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How to use Blended Rates appropriately in project contracts

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Engineering and Construction contracts have been using 'blended rates' for a very long time. The recent trend of the usage of this term is disruptive in terms of terminology: new acronyms or new words are used to change the old concept. The new concept of an all-encompassing blended rate appears to be simplifying contract management, but this new approach requires strict estimating protocols to make sure that they reflect the actual costs. In this Expert paper we describe the content of Blended Rates and in which contract their usage should be restricted.

Introduction: traditional usage of "Blended Rate"

Generally, blended rates were called the average rates or all-inclusive rates in contracts. For example, in construction, it is one single rate in the contract, for one cubic yard or one cubic meter of plain concrete that includes the price of the materials, cost of any additives, labor or cost of the machine to mix, transportation, delivery, placing, vibrating, compacting, troweling, finishing and curing. In reinforced concrete that also included the price of rebar, cutting, bending, placing, tying and spacers, tools, tackles and labor all included in the price of reinforced concrete. It also included labor cost for erecting, leveling the formwork that is used to hold the concrete in desired shape until it is ready to be removed, the concrete finished and cured, this includes all labor, tools and materials cost.

Similarly, in structural steel erection work, blended rates used to include the cost of steel, machining, bending, finishing, welding or riveting or bolting each together to give the shape of the designed structure, including the labor cost and time spent by the hoisting machines. In excavation, it included the price for operating the excavating machines and operators cost, hand excavation where necessary, leveling the subbase to the specified grade and placing a mud mat or lean concrete to install the rebars. In many instances it also included the cost of shoring and supporting the sides in trenches and in deep excavations. These are some of the examples of 'blended rates' that have been in existence in project contracts for a very long time, but no one considered them as a 'blended rate' for construction.

What is the new usage of "Blended Rate"?

Recently Consulting Engineers and Construction Contractors have opted to use one single rate, which

is called the "Blended Rate" for all the work performed under a single project. This approach is also favored by government as a simplifying approach. In other words the billing is easy, just compute the number of hours spent by all personnel working on the design, drawing, checking, approving and releasing the final product for construction and multiply by 'one single rate' to forward to the Client for payment. The rate also includes the cost of doing business, like computers, printers, shipping, travel expenses, overhead; holiday and vacation pay for each individuals, insurance, communication, and other

known costs. The Contractor should identify who the personnel that will be assigned to the project, their basic hourly salary rates and all other expenses to complete the project for necessary approval of the Client. In a matrix management, personnel are drawn from the respective department and allotted to work on the project that should preferably be within the rate used to compute the blended rate.

Similarly, in construction, if the scope of work is well defined then the contractor can come up with one or two blended rates for execution of the project. In software design, web design and other Information Technology projects where the scope is well defined at the beginning, the duration is less than a year; the contractor may be able to work out a reasonable blended rate with the approval of the Client.

How to Compute new "Blended Rates"?

On short term projects it may be possible to use blended rates. If the project duration is short, then the escalation and inflation may not impact the cost of doing business. On long term projects it is advisable to work with applicable factors for calculating the rate for each discipline engineer or

New Blended Rates for Personnel are useful on small, short projects but not so much on large, long projects.

office staff. The assignment of experienced personnel to work on a large project has no limitations and the head of the project team will have the authority and opportunity to bring-in talented personnel to work on the project

Here is an example of a Feasibility Study for a Process/Chemical Plant Design and that will lead to a project execution and construction. The following personnel have been assigned to complete the study; a Project Manager, a Project Engineer, two Process Engineers, 3 Draftspersons and one Secretary. Prepare an Estimate of the cost of document control, computers, printers, and copy machines, communication equipment and other specific item that are to be utilized on this specific project.

Let's compute the blended rate for this project,

- Project Manager \$75.00 per hour,
- Project Engineer \$65.00 per hour
- 2 Process Engineers \$55.00 per hour/each,
- 3 Draftspersons \$35.00 per hour/each
- 1 Secretary \$22.00 per hour

This results in a blended rate of \$47.00 per hour. Assuming the project duration is 10 months, estimate the cumulative number of hours expected to be spent by all personnel assigned to this feasibility study. Multiply the computed work hours by the blended rate of \$47 per hour. Add benefits, holiday/vacation time, insurance, bonus and other costs associated with personnel assigned. Add forecast expenses, travel related cost and vendor related costs. Sum of all costs divided by the total forecast hours to spend will give the new "Blended Rate" that could be used on this contract. In this instance, an ideal profitable situation would be for the PM to perform minimum supervision and let the Process Engineers and Draftspersons do major work to their maximum capabilities with minimum supervision.

Conclusion

The "Blended Rate" application is a worthwhile simplifying move on small short-term project like Software Developments, initial Viability and Feasibility Study, Computer Modeling, Visualization of a large project and low cost short term projects.

However, on large and long multimillion and billion dollars contracts, Consulting Engineers and Construction Contractors should sign contract in the old-fashioned way where talented people have each an adapted applicable rate. Every project needs a careful evaluation as to the benefit of using blended rate and the advantages.

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About the author

Mr. Saty D Satyamurti, Ph D., P. Eng has many years of experience in the Program and Project Management of Engineering and Construction Projects, scheduling, quantity and cost estimating, budget preparation, manpower planning and forecasting, schedule and cost analysis and reporting. Prepared as built drawings and documented the history of some projects from inception to completion.

Range of projects managed and executed include, airports, industrial and commercial facilities, land development, onshore and offshore oil and gas production facilities, chemical plants and steel mills.

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