

# (VI – 37) Development of an extended evaluation framework for awarding a public project

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**1)Introduction:** It is desirable that a bidding system should have as much competitiveness and transparency as possible. Generally a project is awarded to the lowest bidder. Nowadays, this bidding system is widely used in many countries with various types of framework. However, the unidimensional competition with respect to the cost seems to have close relevance to the increasing number of claims and litigation, cost overrun, problems in quality, or even dumping. This may infer that the lowest bidder is not necessarily the reasonable choice for the owner. The objective of this study is to discuss an extended evaluation framework for awarding a public project.

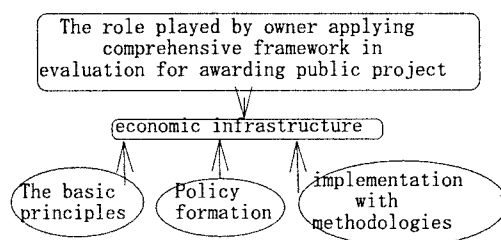
**2)Specification Vs quality:** Performance specification describes requirements for the end result, and prescriptive specification describes requirements for the development of a product. The requirements are contractually defined by the nature of the product. Then, we may agree that quality should be certified based on the satisfaction of the requirements.

**3)Audit system:** To smoothly achieve the quality of a product with high reliability, an evaluator should distinguish and keep track with the program of quality management and control work conducted by contractors. Suppose that we define the cost of quality as the costs associated with preventing the deviation of the end product's quality from the performance specification and appraising the end product's quality. Then an evaluator should also be aware of this cost of quality. High cost of quality will erode the quality performance of the contractor. Subjective evaluation of the quality is also encouraged together with the assessment of the conformance of requirements made throughout the entire construction process.

**4)Cost of quality Vs Price of quality:** The cost of quality becomes an additional cost to the normal construction work cost and is partly inherent cost. In many cases it seems desirable to introduce direct competition with respect to the quality with clear objectives. The budget allocation by the owner for the quality will reflect the owner's incentive of enhancing the quality. One of effective ways for the allocation is premium, that is, an incentive to pay back for the quality. However, the following points should be mentioned: first, the effective incentive of enhancing the quality can be achieved through the feedback of the records of the previous completed projects which

are similarly classified. Second, the amount of the premium for this preference should be reasonable. Discussion for determining the bidding premium given capable contractors will be made in section 6.

**5)Overview of the system:** The following figure shows an overview of the system:



The basic principles are to stimulate the competitive nature of industry, induce the vitality and viability of the industry, activate free competition in the market, and give an incentive of technology development. Policy formation should be to establish an effective multilateral framework of objectives. Implementation with strategies and methodologies is flexible and active approach to realize the policy formation.

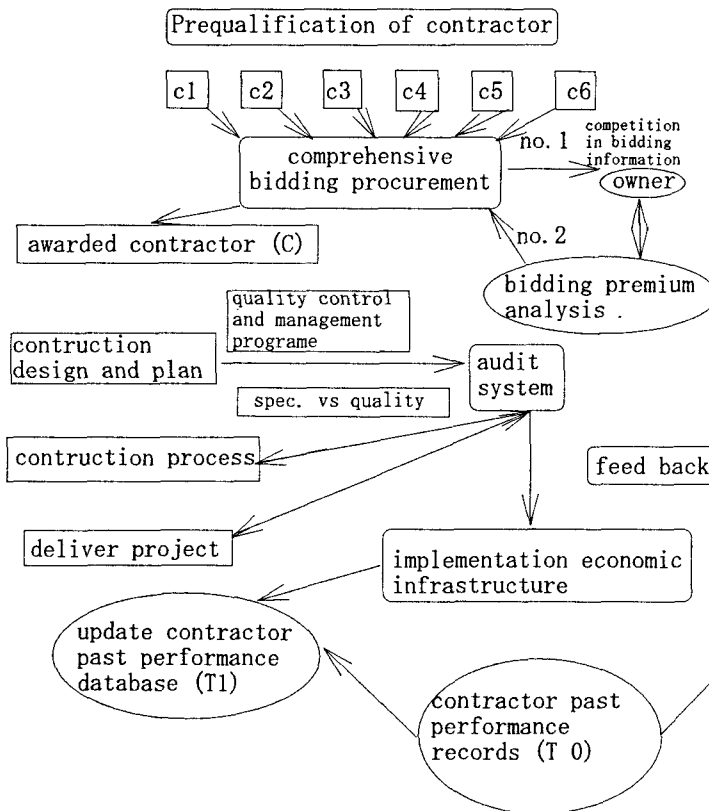
**6) Implementation of Economic infrastructure :** At this stage, it is important to clearly define attributes of specification standards and requirements. It is then possible to categorize them into durability, safety, aesthetic value, serviceability, facilitation and coordination of the process, and maintenance management cost. Methodologies for rating, weighting, and obtaining an index for each attribute might be among concept of hierarchical objectives, the fuzzy set theory, and the value tradeoff, etc. The rating is influenced by external conditions such as characteristics of industry, local technical skill, technology development level, and contracting law. These external conditions can also be decomposed.

**7) Bidding premium:** Criteria to determine the amount of reasonable bidding premium might be among competitive advantage in bidding, the size of the project, the complexity of the project, cost benefit for expertise manageability skill, financial conditions of the owner, national economic conditions, and social value and background.

Since the investment in each project should be approved by the politicians, taxpayers, economist, governor, etc., the bid evaluation stage should be easily understood. Therefore, it is worthwhile transforming the obtained index associated with each attribute into monetary terms.

**8) Conclusion:** A bidding system widely used, to select the lowest bidder, seems to have several drawbacks. It is desirable to develop a system which enables us to smoothly achieve high quality with high reliability, have high transparency, promote fair

competition, industry's competitiveness, and technological development, reduce the dumping problem, reduce the number of claims and litigation, increase benefits in the short and long terms, and incorporate the life cycle cost of a project. The following diagram is proposed as an example of a new procurement system on the basis of the discussions in the previous sections. Although the proposed system has much room for improvement, this system partially seems to have some potential to mitigate some of the above mentioned problems.



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