

CS-229

A Proposal to Incorporate High Management Skills

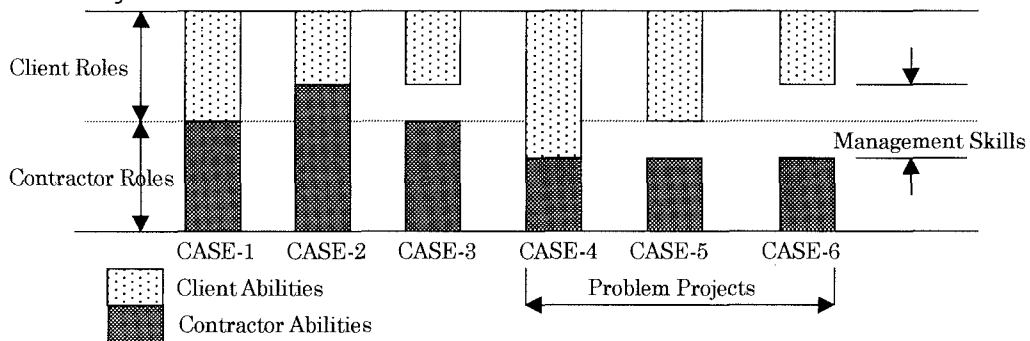
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1. Introduction

Public Works are intended to organize and maintain quality social infrastructure in a fair and efficient manner. At the same time, they are expected to protect and nurture local industries as a part of public investment flow. Therefore, based on the Government and Public Demand Act that secures government and public jobs for small businesses, the government establishes, by annual Cabinet decision, target contract amounts for small businesses and places a certain number of public job orders with local contractors. However, some have pointed out the risk of lesser quality construction when executed by less skilled small contractors (hereafter called LSC). This paper discusses a proposal to incorporate high management skills to solve the problems of ensuring quality work undertaken by LSC.

2. Allocating Roles in Public Works

A public construction project is undertaken with a contract between a client and a contractor. Naturally, there are roles for the client and the contractor. When both parties properly fulfill their roles, there are usually no problems. However, depending on their particular organization and skills, a variety of situations may arise. This is referred to in Figure 1.

**Figure 1: Roles and Abilities of Clients/Contractors**

When an LSC receives an order, Cases 4-6 (Problem Projects) in Figure 1 are thought to apply, and Cases 5 and 6 presumably indicate some risks involving work quality. Case 2 is thought to occur when a less skilled client and a highly skilled contractor (hereafter called HSC) are combined. Therefore, even such problem projects as shown in Figure 1 can be spared quality concerns if high level skills are utilized. Considering skill differences here, since technical ones do not vary as much among actual construction workers, what matters are thought to be management skills. The construction management system is also considered an effective way to incorporate assistance skills; however, its applicability will not be discussed here.

[Key word] Management skill, CM system

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3. Incorporating High Management Skills

A way to incorporate assistance management skills in LSC can presumably be achieved by placing an order with an HSC for one of the lots which have been allocated to an LSC, and have it play a role as a construction manager to oversee the other lots, assisting the LSC in skills lacking. This idea is shown in Figure 2.

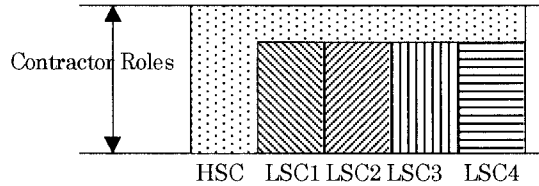


Figure 2: Incorporation of High Management Skills

The HSC plays more demanding roles than normally expected, while the LSC plays less demanding roles; therefore, it is considered necessary to shift costs. The required changes here are likely to pertain to management skills, specifically site management costs including labor costs. However, it is very difficult to measure the changes quantitatively.

4. Case Studies on Cost Shift

Hypothetical case studies are shown in the table below, assuming construction projects are allocated equally between one HSC and four LSC. Some cases show ratios of shifted amounts to the entire construction price (as in ratio of construction management cost to construction price) when part of the LSC site management costs is shifted to the HSC.

Table 1: Case Studies

<Model> Net Construction Cost (Unit: ¥1000), River & Road Structure Work

Lot No.1, HSC	100,000	Lot No. 3,LSC2	100,000	Lot No.5,LSC4	100,000
Lot No.2, LSC1	100,000	Lot No. 4, LSC3	100,000	Net Construction Cost Total	500,000

<Case> Case-1: Normal (No cost shift)

Case-2: Shift 1% of LSC site management cost to HSC

Case-3: Shift 3% of LSC site management cost to HSC

Table 2: Computation Result

CASE-1	NetConstruction Cost	SiteManagem-ent Cost Ratio	Construction PrimeCost	GeneralManage-ment CostRatio	Construction Price
HSC	100,000	15.35	115,354	10.86	127,885
LSC1~4	100,000	15.35	115,354	10.86	127,885
Total	500,000		576,769		639,426

CASE-2	NetConstruction Cost	SiteManagem-ent Cost Ratio	Construction PrimeCost	GeneralManage-ment CostRatio	Construction Price	Cost Shift Amount
HSC	100,000	19.37	119,370	10.83	132,292	4,407
LSC1~4	100,000	14.35	114,350	10.87	126,783	Ratio to Construction Price
Total	500,000		576,770		639,426	0. 7 %

CASE-3	NetConstruction Cost	SiteManagem-ent Cost Ratio	Construction PrimeCost	GeneralManage-ment CostRatio	Construction Price	Cost Shift Amount
HSC	100,000	27.38	127,380	10.75	141,076	13,191
LSC1~4	100,000	12.35	112,350	10.89	124,588	Ratio to Construction Price
Total	500,000		576,780		639,429	2. 1 %