



CONSTRUCTION INDUSTRY INSTITUTE®

COMMODITY VS VALUE-ADDED CONTRACTOR SERVICES

Construction Industry Institute

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Commodity vs Value-Added Contractor Services

**Prepared by
The Construction Industry Institute
Commodity vs Value-Added Contractor Services Research Team**

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Executive Summary

The engineering and construction industry continues to grapple with the issue of “value-added services.” Are such services really value added or are they simply commodities to be purchased on the open market under competitive bidding procedures? A primary problem is the fact that owners and contactors use different terminologies and definitions when discussing this controversial issue. As a result, both parties often become frustrated with each other. Because of the varying definitions used by industry practitioners, miscommunication not only occurs between owner and contractor, but also within their own organizations.

As a way to overcome this communication barrier and to achieve an objective basis to conduct a detailed study, CII established the Commodity vs Value-Added Contractor Services Research Team to develop a set of common definitions. The effort by the research team includes the following terms:

- **Value** – benefits provided (used with modifiers such as market value, perceived value).
- **Value-added** – marginal increase in value created by features or functions of a good or service.
- **Net value-added** – value in relation to its associated cost.
- **Differentiation** – dissimilarity of the features and functions of a good or service.
- **Commodity** – undifferentiated good or service.

Once the common definitions were established, the research team conducted a series of workshops with the two targeted groups isolated from each other. Although some criticism of the other side occurred during these workshops, comments during breaks tended to be similar to this quote from a contractor:

“We are often are own worst enemy and force the owners to treat us as a commodity.”

A quote from an owner also is similar:

“We do not do a good job of articulating what features and functions provide benefits and thus the bid process is both vague and ambiguous for contractors.”

Following the workshops, the research team conducted a case study of a number of projects at one company and then analyzed data from a large number of projects from both owner and contractor pairs to identify which offerings in the bid really added value and which did not.

The results are surprising in that many services believed relatively important by contractors in making project proposals are not viewed as important by the owners evaluating the bids. The converse holds true in that some relatively important criteria from the owner’s perspective are not viewed with the same importance by the contractor.

Three of the most important conclusions drawn by the team from its study are:

- The industry needs to use common definitions.
- Contractors and owners should be aware that many service offerings relate to *value-added*; however, only a select few actually contribute to net value-added.
- The more the owner emphasizes price as the deciding factor, the less *net value-added* is actually realized.

The team also concludes that value can only be measured from an owner’s perspective. And, just as important, if owners are buying on price, they are missing net value-added. An overview of these problems and some possible solutions are discussed in the following chapters.

Introduction

Context for the Research Project

“Engineering and construction services are being treated more and more as commodities. However, the industry has invested heavily to define and implement industry best practices in an effort to maximize value-adding contractor services.

“What parts of the engineering and construction service business are truly commodities and what parts are value-added?”

*CII Request for Proposal, Commodity vs
Value-Added Contractor Services, 2003*

This research project’s specific objectives were to develop a deeper understanding and better communications regarding the value-add of engineering and construction (E&C) services. One important goal is to improve the procurement and marketing decisions by all stakeholders in the capital project delivery process. The research team, upon completion of its study, now has:

- Adapted the conceptual definitions of commodities and value-added in economic terms in order to develop a robust definition of these terms in the capital project delivery context.
- Tested these definitions against participation in capital project delivery processes by members of the research team to ensure that the definitions adequately capture nuances of owner needs and contractor market positioning. Workshops, case study, and data collection were used to triangulate the potential use of the definitions.
- Developed models based on economic theories regarding resources and transactions.
- Evaluated perceptions of differentiators used by owners during pre-qualification and final bid processes.
- Determined that owners and contractors have perceptions of key differentiators that often differ dramatically.

- Determined the relation of key differentiators to net value-added for the owner.
- Translated results into models and suggestions that can lead to a positive dialogue in the construction industry for achieving higher net value-added for owners and recognition of value-added provided by contractors.

