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Benchmarking: Ensuring Feedback from Cost Estimating to Project Control and Back

One of the major challenges for project-driven organisations is the quality of cost estimating. It plays a significant role in the final success of a project. For less mature organisations, the quality of estimating often relies on the infamous 'little black pocket booklet' of an expert estimator. However, the quality of estimates can be greatly enhanced by an appropriate benchmarking process that feeds back actual, timely cost information into estimating. Setting up and running this process is difficult and only a few very mature organisations manage it effectively. In this White Paper we examine the main stumbling blocks and what are the best practices for effective benchmarking processes.

The value of proper benchmarks

Before dealing with the issues and stumbling blocks of benchmarking it is important to underline why proper benchmarks are essential for organisations.

Not having proper benchmarks will lead to poor estimates. Because the intrinsic risk of estimate quality is unknown, poor estimates lead to a level of risk for the organisation which becomes unmanageable. This situation cannot be acceptable for management, because the sustainability of the business becomes a matter of luck.

However, we too often observe that this issue is not addressed properly. Confidence in the estimators becomes subjective, and the cost basis used for estimating is not challenged frequently enough.

Issues making setting up a cost benchmarking process difficult

The review of the common issues below will allow us to determine what are the main qualities of a successful benchmarking process.

The cost control breakdown necessarily differs from the estimating breakdown

The estimating breakdown is designed to ensure completeness of the estimate and traceability of its components to the method or origin of the estimate. It will vary in depth and structure depending on the estimating process and which techniques are applied. Some parts of the estimate might be very detailed; others using parametric estimating less so; and some parts are based on quotes from vendors and subcontractors which have been carefully normalised, according to a preliminary execution and subcontracting plan. Transverse standard allowances may be used for ancillary services such as inspection and logistics as a percentage on top of existing quotes without having to establish how such services will be contracted.

In contrast, the cost control breakdown is designed to enable effective control of the project performance baseline and enable planning, collection and reconciliation of costs at suitable levels to meet organisational needs and system capabilities. It will thus be based on the type of cost and how it will be spent and is thus highly dependent on the subcontracting approach. Ancillary services may be contracted transversely for the entire project or not; changes to the contracting strategy will appear when sending Requests for Quotation, splitting or joining scopes; subcontracts will be structured in different cost types to facilitate actual control. Organisational decisions regarding the structure of the project and responsibilities (packaging), and thus reporting requirements, may also induce splits of budget.

At the start of the project, it is thus necessary to define the relevant cost control breakdown for proper control and reporting and map the estimate into this breakdown.

With a view to benchmarking, some organisations or tools try to impose the same breakdown for estimating and for cost control: this is not a good solution as it complicates either or both estimating and cost control efforts creating risks and inefficiencies. This almost always turns out to be impractical.

> **Trying to use the same breakdown structure for Estimating and Cost Control is risky and inefficient**

Therefore, the adequate approach is to recognise that the breakdowns should be different, and that a full traceability of the remapping of the estimate into the cost breakdown needs to be available, so that it can be reversed as needed when actual cost data becomes available. Modern data management tools can be enabled to allow this.

Benchmarking is not performed at the right level of detail

The level of detail at which benchmarking is performed is essential. The benchmarks need to be developed from actual data and structured to enable estimating within the estimating breakdown structure. Benchmarking cannot obviously be performed at a lower level of detail than actual cost control (and cost control is always performed at a certain aggregated level). However, the level required for benchmarking will often differ from the actual control level.

For Contractors, we too often find that benchmarking is performed at a too low level and this may lead to inappropriate orders of magnitude. The consequences are the following:

• Lack of effectiveness of the process

• Too low level of details which creates issues when trying to generalise or transfer data to a similar situation elsewhere.

The solution is to identify the level in the cost breakdown structure at which benchmarking is relevant which may be different for various types of costs.

For Owners, data may not be available at a sufficient level of detail in particular if large lump-sum contracts have been awarded. Variation rates proposed by Contractors typically would not reflect their cost basis. Therefore, benchmarks may only be available at a too high level and additional professional support might be required to have proper benchmarks from the market.

