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Cash Flow Formula, Part 2:

How OPERATIONS Impact CA$H

BY STEVEN D. LORDS

Over the past several years, I have spent a great deal of time training my company's management, finance, and operations staffs on cash management concepts and practices. Here's what I've learned:

How business is conducted operationally has more impact on cash flow than any other factor.

Although finance efficiency and practices also affect good cash flow, the most significant impact (positive or negative) results from a company's operational business practices.

In "Cash Flow Formula, Part 1: How to Measure Cash," three basic concepts about cash management were introduced:

1) That "cash" can be defined as "spending power."

2) That it is important to accelerate receipts and decelerate payments.

3) That it is important to minimize current assets and maximize current liabilities.

This "non-accounting" definition of "cash" includes more than just money in the bank.

It recognizes that "cash" is subject to: the expansions and contractions of our economy, changes in vendor trust levels and the success or failure of vendor negotiations, changes in the extension of banking credit, and developments in technology. It also means that "cash" is affected by a company's internal business practices.

In addition to these new concepts, a formula for measuring changes in "cash" was also presented. That formula is the foundation of this article:

EBITA, or earnings

+/-	**Changes in A/R**
+/-	**Changes in Inventory**
+/-	**Changes in Net WIP**
+/-	**Changes in Fixed Assets**
+/-	**Changes in A/P**
+/-	**Changes in Accruals**
+/-	**Changes in Debt**
=	**Cash Flow**

Liabilities are shown in red. *Note:* Although WIP generally has components of both assets and liabilities, good business practice dictates that the WIP net balance be maintained as a liability, or an overbilled status.

With these basic concepts under our belts, it is now time to put theory into practice by examining how operational procedures impact cash flow.

Construction Life Cycle

To facilitate a discussion, let's follow the traditional stages in the construction life cycle:

- Pre-Bid and Bid
- Contract Award
- Pre-Construction
- Contract Performance
- Contract Closeout

In each of these stages, decisions are made, actions are taken, and business practices are implemented that will ultimately determine your company's ability to accelerate receipts and decelerate payments, as well as to minimize current assets and maximize current liabilities.

Although many of these decisions are operational, some are financial in nature. *Yet, all too often, operational managers are making both types of decisions.*

The Finance/Operations Connection

When I teach CFMA seminars, I often ask the participating CFMs about the extent of their involvement in each stage of the construction life cycle. I am always surprised by how few are actively involved with these contracting processes, other than with the related financial processes of generating billings and scheduling payments, and the scorekeeping process inherent in producing periodic financial reports.

Nor do I often hear about any significant participation in the bidding process, or in the negotiation and detailed review of contracts before they are signed. I also like to ask seminar participants if they have ever attended a project pre-construction meeting. Once again, generally less than one-third say they have.

As a group, I believe that CFMs have much to contribute to the preliminary construction processes. However, for whatever reason, we have not successfully communicated our interest and knowledge to the operations side of the house. This is a big mistake. Why?

Because throughout the construction life cycle, decisions will be made that could greatly benefit from both financial knowledge and a financial perspective.

In this article, we will relate the activities that take place during each phase of the construction life cycle to our cash flow formula and its underlying cash management principles. In addition, we will discuss how to achieve the buy-in of management and other operations staff to our new cash management approach.

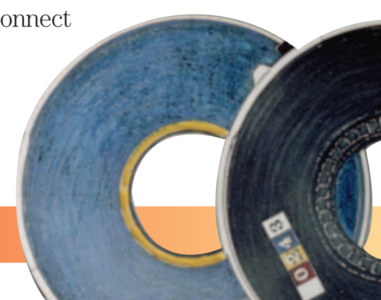
Pre-Bid & Bid

In this stage, focusing on the following three key areas can help prevent the possibility of a project negatively affecting a company's cash flow.

Credit Review

No amount of financial controls or superb project management can assure payment from an unethical or insolvent customer. Yet, many contractors seem willing to work for anyone who gives them a contract, often without checking creditworthiness or ability to pay.

This problem usually arises from a disconnect between who sells the work and who is responsible for performing on the contract – and ultimately being paid.



That's why incentives to both the sales force and project management should be tied to collection on the related contract. This will keep everyone focused on the fact that contracting is more than selling and performing; it also includes collecting on the contract.

Remember: The project won't make its calculated profit margin at completion if your company fails to collect part of the contract price.

What to Check

There should be policies and practices in place to check both the reputation and ability to pay (financing) of all new customers and all large projects; additionally, there should be periodic checks on all existing customers.

The same type of assessment should also be performed for the contractors and subcontractors with whom your company expects to work. This credit management process is most effectively handled or supervised by the finance department.

Consider the Three Cs

When assessing the creditworthiness of customers, contractors, and subcontractors, it makes sense to use the same criteria that banks and sureties use – namely, the Three Cs: character, capacity, and capital. This assessment is probably best handled as part of a joint effort between management and finance. Here are some tips for a successful assessment:

Character

The "character" of an entity is created and perpetuated by its owners and management. It is an assessment of an entity's people, rather than of the entity itself. Character includes integrity, fair and ethical business practices, and overall work ethic.

Character can be assessed by calling references who have done business with the owner, contractor, or subcontractor. However, there is no substitute for face-to-face meetings, where managers from your company get to personally know the owners and managers of the intended project partners. Remember, too, that changes in a company's ownership or management will result in a change in the company's character.

Capacity

There are two primary areas of focus here. First, verify that the customer, contractor, or subcontractor has significant experience with projects of the same type, size, and scope as the one being proposed. For contractors and subcontractors, determine that their project management staffs also have prior experience with this type of project. (Why? Because any lack of familiarity will likely result in increased costs for your company to perform on its contract.)