Background

Beginning in the late 1990s, intense price competition in the global market and the demand from investors to provide higher profits led owners to look at all areas of expenditure for cost savings. Increasingly, owners began to view engineering and construction services as a commodity. The providers of engineering and construction services responded by citing that their output was a value-add and not a commodity—and so an impasse ensued.

Engineering and construction services are still frequently procured by owners as commodities. E&C services are highly complex processes with multiple interfaces that need careful and considered management. These complex interfaces may be overlooked if owners make procurement decisions that, in effect, categorize all engineering and construction as commodities.

This situation leads to a lack of understanding regarding the components of the capital facility delivery process that may be properly treated as a “commodity” and those components that would be better treated as “value-added.” As a result, owners and contractors continue to be at odds with each other over how capital facilities should be best procured, making it difficult for contractors to develop strategic marketing and investment plans and for owners to understand how to approach the market for construction services.

Contractors perceive that they are either under-valued by the owners or are not recognized or accepted as providers of value-added services. They need improved methods for differentiating their services from other contractors, and at the same time they need to improve the marketing of their services.

Market Trends

A series of market trends has been driving engineering and construction services to be viewed by many as simply commodities, including:

- Intense cost pressure and price competition in global markets (not just construction).
- Investors' demand for greater profitability and returns on investments.
- Globalization and low-cost sourcing.
- A cyclical downturn in demand for construction (partially as a result of owner investment in fixed assets being reduced to provide a return for investors).
- Owners (in a desire to reduce overhead) downsizing their internal engineering capabilities and relying increasingly on contractors to fill this role.
- Both owners' and contractors' inability to justify expanding the use of a relationship management approach that worked well in the past.
- Contractors, desperate to cover fixed costs, undertaking work at profit margins tending to be zero or less.
- A general over-capacity of contractors through consolidation, bankruptcy, reorganization, mergers, and takeovers.
- The owners' procurement functions being tasked to increase profitability by delivering savings in all areas of expenditures, achieved mainly by price cuts; shifting risks to contractors; bidding services as well as equipment and goods; and relying more on legal contracts than on relationships. In some situations, decisions have been shifted from engineering to procurement.
- The advent of advanced purchasing and web-based tools, which is enabling Internet-based consortiums, electronic bidding, electronic purchasing, and reverse auctions.

Owners' Perspectives

Faced with these market trends, owners worked to “bundle” the various E&C services from contractors to obtain competitive bidding on an entire project. This led to integrating undifferentiated materials, design, and modular systems with differentiated E&C services. Owners were driven toward low cost and became less interested in the “value-added” offerings that contractors proposed unless that value could be translated into an immediate tangible benefit (lower cost) for them. In their efforts to get more facilities constructed within the constraints of lower capital budgets, owners demanded (and often obtained) contractor “A-team” resources while maintaining low-cost bids. In other cases, owners moved to unbundle contracts, which then allowed them to negotiate directly with all contractors and subcontractors. The idea is that the owner assumes all risks and looks to each provider of an unbundled service or good to negotiate a price appropriate for the degree of differentiation provided by the service or good.

Contractors' Perspectives

Contractors were puzzled by the lack of owner appreciation for their “value-added services.” The contractors’ highly skilled resources (employees, design productivity tools, and execution processes) that help the owner deliver capital project excellence were deemed desirable by the owners, but seemingly “for free.” In most cases, the contractors valuable, high-end services were being lumped together with the more mundane, common, and routine aspects of work. Once aggregated, contractor services were being competitively bid, sometimes through reverse auctions that offered little opportunity to offer and explain the base proposal and alternatives to the owner’s technical organization, much less the intangible benefits that differentiated one contractor from another. Owners also had expectations of contractors to provide services from low-cost, offshore engineering centers, where hourly rates are a fraction of those in the U.S. and Europe.