Actual cost data is not carefully vetted before being considered for benchmarking

In addition to pure cost data, the context of the data needs to be understood. It is necessary to appreciate if particular circumstances might have impacted the available cost data, and what is the applicability of such data. It is particularly important to establish the quality of this data before feeding it back into the organisation's systems. The risk of not properly establishing this quality is to pollute the estimating database with irrelevant data.

Therefore, a proper traceability of the benchmarking process needs to be guaranteed. This requires proper reporting of how data has been recovered, vetted, possibly modified to account for certain parameters, before being considered as a benchmark. Full documentation of the process is necessary.

Actual cost data has become obsolete when benchmarking is performed

One of the important stumbling blocks is that benchmarking data is related to its date (contracting and execution dates). Sometimes organisations tend to wait until the end of a project to run the benchmarking process. This might be too long after the actual cost has been committed and the related data might be obsolete (even if some escalation parameter can be applied). It is better to have access to the freshest cost data available. Therefore, the benchmarking process needs to be enabled to be run on live projects. Machine learning and advanced data analysis tools may help for that purpose.

Identify the level in the Cost breakdown structure at which benchmarking is relevant, and remap the estimate structure accordingly to reverse actual costs when needed

Actual cost data is not accessible

Cost data is generally quite confidential in organisations. In some organisations, it may even be impossible for estimators to have access to actual cost data across the portfolio. It may be due to the lack of systems; or even in less mature organisations by the fact that project managers keep the information with themselves and don't want to disclose it during project execution. The availability of database systems with proper security approaches is a real benefit for data access.

Benchmarking is not sufficiently standardised across the entire activity and projects portfolio

The value of benchmarking is created by the accumulation of data over time and geographies. Therefore, the benchmarking indicators have to be standard across the entire portfolio of projects, thus the process needs to be sufficiently standardised. We often find pockets of benchmarking excellence, typically on a specific project or a specific project office which do not extend to the entire business. Lack of standardisation also creates issues when interpreting benchmarking data originating from other project offices.

Qualities of a benchmarking process

The qualities for a benchmarking process inferred from the preceding analysis are thus:

- Transparent mapping between estimating and cost control that allows to recreate estimating benchmarks from actual cost control figures,
- Benchmarking needs to be performed at the relevant level,
- Benchmarking should be timely to ensure data is current,
- Actual cost data need to be available and be interpreted in detail to understand what is included or not, and this requires careful analysis,
- The benchmarking process needs to be standard across the portfolio of project to ensure continuity of data across the entire activity.

Therefore, we believe that the benchmarking process needs to be sufficiently standardised across the organisation with proper identification and explicit identification of geographical specifics. The role of estimating and cost control breakdown need to be addressed properly and standardised at a relevant level, taking into account that because the objectives differ, the breakdown will be always different between estimating and execution. Freedom should be provided at the lowest level to let each project adapt to the specific circumstances as needed. The level of benchmarking should be carefully vetted to make sure that it remains meaningful, conserves process effectiveness by not involving too detailed work of limited value.

Who should run the benchmarking process?

Because the focus of cost control during a project needs to remain on properly controlling the project in the midst of a flurry of activities, we believe that the benchmarking process needs to be run by the estimating function. Cost Control has to be involved to provide the environment data around the numbers, but its involvement needs to be minimized, and all the data crunching should be performed by the estimating function.

This will also ensure consistency and quality of the final data as it will be developed by the future users.

Conclusion

Development of an effective benchmarking process is a structural effort for any organisation. Its importance is too often underestimated. However, it is invaluable for the sustainability of the business: irrespective of commercial approaches and decisions on price, it is essential to have access to a good quality cost basis from which proper decisions can be taken.

This White Paper describes the essential practical qualities that a cost benchmarking process must have. The process must then be formalised and run regularly on all live projects. It is an extremely important process which represents a significant investment that all mature project-driven organisations make.

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