-based approach will allow owners and contractors to achieve their goals for genuine and enduring global expansion.

CII Globalization Research Team 263 was established to comprehensively understand, synthesize, and prioritize the key drivers and critical success factors of true globalization for engineering and

construction organizations. To achieve this purpose, the team collected case study data through open-ended interviews in order to identify the dimensions and attributes of globalization. The attributes were then ranked and weighted by means of the Analytic Hierarchy Process (AHP). Having processed and organized the data, the team was then able to develop the Globalizing Self-assessment Tool (G-SAT). This tool—Implementation Resource 263-2—allows engineering and construction organizations to perform the following operations:

- evaluate globalizing progress
- identify and evaluate globalizing tactics
- prioritize and plan the implementation of these globalizing tactics.

While the G-SAT may be used by any owner, contractor, or supplier, it was designed principally to help engineering and construction companies understand, evaluate, and improve their globalizing efforts.

Introduction

In the last two decades, the business and operating environment of the engineering and construction (E&C) industry has experienced significant change, especially as a result of the trend toward increased globalization. Many U.S. engineering and construction organizations have taken advantage of this trend and profited from globalizing their businesses. However, in the period from 2002 to 2008, the percentage of U.S. companies on the ENR list of the top 225 contractors performing work outside of their respective domestic markets dropped from 36 percent to 11 percent. Because the United States represents the largest global construction market, some would argue that the size of their market puts U.S. engineering and construction organizations at a disadvantage in this ranking. Yet in the same period (from 2002 to 2008), the percentage of U.S. companies on the ENR list of the 225 largest global contractors dropped from 60 percent to 39 percent. At the same time, the global construction market has been growing and its growth is expected to continue. According to Oxford Economics (2008), the current estimated value of the global construction market is \$7.5 trillion; that value is expected to jump to \$12.7 trillion (in 2008 dollars) by 2020. The RT 263 research effort has focused on providing tactical guidance to help the U.S. engineering and construction industry capitalize on this growth and maintain and improve its share of the global engineering and construction market. Developing this guidance required an understanding of the current major trends in globalization: 1) increased offshore outsourcing, 2) larger and more complex global project scope, and 3) increasing opportunity and competition in the global market.

1.1 Offshore Outsourcing

A growing number of engineering organizations outsource complex design work to international vendors. In the engineering and construction industry, U.S. organizations secure engineering services from offshore service providers in low-cost engineering centers in China, India, Russia,

Eastern Europe, Latin America, and Central Asia. These providers provide their services at a comparatively lower price than that of U.S. providers. In a 2005 *New York Times* article, Thomas Friedman describes the current global offshore outsourcing situation:

Some three billion people who were out of the game walked, and often ran, onto the playing field. [The] economies and political systems [of China, India, Russia, Eastern Europe, Latin America, and Central Asia] all opened up during the course of the 1990s so that [these] people were increasingly free to join the free market Indeed, thanks to the flattening of the world, many of these new entrants didn't even have to leave home to participate [T]he playing field came to them!

In response to this shift, CII Research Team 211 conducted research to examine issues of offshore outsourcing in the engineering and construction industry (RT 211). This research team developed a Global Virtual Engineering Team (GVET) Planner to help plan and improve engineering and construction offshore outsourcing activities (Messner et al., 2007).

1.2 Global Project Scope

The increasing size and complexity of projects today often require the participation of engineers, contractors, and suppliers from several countries. Highly specialized engineering and construction organizations now strategically participate in global projects in countries around the world to capitalize on their global project experience and their high levels of specialized technological skill. CII recognized this trend and assigned Research Team 264 to examine product integrity issues that may arise when complex products are sourced from low cost sourcing countries (RT 264).

1.3 Addressing Market Issues

A growing number of international opportunities have prompted U.S. organizations to expand their operations into other countries. As a result, construction demand in developing countries is rapidly increasing. This