The Problem

The problem essentially is that owners and contractors are using terms and definitions that the other does not understand. Most owners no longer retain in-house engineering capability and need to rely increasingly on contractors. Because contractors may not have a clear understanding of what owners want and are willing to pay for, they are sometimes forced to waste precious time and money pursuing work that they will not be awarded. Contractors do not critically analyze the services they offer in order to market and sell specific services profitably. Also, they may not appreciate that the degree of differentiation depends on how the specific owner views them and not on how much the contractor wants its services to be perceived as value-added.

These problems are depicted in Figure 1. Communication flowing from the owner is represented with the downward arrows, while the value-add that contractors perceive that they can contribute is represented in the upward arrows (the wider the arrow, the higher the value-add). Value-added is best achieved when the contractor’s marketing and delivery strategies have a closer link to the owner’s marketing strategy. The transaction interface shown here can actually become a transaction barrier, further resulting in communication breakdowns and failure to produce the results that both parties truly need and desire.

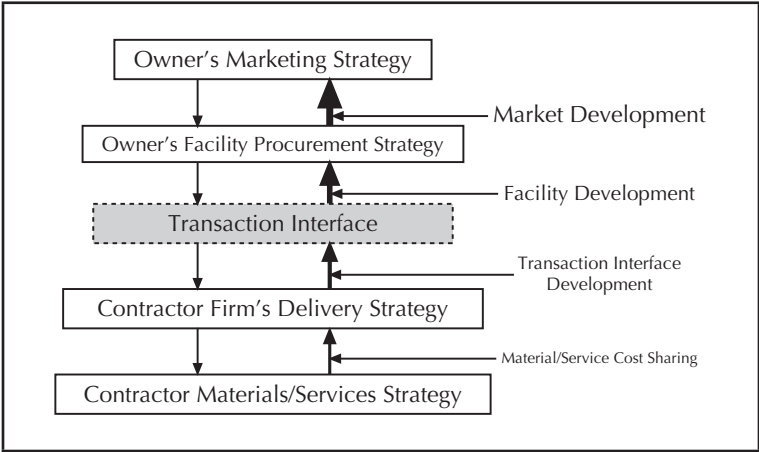


Figure 1. The Value-Added Contracting Model

Research Team Methods

In order to address commodity versus value-added issues, the team adopted a wide variety of approaches and data gathering procedures. To get the sense of the subject, the research team viewed a video made at the CII Board of Advisors meeting in June of 2003 at which the research project was funded and its scope outlined. Various members of the Board, from both owner and contractor organizations, spoke on-camera of what they perceived to be the issues, the problems, and the solutions. The research team revisited this video during the course of the research to ensure it was meeting the intent of the research objectives. The team recognized that terms such as “commodity” and “value” meant different things to different people, and this disconnect on common definitions and terms was resulting in significant emotional reactions during any discourse on the subject.

The team began the research project by developing precise definitions for the various terms it would use. This process took several meetings to complete. A series of workshops was then held for owners and contractors to test the definitions and to gather additional input. A case study was undertaken at one owner company to validate the “influence curve” (i.e., the concept that influence on costs and benefits is highest in the conceptual stage and declines during the course of a project) and its importance in determining project scope and upfront engineering. The study was conducted over a three-month period on 18 projects and validated the influence curve and confirmed the actual numbers empirically.

From the relationships suggested in the workshops and the outcomes of the case study, the team developed a data collection instrument with which to solicit project data. The results of the data analysis and the conclusions are discussed in Chapter 3.

Definitions and Workshops

The team thought it vital to the success of the study that precisely-defined terms should be used to help aid understanding. The team invested considerable time in developing a set of defined terms that could be used by all participants throughout the industry. Table 1 provides the definitions of key terms. “Differentiation” became a key point of clarity for the team and industry participants in the workshops. Defining a “commodity” as an undifferentiated good/service provided clarity for all stakeholders. Using this definition allows an owner and a contractor to discuss what services actually do provides differentiation, how much value is added by the differentiation, and what an appropriate cost is for the differentiated service in relation to its benefits. A complete set of 25 terms with definitions is contained in Appendix A.

