Relevance of Financial Budgeting (Cost Estimation) for Projects in Construction Sector

When CAs as Project Auditors and Consultants ask the Top Management and the Project Manager (PM) in medium and small scale organisations to make a project budget or in simple words, a Cost Estimate before commencing the work, on most occasions, the reply is in the negative. The management feels that there is no need for a budget as the job has very good profit margins. When we ask for some working on these profit margins, we find them taking out some rough piece of paper carrying the working. The most crucial part when it comes to execution is that any delay can seriously damage the margin calculations. This becomes more critical when the organisation is executing several projects simultaneously. In such circumstances, there is no better way than making a project budget to monitor the performance. Read on to know more…

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What is the Budget

Budget is a mirror of a Project – a Mirror shows how we look, what improvement is required and to correct the same before we leave the mirror. It's a Clock of the project and a Control document on the basis of which one can control the cost.

Why is the Budget Important for the Construction Sector

For a construction site, the budget can answer various questions.

Before Execution

- ✓ Assessment of what is expected in terms of Net Profit and Net Cash Inflow (It is important to realise the difference between the two terms for understanding the budgeting in real sense)
- ✓ Assessment of how far the project would be able to finance the fresh equipment purchases/heavy rentals in case the organisation wishes to avoid the purchases.
- ✓ Planning the demobilisation of manpower and resources from other projects which are in completion stages to the new project and in case of any shortage, planning fresh recruitment/ purchases.

- ✓ Freezing the BOM for major project items to ascertain the total requirement based on which commercial purchase policy can be decided.
- ✓ Identification of project items where organisation would incur profit or loss, to know clearly where to pitch hard in front of the client. This would also help in identification of right sub-contractors for any given project item.
- ✓ Division of costs into Fixed and Variable and fixing the limits for fixed costs to achieve the profitability targets.
- ✓ Develop the forecasting skills of Site Project Manager/Staff as budgeting is a continuous learning exercise giving a good project insight before execution.
- ✓ Raise Cost consciousness amongst the Project Team members.
- ✓ Planning an incentive package for the project execution team based on the achievement of budgeted targets.
- ✓ Plan the scheme of Indirect Taxation mainly VAT and Service Tax, that is whether to go for composition or regular schemes looking at the exact element of material and labour involved. A bad decision here can adversely affect the project margins.
- ✓ Freezing the project mobilisation costs and to hard press the need for mobilisation advance from the client.
- ✓ Cost of medical, health, safety articles, and specialised agencies may be envisaged before starting.
- ✓ Read the contract for even making labour camp and other facilities.

During Execution

a) Clear Assessment of Project Performance.
b) Quantity reconciliation of Client *vis-a-vis* sub-contractor to ascertain unbilled quantities.
c) Assessment of exact time required for completion of the balance project at any stage and the impact of project delay on the profitability.
d) Comparison of budgeted costs verses actual costs and identifying deviations on a monthly basis with a view to plug the loopholes, if any.
e) Ascertaining the future cash flows of the project and planning of bank finances accordingly.
f) Resource optimisation in a way that it ensures that the Project Manager doesn't go all out in achieving his production target, so to keep a check on him.

These and many more questions can be answered properly only with the help of the budget. The idea is to set up a base document, which can then be compared with the actual results on a periodic basis so as to give the first feel of where the project is heading.

Monthly Quantitative Breakup

Budget not only contains the cost estimate for work completion, but also monthly targets for the quantities to be executed. This is to ensure that the project gets completed within the schedule. Monthly targets should not be set without taking concurrence from the Project Manager as he may also keep the achievement subject to availability of proper staff, equipments and other resources by top management. Delay in availability of resources under client scope needs to be documented and regularly communicated to the client. Monthly targets should be set keeping in mind festivals (say Holi, Vishwakarma, Diwali) and seasons (say monsoon).

Concept of Fixed Cost

Monitoring of Costs is possible only by bifurcating them into fixed and variable costs. It is a general concept that without any standard, it is not possible to monitor and control the time & cost. To explain with an example, let's say that the cost of cement or cost of measurement labour can be directly linked with actual client billing and hence, there is a better control. But costs like staff salary, staff accommodation, finance costs cannot be directly linked with the project and hence are fixed costs. These are to be incurred even if there is no actual production at site.

