Ways To Improve Cash Flow

1. Introduction:

1.1 Cash flow is projecting all cash coming in and all cash that went out through the time of the project which is a given period (usually a month). This period could be in the past or a projection to the future; the past reports can help you spot trends and predict future reports. Sending invoices to customers and receiving invoices from suppliers are shown in the financial statement as cash in and cash out, and these transactions don’t reflect in the cash flow until you actually deposit payment from customer or supplier deposits yours. Simply cash flow planning is the charting of cash flow movement into the production process of a construction project then into accounts receivable; preparing a cash flow plan can help in predicting the flow of cash during the future span of time.

1.2 Cash flow forecasting is the presentation of both cash in and cash out of the project and it is required to make sure that all the funds needed throughout the project are available. You must check that all the resources needed are available before starting the project and money is the most important resource. A simple representation is shown in figure 1.1 for a cash flow analysis chart.

1.3 When making a cash flow forecast there are several things we must put into consederation. First, we must determine the value of each activity per week, hence we sum up the activities weekly and adjust the revenue for advanced payment and retention. Then we represent a cumlative revenue versus time curve. In figure1.2 an expense curve is shown representing all money spent by the contractor throughout the project and the income curve shows the money paid by the owner to the contractor.

1.4 Cash in could be affected by several factors and one of the most important factors is taking an advanced payment from the owner which helps the contractor pay for materials needed to make a workable project plan and provide the contractor with an interest-free loan in the initial phases of the contract; to sum it up the advanced payment provides the necessary financial support to the contractor. Also, you must decrease retention in order to increase cash intake. Several other factors affect cash in and will be thoroughly explained throughout the paper.
Figure 1.3

"A simple representation of an advanced payment"

2. Risk factors that impact construction cash flow:

2.1 Risk is defined as exposure to either economic loss or gain arising from involvement in the construction process. The main risk factors affecting cash flow are changes to initial design, variation to works, underestimating project complexity, delay in setting claims and delay in agreeing on day's work etc. Paying bills early can either have a good impact or a bad impact on the construction works and here the risk factor occurs. Sometimes paying after the work has been finalized and all deficiencies remedied decreases the risk taken by the contractor then he can present his application for final payment.

2.2 Retention is a prescribed percentage of each progress payment retained by the owner according to the terms of the contract. It may be one of the biggest risks to the contractor may face as he may not be able to pay for some resources through the timeline of the project and the best way to avoid any deficits is to take an advanced payment.

2.3 Paying cash for assets is best done at the very beginning of the project scope as prices of resources fluctuate as days go by. The contractor must have defined objectives and must plan well for cash going in and out of cash flow and resources must be prioritized due to budget constraints.

3. Problems that affect contractor's cash:

3.1 The first factor that affects the contractor's cash is the obligation to give wages to employees and take a loan from bank to help pay for resources like materials needed on the construction site and equipment needed (loaders, trenchers, mixers, cranes etc..) shown in figure 2.2; this case mainly happens when the contractor doesn't take an advanced payment from the owner at the beginning of the project.

3.2 Also some contractors could be obligated to work in several construction projects at the same time which may affect the amount of money invested in the current project therefore hiring a sub-contractor, in this case, would be the best solution so that the subcontractor can handle a certain aspect of the project to get the best outcome possible.

3.3 You have to make sure that you have a system for sending out invoices to avoid delays in payment by knowing when invoices are due and what documents need to be turned in with each one and you also need to get confirmation that the invoices have been received. The time interval for the invoice payment should be considered according to the following payment terms: 30 days, at 60 days and 90 days.

3.4 The payments should be made considering only the General Conditions of the Contract and there should be minimum time lag between billing and collection of receivables. Also the statement and supporting documents should be prepared by the contractor monthly or for minimum 5% from the contract price. Shown in Figure 2.3 is the difference between the receivables and billing.

4. Contract net cash flow:

4.1 It's better to buy not lease any supplies, equipment and real estate as buying is cheaper than renting on the long term basis, renting may seem counterintuitive to someone who is only paying attention to the bottom line or only looking after the expenses that are paid off. Offering your customers an incentive if they pay their bills ahead of time you can get your cash early and this helps your cash flow improve. You must maintain a friendly relationship with your suppliers then you will have a better chance of landing better deals with them; offer suppliers an early payment if they are willing to give you a discount in return. You may also experiment with pricing to find the perfect number that the project owners are willing to pay. In figure 4.1 a chart shows the effect of operations, investments and financing on cash flow.

4.2 A contractor must make sure that he takes an advanced payment from owner as shown in

Figure(9) to be able to get equipment and pay wages to employees; if payables are due before receivables come in the contractor will face cash flow problems then in return you won't be able to pay your bill on time. After the work has been finalized and all deficiencies have been remedied, the owner makes formal written acceptance of the project and the contractor presents his application for final payment. Under a lump-sum form of contract is the final price of the contract minus all the previous payment instalments made. While in a unit price contract the final total quantities of all payment items are measured and the exact final contract price is determined.

4.3 Net cash flow refers to the difference between a contractor's cash inflows and outflows in a given period. It is also known as the change in cash and cash equivalents; it is very important to note that the net cash flow isn't equal to the net income as this is a common mistake. Figure 4.4 shows a net cash flow chart of a construction project.

