Backlog
An Eye to the Future

by David Elam

In recent columns we have examined key environment, health, and safety (EH&S) consulting firm metrics, including utilization, labor multiplier, billing rate, and revenue factor. In this column, we’ll examine backlog and why it is an important metric for EH&S consulting firms. While the aforementioned metrics are lagging business indicators, backlog is a leading metric and is predictive of future performance. In short, backlog is work that is yet to be completed.

In manufacturing and industrial organizations, products are made to satisfy just-in-time delivery models or to build an inventory that is consistent with buyer demand. Accordingly, backlog can be viewed with concern because it represents orders that are unfilled, suggesting that production cannot keep pace with demand. Unless the customer is purchasing a custom-made product with the expectation of delayed delivery, they can shop elsewhere for the product and buy it if the delivery schedule and price are consistent with their expectations.

In contrast, backlog is viewed positively in the EH&S consulting business. Firms want to build a healthy backlog because it provides management an indication of work that is available for staff in the future. When accurate, backlog is a critical metric for financial projection and forecasting. For EH&S consulting firms, total backlog consists of two components:

1. **Hard / Contract Backlog**: This is work that is contractually authorized and is either in process or expected to be completed. Clients have formally approved a scope of work and the EH&S firm has planned to do the work. For example, if the firm has signed a contract for a $100,000-project, the hard or contract backlog is $100,000.

2. **Soft / Factored Backlog**: This is work that has been proposed or expected, but not yet awarded. Many firms will factor soft backlog to reflect the probability that the client will (a) perform the work and (b) award the work to the firm. For example, if the firm submits a $100,000-proposal and the firm believes there is an 80% probability that the client will proceed with the project and an 80% probability that the firm will be awarded the project, then the calculated soft or factored backlog is $64,000 ($100,000 × 0.8 × 0.8). Other systems factor backlog based on historic win rates or by proposal stage.
A firm would calculate its total backlog by adding together all contract backlog and all factored backlog. Thus, based on the above two examples, the total backlog for the firm would be $164,000.

To explore how backlog works, it is important to understand “burn rate,” or how quickly the firm will consume backlog. Let’s consider an EH&S consulting firm that operates profitably with gross revenue of $1,200,000 per year. This firm requires an average gross revenue of $100,000 per month at its target multiplier to continue to operate profitably. Thus, the burn rate for the firm is $100,000 per month.

If this firm has $400,000 in total backlog, it potentially has approximately four months of work that has to be completed; however, the actual analysis of backlog adequacy is more complex than simply dividing the total backlog by the burn rate. It is important to understand the project life cycle and the distribution of backlog between hard and soft components. To further explore this example, let’s assume that the $400,000 in total backlog represents $200,000 in hard backlog and $200,000 in soft backlog:

• If the contract backlog is comprised of project work that can be performed in 45–60 days, the firm is probably in good shape if it is (a) able to convert $100,000 in soft backlog to contract backlog each month and (b) replace the converted soft backlog with new, high probability soft backlog each month.

• If the contract backlog is comprised of project work that requires 90–180 days to complete, the firm will likely find staff falling below utilization targets unless there is both (a) highly successful and immediate conversion of soft backlog to hard backlog and (b) timely replacement of converted soft backlog with new, high probability soft backlog.

• If the contract backlog is comprised of project work that must be completed in less than 45 days, the firm will likely find itself short-staffed and falling behind on both project deliverables and new proposal development unless it is able to add staff or subcontract work.

For these examples, we have focused on total contract value. Contract values will reflect varying direct labor costs, subcontract expenses, and other project expenses. If a typical contract for the EH&S consulting firm is 80% direct labor and 20% subcontract and project expenses, contract backlog available to support the burn rate will be reduced for a contract that is 50% direct labor and 50% subcontract and project expenses. Thus, it is important to understand the distribution of contract revenue between direct labor and project expenses when evaluating both hard and soft backlog. Often, firms will use net labor backlog and labor burn rate, versus total backlog and gross revenue burn rate, as it is more predictive for staff utilization.

Additionally, we have not considered the performance period in these examples. In most cases, firms issue proposals that are consistent with their project delivery cycle. Consider the firm that typically issues proposals for 15 days of work that is anticipated to start 120 days from the proposal date with contract award anticipated 60 days from the proposal date. If the firm is diligent about updating its proposal log with respect to lost work, total contract backlog will align with the burn rate. But in some instances, the firm will issue a proposal for more substantial effort in the near term or for project work at some distant future date. Similarly, large projects under contract may have a nonlinear or unusually slow spend rate that should be considered. In these cases, the backlog can be skewed. For this reason, using a specific performance period when calculating both hard and soft backlog will produce the most accurate forecast of available backlog.

Backlog is an important metric for EH&S consulting firms that allows management to make effective decisions regarding workload balancing, staff adjustments, and business development. Hard backlog is easier to understand and manage than soft backlog. Soft backlog represents potential work that determines the direction of the firm. For this reason, soft backlog requires proper initial attention to accurately estimate both the probability of the performance and award and ongoing attention to ensure that proposals included in the soft backlog are indeed active.

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