Following are some fixed costs which need careful monitoring especially in project delays: -

S. N.	Fixed Cost
1	Equipment Cost (Depreciation, Rent, Maintenance, Operation Team)
2	Salary Expense (Project Manager, Billing Engineer, Junior Engineer, Supervisor, Safety officer, Store staff etc.)
3	Other staff expenses like Staff Accommodation & Employer PF contribution
4	Vehicles for staff movement
5	Fuel Cost
6	Cost of Other Misc. Admin. Assets like portacabin, computers, air conditioner, furniture & fixtures etc.

S. N.	Fixed Cost
7	Security Expense
8	Internet & Telephone expense
9	Bank Guarantee Commission
10	Interest Cost of Cash Credit and Term Loan facilities being used for the project
11	Estimated cost during the Defect Liability period

One thing is very clear that, if the project duration increases due to slow execution, it is sure to impact the profit margins by way of increase in the fixed costs, both visible and invisible. The increase is not only on account of the fixed costs but may also attract Liquidity Damages (LD) from Client. The invisible cost is by way of not getting repeat work from the same client in future. So the big question to be asked is how best to monitor and control these fixed costs.

a. Fixing the monetary limits for each of the fixed cost element. The limits need to be different for both peak and non-peak months. The first and the last couple of months may be considered as non-peak months depending on the total duration of the project.
b. As far as possible, efforts should be made to link the elements of fixed cost to project items to keep an overall control. For e.g., let's say a construction site has various equipments like Batching Plant, Millers, Vibrators etc. which consume diesel. One way is to define standard diesel consumption per cubic metre of concrete poured at the site. This way it makes more sense to study the variance with meaningful analysis and monitoring on cost.
c. Monitoring the execution backlog and impact that the fixed costs can create by delay of single week/fortnight/month also needs to be worked out. And if the delay can be attributed to client, then necessary correspondence is to be initiated to raise the necessary debit notes to the client.

Who Should be Involved in Budget Preparation and at What Stage

Project Director/Project Manager/Accounts Manager should be the ones primarily to be entrusted with the task of making the budget.

Budget should be prepared at the tender stage and then needs to be fine-tuned once the project is received. Normally, Site Mobilisation activity should not be initiated before signing off the draft budget documents. It may be finalised after one month of mobilisation after a proper understanding of the local conditions.

Basic Approach towards Making a Budget

These days, softwares are available where the BOQ can be fed with all the factors of production to prepare a budget. But even otherwise an organisation may resort to preparation of a budget, by simple tools like MS Access or MS Excel. Hence "where there is a will, there is a way".

The budget for the construction site has to primarily break up the Project Cost into the following broad heads:-

1. **Direct Labour Cost** – Against all the project items, an organisation has to identify a variable labour cost depending on how they plan the scope of the sub-contractor for each item. Even when sub-contractors are not willing to work on measurement basis, the budget still needs to be made assuming some piece rate. This would also help benchmarking the cost of supply labour.
2. **Indirect Labour Cost** – Additionally, some labour may also be kept for housekeeping, loading/unloading, stores and hence, their cost needs to be estimated on a monthly basis.
3. **Direct Material Cost** – IS Norms and management with good engineering experience can set the standards for each unit of execution of a project item. But as discussed earlier, the closing monthly inventory needs to be physically checked to arrive at the figure of actual consumption for compliance with the budgeted consumption.
4. **Indirect Material Cost** – Total Project quantities can be freezed for safety, hardware and other materials not directly proportionate to the construction activity to keep an overall purchase cap.
5. **Equipment whether on hire or owned** – For Hired equipment, the prevailing rentals may be assumed for budgeting. However for the own equipment, the management may estimate the useful life and arrive at cost per month multiplied by an under utilisation factor of say 1.25 to 1.5 to arrive at the cost. Under utilisation factor is a cost mark up denoting that the management may not be able to utilise the equipment at all times throughout its useful life.
6. **Fuel** – As discussed, the same may be bifurcated into a fixed (for vehicle) and a variable component (for equipment). Variable component can be linked to execution of items like concrete, masonry etc.

7. **Salary and Site Overheads** – These can be fixed as a proportion to the monthly expected turnover to define the total limit which can then be suitably broken down into actual cost heads.
8. **Taxes** – It is critical to identify the manner in which VAT and Service Tax has to be paid, if the same is in the scope of the contractor.
9. **Allocation from Head office for common expenses** – Standard allocation policy may be fixed for the same and proper accounting effect is required to be given for the same on a monthly basis. Here it is most important to see that all cost from Head office stand allocated whichever mode of allocation is selected.