Table 1. Definitions of Key Terms

Value – Benefits provided (used with modifiers such as market value, perceived value.)
Value-Added – Marginal increase in value created by features/functions of a good/service.
NetValue-Added –Value in relation to its associated cost. (The same concept as economic value-added.)
Differentiation – The dissimilarity of the features and functions of a good or service.
Commodity – An undifferentiated good/service.

Workshops for Owners and Contractors

Workshops organized by the research team were designed to test the initial thoughts among team members as well as to get feedback on (1) acceptability of the definitions and (2) establishing possible relationships among value-added and commodity factors. Team members agreed that to facilitate better discussion, attendees to the workshops should be segregated into owners and contractors.

The first pair of workshops (one for owners and one for contractors) was held in Houston in September 2003, in which attendees were largely drawn from the petrochemical sector. A second pair of workshops was held in Philadelphia in October 2003, with major participation from the pharmaceutical sector. The workshops, with some attendees coming from Europe, were well attended and the discussions and exchanges among participants were lively. Although many attendees came from CII member organizations, a large number came from contractors and owners that work with CII members. The sessions provided valuable insights to the team and helped confirm and endorse the direction the team was taking.

Key Relationships from Workshops

An important component of the workshop process was to elicit working hypotheses from the experts attending. Subsequent work by the team was directed to selecting the critical relationships proposed at the workshops and then attempting to confirm or deny them via data collection and analysis. Although some minor differences were evident, the concepts across the two industries represented at the workshops, petrochemical and pharmaceutical, were strikingly similar.

Based on voting at the workshops and subsequent rounds of voting by the team, the key relationships identified are summarized below, organized into categories:

Owner Procurement Strategies

- More investment in front-end loading increases life-cycle net value-added (the influence curve).
- A higher level of risk sharing by a contractor produces a higher perceived contractor value-added.
- High levels of contractor knowledge of owner businesses are associated with high levels of owner perceived net value-added.
- Low-price owner procurement tactics for engineering services promote the concept that engineering services are a commodity.

Contractor Marketing Strategy

- A contractor's competitive advantage is not a perceived value-added to owners if the owner gets no competitive advantage.
- Earlier contractor involvement during the design process produces a higher net value-added.
- A contractor's competitive advantage is not a perceived value-added to owners who do not measure net value-added.
- A higher level of risk sharing by the contractor requires a higher pricing strategy.
- High levels of contractor knowledge of owner businesses will lead to increased value-added by that contractor.

Translation Model

After the team completed the definition and workshop phases of the research, it became evident that the industry currently suffers from a major disconnect among the various stakeholders. Figure 2 shows the current state: the existence of a translation barrier blocking a useful dialogue.

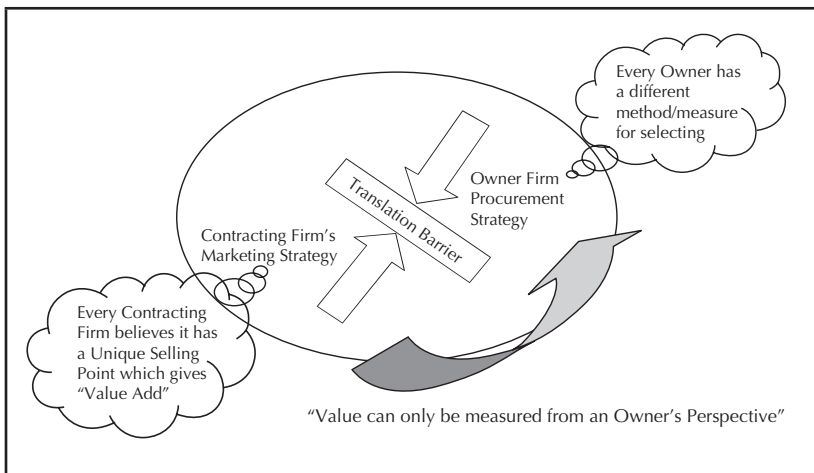


Figure 2. The Translation Barrier