5. How contractors can improve cash flow?

5.1 The advanced payments occur at any time the contractor receives money before any goods or services are in place in the owner's premises. Equipment makers usually require a certain amount of deposit to fabricate equipment and they demand a certain amount of money to protect themselves from any risks. Contractors may complain that long payment terms may turn them into financers of the project which makes them face difficulties and in order to avoid this problem they may take an advanced payment from the owner. An advanced payment could be paid to the contractor either in one or more installments, upon the provision of an advanced payment bond or guarantee. The repayment of the advanced payment will be defined in the contract and may take the form of a flat percentage deduction on all payments to the contractor or a fixed payment over a certain amount of months; the best repayment method in internationally recognized construction contracts requires repayments to start once a set value of construction works has been obtained. Appling this strategy improves the contractor cash flow and prevents him from loading the prices at the beginning of the contract. By requesting an advanced payment from the owner the contractor will be able to shift the position of the income profile so no overdraft occurs.

5.2 Retentions usually involve withholding a percentage from the payments from the contractor, which are later returned back to the contractor once the defects liability period (a certain period in which the contractor is obligated to rectify any material defects) is done. The owner retains an amount of money from every invoice to ensure that the contractor will continue the work efficiently and it ranges from 5% to 10%; however the contractor will face a lot of difficulties due to money deficit. The final payment is made to the contractor including accumulated retainage.It is recommended that the contractor should try and reduce retention so that no problems occur as most contractors don't get enough profit throughout the job to cover retention. Most owners have a certain amount of retention set so they can protect themselves from dishonest contractors; that are why retention is unavoidable but decreasing it helps the contractor improve cash flow.

5.3 It is very important to the contractor to minimize his negative cash flow as this may hinder him during performing the contract due to lack of financial resources. Loading of rates, in which the contractor increases the prices of earlier items in the bill of quantity. Nonetheless this technique might represent a risk to the contractor or the owner. You may adjust to late start

timing in order to delay the payments; in this case the contractor should be aware that delay that might happen will affect the project completion time and may subject him to liquidated damage. The contractor must also reduce delays in receiving revenues and this happens by achieving maximum production in the field and increase monthly payment. Delay in paying labor wages, equipment rentals, material suppliers and subcontractors helps in increasing the markup. Adjust the timing of delivery of large material orders to be with the submittal of the monthly invoice.

5.4 The contractor must clearly document terms and conditions while signing the contract; you must state in writing delivery and payment conditions and discuss any provisions in the agreement. You must ask a lawyer to review the conditions before entering into the contract. The contractor must also create a payment reminder process so if the owner doesn't pay on time he should call and follow up with a written reminder that you are expecting payment within a reasonable time. If the customer still doesn't pay he should send a warning and eventually a formal written notice. The contractor must document each step in the project and communicate your cash flow management process to other departments; this ensures tasks and responsibilities of the staff in other departments are clear to everyone. In case of less number of payments along the contract period this will lead to increase the overdraft as shown in figure 5.5.

6. References:

1. Tarek Zayed, Yaqiong Liu, (2014) 'Cash flow modeling for construction projects', Engineering, Construction and Architectural Management, Vol. 21 Issue: 2, pp.170-189, https://doi.org/10.1108/ECAM-08-2012-0082 (Accessed May 8: 2020)
2. Dawn Killough, (2019)'Keep the lights on :solving the seven biggest cash flow problems for contractors' , https://www.levelset.com/blog/solving-the-7-biggest-cash-flow-problems-for-contractors/ (Accessed May 8: 2020)
3. Grace ,(2019) ''top 3 tips for improving cash flow as a construction contractor' 'in Best practices, https://www.procurementexpress.com/blog/top-3-tips-for-improving-cash-flow-as-a-construction-contractor/ (Accessed May 8: 2020)
4. Dan Moskowitz, (2020) '10 ways to improve cash flow' in tools for fundamental analysis, https://www.investopedia.com/articles/personal-finance/061215/10-ways-improve-cash-flow.asp (Accessed May 8: 2020)
5. (2019) ,''cash flow management in construction :issues and solutions'' , https://www.handle.com/construction-cash-flow/#Identifying_Cash_Flow_Issues(Accessed May 8: 2020)
6. VOL. 13 NO. 1(2008), pp. 5-17, Q Emerald Group Publishing Limited, ISSN 1366-4387 '' Journal of Financial Management of Property and Construction'', https://www.researchgate.net/profile/Henry_Odeyinka/publication/235265137_An_evaluation_of_risk_factors_impacting_construction_cash_flow_forecast/links/0c960528759e0e160e000000.pdf (Accessed May 8: 2020)
7. Stephen king,''5 collection strategies to improve your business cash flow now'', https://www.growthforce.com/blog/5-collections-strategies-to-improve-cash-flow(Accessed May 8: 2020)
8. Richard.E Gavin,(2011),''plan ahead and manage your cash flow better to have a successful construction business'', https://www.constructionbusinessowner.com/accounting/cash-flow-strategies-contractors (Accessed May 8: 2020)
9. Augustin Purnus, (2016), http://2016.creative-construction-

conference.com/proceedings/CCC2016_72_Purnus.pdf (Accessed May 8: 2020)
10. RICS practice standards, Cash flow forecasting ,1st edition (2011), https://www.rics.org/globalassets/rics-website/media/upholding-professional-standards/sector-standards/construction/black-book/cash-flow-forecasting-1st-edition-rics.pdf (Accessed May 8: 2020)
11. https://fac.ksu.edu.sa/sites/default/files/Topic_7_Project%20Cash%20Flow.pdf (Accessed May 8: 2020)