Once the above cost estimates are made, it is important to lay down the targets for each month in terms of engineering quantities in the following manner:-

		Month wise Targets in Project Units					
Item	**Project Qty**	**I**	**II**	**III**	**IV**	**V**	**VI**
Excavation Cum	1,000	500	400	100			
Reinforcement MT	50	5	10	15	12	10	3
Shuttering sq.ft.	250	25	50	75	60	50	15

Once month-wise targets are defined, it is then important to break up the master budget into monthly budgets for monitoring the cost on a monthly basis.

In addition, the organisation may also do a cash budgeting exercise keeping in mind the payment terms (billing cycle, mobilisation policy, retention policy) with the client. A project may need some support from the Head office at the start, but once it is running at its peak, it can then be self-sufficient in terms of the cash requirements. The HO should avoid the tendency of using the cash flows from one project to feed the other on a regular basis. One of the ways of maintaining this discipline could be by keeping separate bank accounts for each site.

Precautions for Monitoring of Budget

Following are some of the critical issues to be kept in mind when the budget is to be compared with the actual results. A good homework here can make the task of monitoring the costs based on budget a simple exercise.

a) Sub-contractor work orders – Here the item codes and language should be same as client work order so that reconciliation becomes easy. If sub-contractor rates are revised, amendment paper should be prepared for proper controls.

Example of how the item codes are required to be given:

Item Code	**As per**	**Item description**	**UOM**	**Rate ₹**
1234	Client	Providing reinforcement including cutting, bending, binding, fixing in position including the cost of channels, bars (Binding Wire is in your scope).	MT	4,500
Even if a single item is broken up, its identity can still be maintained as below :-				
1234-A	Contractor	Reinforcement Cutting	MT	700
1234-B	Contractor	Reinforcement Bending	MT	800
1234-C	Contractor	Reinforcement Fixing	MT	1,200
	Contractor	**Total Rate of item code-1234 is ----->**	**MT**	**2,700**

b) Physical stock Sheet as certified by PM of major items required on the last day of each month along with details of unbilled items.
c) Following Deadlines need to be strictly adhered to:-
   a. Client Bill Preparation – say by 5th of every month
   b. Sub-contractor Bill Preparation – say by 10th of every month
   c. Monthly Accounts Closure by all means – say by 15th of every month
d) Set standards of material consumption, preferably certified by client for major Project items.
e) Passing the taxation effect for VAT and Service Tax on a monthly basis in the books of accounts project wise with a clear understanding of amounts required to be deducted and paid from sub-contractors under Income Tax (TDS)/VAT (WCT) and Service Tax (Reverse Charge).
f) Maintain Computerised/Manual Stock Register at Site with timely entries for cross-verification.
g) Ensure that purchases are booked in accounting

system with complete break up of quantities purchased. This may take some time but serves a lot of purpose at the time of monitoring the costs.

h) Accounts department should maintain the accounting books in a manner which helps generate following :-
   a. Project Profit and Loss Account and Trial Balance. The same is required to be compared with Profit and Loss Account based on budgeted rates but with Actual quantities. Only thing to be taken care is that the budgeted fixed cost although based on project months but should take into consideration the difference between budgeted quantity and actual quantity.
   b. Difference between quantities billed to client and billed by the sub-contractor.
   c. Material cost comparison between actual & with standard budgeted quantity & value.
   d. Useful life of the own equipments and calculation of monthly depreciation charge to be debited to the project.
   e. Ensuring proper financial effect of Inter-site transfer of any of the resources say man, machine and materials.
   f. Working of allocation of common costs to all the projects.

Overcoming the Challenges Involved in Tracking Budget

S. No.	Issue Faced	Action required
1	Delay in Client Bill Preparation and Certification	a. Site should only get the funds generated by its billing. This gives a clear signal to PM to ensure timely billing. b. If client's certification takes a long time, then instead of waiting till month end, a cut-off date of say 25th can be decided for quantity certification.
2	Delay in sub-contractor bill preparation	a. Non-payment of advances to sub-contractors without receiving the regular bills. b. Common errors like not containing Item Codes same as client, not containing cumulative project quantities to be avoided.
3	Revision of sub-contractor rates number of times in short period and different rates for different sub-contractors	a. If the actual rates significantly differ from the budgeted rates, one may have to revise the budget. b. Further, total cost of executing a particular item after summation of all the sub-contractor bills needs to be compared with the budgeted cost.
4	Quantities executed by supply labour	a. As far as possible, avoid usage of supply labour. b. Supply gangs need to be divided activity wise and a single gang not to be given multiple tasks. c. Daily Supply report to contain the estimate of quantity executed by supply labour. d. Getting both supply and measurement gangs from the same sub-contractor also needs to be avoided
5	Numbers of work orders issued by client for same job	a. All the work orders need to be combined for comparison with cost as it may not be possible to maintain the costs separately for each order. b. Care needs to be taken if there are any specification changes for the same item codes in two different orders. If yes, client may be requested to issue separate item code for the same.
6	No track record for material purchased and bills pending to be raised by supplier	a. Stock Inward Register maintained at site needs to be checked with the Purchase Register in accounts once in a month.

