

CSFs IN COMPETITIVE TENDERING AND NEGOTIATION MODEL FOR BOT PROJECTS^a

Discussion by M. C. Gupta² and
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The author has carried out a useful study related to the critical factors responsible for the success of a BOT project. The paper has identified six critical success factors (CSFs) which, if given special and continued attention by the promoters, would increase their chances of a successful outcome. These six CSFs are entrepreneurship and leadership, the right project identification, strength of the consortium, a technical solution advantage, financial package differentiation, and differentiation in guarantees.

The discussers would like to add some more factors, which should also be given due consideration and attention by promoters to win BOT contracts. The following success factors are identified:

- Ability to provide a suitable transfer package: The most critical consideration at this stage to governments will be the condition in which the assets will be returned to the state. The promoter can suggest an innovative transfer package that will ensure efficient continuation of the services beyond the concession period. The transfer package can include: (1) training of the government's personnel; and (2) optional provisions that allow the government either to sell the facility to the promoter at a predetermined cost or to further extend the concession period to the promoter with a minimum guaranteed return to the government.
- Built-in flexibility for future growth and changes: The design concepts of large-scale infrastructure projects are invariably human-activity centered and, as such, are dynamic and capable of continual growth. Once a system has been created and found to be effective and beneficial, the pressure for further expansion is tremendous. The design guidelines should be laid down so as to achieve both flexibility and adaptability to change and the ability to expand to accommodate future growth. Failure to take a large-scale living system perspective will place unnecessary constraints on future development and cause rapid degeneration and decay of the existing system.
- Supportive and understanding community: BOT projects need support and understanding from the community directly affected by the project, who should be able to tolerate the inconveniences caused during the construction phase. This requires a strong and sustained marketing campaign by the promoter so that the public can understand the long-term implications and benefits of the project.
- Short construction period: This factor is extremely critical for the success of BOT projects, particularly for projects in developing countries where the rates of inflation and interest are very high. An early inflow of revenue to the

promoter will decrease the payback period considerably. The promoter can reduce the tariff, making the offer more competitive.

Attention to these additional factors will help promoters prepare a superior proposal that will increase their chances of securing a BOT contract.

CONSTRUCTION AUTOMATION: DEMANDS AND SATISFIERS IN THE UNITED STATES AND JAPAN^a

Discussion by Leonhard E. Bernold,³
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INTRODUCTION

In their conclusion section, the authors of this paper express their wish to "encourage discussion on what, if anything, should be done to promote an increased interest in construction automation and robotics in the United States." The discussor would like to take up this challenge.

The intent of this paper is to add important facts to the original paper that are critical for an informed discussion. First, it highlights the problems with assessing industry needs and demands without sufficient data to back up conclusive statements and stresses the need for acknowledging previous work in the same area in order to build a scientific body of knowledge. Second, it introduces various successful R&D projects supported by the U.S. government. Finally, it revisits and discusses the problem of technology transfer.

SCORING DEMANDS AND SATISFIERS

In the discussor's opinion, Table 1 of the original paper is particularly needful of critical attention. Here, demands and satisfiers for construction automation and robotics are provided for the United States and Japan. In all three identified groups, Manager/Owner, Workers, and Social, the United States received a "weak" (lowest grade) for both demand and satisfier. The terms demand and satisfier are ill-chosen, because they both carry connotations that are inherent. The meaning of the word satisfier involves "fulfilling a desire" and was used by F. W. Herzberg when he introduced his model for modifying people in the 1950s. Kangari and Halpin (1989) introduced another set of terms that are more appropriate to this topic, namely, needs and feasibilities (technical and economical). They capture in much better terms what the two authors have attempted to say. It is very important to build on previously established nomenclatures in order to establish a cohesive body of knowledge. For a further review, the reader is referred to the cited paper.

Another matter that affects the relevance of the drawn conclusions is the lack of data to support the provided scores. In fact, some of the scores are contradicted elsewhere in the paper. For example, the authors state, "U.S. construction industry leaders perceive robotics for off-site modular fabrication and linkage between computer-aided design (CAD) databases and shop robotics to be important. At the same time, they do consider field robotics to be an important technology in addressing industry problems." In the discussor's opinion, this

^aSeptember 1996, Vol. 122, No. 4, by Robert L. K. Tiang (Paper 9382).

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^aJune 1996, Vol. 122, No. 2, by John G. Everett and Hiroshi Salto (Paper 10821).

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