S. No.	Issue Faced	Action required
7	Sub-contractors having taken the advance exit during the project before desired execution	a. Since the same is a cost, accounts may choose to debit the same against the project item for which the sub-contractors were appointed. b. But at each month end, all such advances need to be closed with management approval.
8	Difficulty in tracking quantities in case of finishing items due to small, various make and various sizes.	a. Materiality says that only major items need to be controlled. All small items can be clubbed together under one head for the sake of simplicity.
9	Lack of clarity over asset capitalisation policy	a. Management needs to adopt recognised accounting policies uniformly for all expenses like labour and site establishment, shuttering, scaffolding depending on the useful life of the asset.
10	Mismatch in equipment time allotted in budget for a project vis-à-vis actual utilisation	a. This needs to be documented so that it serves as learning for future projects.
11	Tracking the Employee Cost	a. Normally employee cost should be in the range of 4-8% depending on nature of project, but if the same exceeds, then proper scrutiny is required.
12	Assessment of Physical stock quantity for bulk items like Sand/ Aggregate/ Loose Cement	a. Experienced Site supervisor needs to be given the task of stock taking along with the stores and audit personnel for the same. b. This assessment is important to track any ill practices prevailing at the point of procurement/ material inward.
13	Assessment of Physical stock of Items issued at Site but with repetitive usage like shuttering/ hardware	a. Top management needs to lay down its own internal standards for different items. For e.g. a repetition policy of 6 times for wooden shuttering may mean a life of 2-3 months during peak and thus the valuation needs to be done accordingly.
14	Varying HO overhead every month and the allocation policy	a. Standard HO overheads need to be certified by top management for the purpose of site allocation every six months. b. It should also be ensured that there is no material deviation between the actual and standard on a quarterly basis. c. HO overheads should be distributed across projects based on expected site turnover as budgeted. However, to avoid the complexities, the same is normally also done on actual turnover basis.
15	WIP assessment	a. Best left to the Project Manager. However the accuracy of the same should be monitored in the subsequent months by tracking actual realisation against the WIP, to curb the tendency of Project Manager to overstate the WIP.
16	Uncertified Extra Items	a. If material, the same may be considered but needs to be overlooked if outstanding for more than 3-4 months with proper management approval

Budget Findings and Corrective Actions by Management

Once actual data comparison takes place with budget document, management can then prepare a Project Progress Card containing the various exceptional

reports as desired by the management. It should normally contain:-

a. Comparison of Budget Summary with the actual results
b. Areas where the budget rates needs to revisited
c. Material Deviation between budget costs *vis-a-vis* actual costs against each Project Item
d. Expected increase in Fixed Costs due to expected Project Delay
e. Proposed corrective actions against critical findings

The major worry that the management wishes to avoid by preparing and monitoring the budget is by avoiding cost overruns which is normally experienced on account of following common reasons :-

a. Execution with supply labour
b. Lot of equipments on rental
c. Delay in project execution
d. Lack of control over Site Fixed Costs
e. Weak monitoring of items with repetitive use such as shuttering, scaffolding leading to less than standard utilisation
f. Fraud/Pilferage by PM/Employees in conjunction with the vendors

In addition, actual comparisons with the budget makes one discover new ways to improving the operations in various ways in order to achieve the budgeted surplus:-

a. Value addition to process using local material
b. using local market rather than purchase from H.Q (limited items where year contract price is fixed and available at local market or even less.)
c. try various options of tax/indirect measures for procurement
d. alternative agency from the pool of sub-contractor agencies
e. manufacture certain item at site to avoid market domination
f. access better supplier and agreed terms for long duration supply

Hence, utmost care is required to take care of the above issues and a budget is the best document for the same. But we again wish to emphasise, that a budget would do no good if not compared on a monthly basis.

We hope, with the above, we have been able to touch upon some of the aspects of Budgeting in the construction sector, although it is undoubtedly a very vast subject where one always tends to remain in the learning process as the project size and complexities increase. ■