The second aspect to assess (specifically for contractors and subcontractors) is unused and available bonding capacity. This can be a useful measure of their ability to handle changes, as well as an indicator of how busy they are on other projects. When a $1 million job becomes a $2 million job due to change orders, it's important to know whether the contractors and/or subcontractors on the job have additional bonding capacity.

Capital

Make sure that potential customers, contractors, and subcontractors are well capitalized and that they have sufficient financial strength to support a construction project of this size, even if the project doesn't go as planned.

From owners, obtain confirmation of both interim and final financing on the project. From contractors and subcontractors, obtain recent financial statements (preferably audited) and review them closely.

Pre-Bid/Bid Stage Contract Review

The subject of contract review is an entire topic, in and of itself. But, here are a few points to consider:

The Knowledge Factor

Although this may sound obvious, and you think your company's contract review process is adequate, ask yourself this: Is finance involved in this review? Many of the terms and conditions in construction contracts relate to financial issues, such as payment due dates and methods, retainage provisions, etc.

Certainly estimators, PMs, and other managers can be educated on important financial contract provisions and taught to request beneficial terms. However, there may be other, more complicated, contractual provisions that do not lend themselves to routine coaching.

For instance, the contract may require that records or documentation be kept or provided in a very specific format or

manner that may not be compatible with your company's financial accounting systems. Non-financial people may not recognize this as a problem; nor would they be able to suggest acceptable alternatives within the capabilities of your system.

I recommend that finance review all significant contracts over a pre-determined dollar amount; in addition, finance should be consulted whenever terms or provisions relating to financial or record keeping issues are not well understood.

Legal Considerations

Seek legal counsel when choosing preferred contractual languages for a broad range of standard contract provisions, as well as for minimum acceptable alternatives when the preferred language is not obtainable. Legal counsel should also be sought whenever unusual contract terms are encountered.

The Effect of This Stage on Cash Flow

Decisions made and actions taken in the pre-bid and bid stage have the most direct impact on A/R, WIP, and A/P. Both the specified contract terms and a company's internal business practices determine whether a contract has a positive or negative cash flow.

So, when operations management and staff are educated on the relationships between business practices and cash flow – *and especially when their incentives or bonuses are tied to maintaining good cash flow* – they will be more likely to buy-in, changing poor operational practices and implementing those more conducive to good cash flow (that is, increased profits).

Contract Award

Once the contract has been awarded, an even more intensive review and negotiation of contract terms begin. Here is my philosophy about such review and negotiation:

If a company does not at least try and negotiate more favorable terms, it has chosen to be a victim and deserves whatever bad results come of this decision.

We do not have to be victims. Almost everything in life is negotiable, except death and taxes – and, sometimes there is room for negotiation on taxes!

We may not always achieve our preferred language and terms, but we should continuously try. And, we should be willing to walk away from a contract with terms that do not, at the very least, meet minimum acceptable standards.

The Major Terms

There is not room in this article to go into depth about every contract term that should be reviewed. However, here's a list the most important terms to review and negotiate:

- Timing of payment
- Method of payment
- Penalty provisions for not adhering to payment requirements
- Reporting and documentation requirements
- Allowable contract costs (for cost plus contracts)
- Negotiating around "paid when paid" and, especially, "paid if paid" clauses
- Performance penalty provisions

Remember, too, that this stage generally includes the buy-out and award of related subcontracts.

Forms

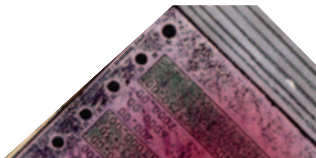
Each contractor and subcontractor should have their own contract forms, which should be reviewed by the appropriate legal counsel to ensure that adequate and proper protective provisions, indemnities, and risk sharing are in place.

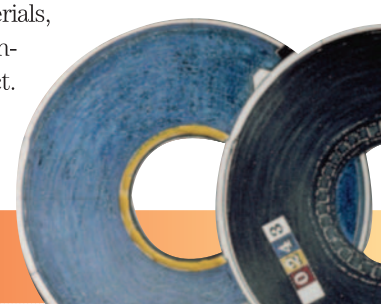
It's equally important to ensure that your company's contracts contain the provisions it would be willing to accept itself. The AIA standard documents are a start, but they may not necessarily address your company's individual circumstances, or the legal and market conditions in the state(s) where your company operates.

Pre-Construction

During this stage, the contractor and subcontractors develop the specific details and plans for how the project will be built.

Often, detailed charts and schedules are laid out to show the staging of workers, materials, equipment, and subcontractors throughout the specified duration of the project.





Unfortunately, during this stage, not enough attention is given to the planning and scheduling of the paperwork flow, which is what ultimately assures that your company is paid on time for its efforts.

Performance & Billing Schedule

Once the contract has been awarded, the bid details must be converted (generally simplified or rolled up) into a schedule of values consistent with your company's contract management and accounting systems.

From this, an estimated performance and billing schedule should be developed for submission to the owner or party with which you have contracted. The billing schedule will show, month by month, exactly how much of the total project is expected to be put in place and billed for.

This schedule should be reasonably front-end loaded. Costs for such items as mobilization, bonds and insurance, and a majority of the materials (along with your profit on these items) are incurred early on in the project; as such, they should be recognized early on in the project. This will allow your company to stay reasonably overbilled.

Establishing the performance and billing schedule before construction begins puts the owner on notice re: how much your company expects to bill each month throughout the life of the project. As long as the project stays on schedule, your company is going to bill according to the schedule it provided before beginning construction. (Unless, of course, it can justify billing more!)

Providing the schedule, and following the estimates as closely as possible, can mean fewer disputes over the amount of your company's monthly pay requests.

The Pre-Construction Meeting

Schedule and hold one or more pre-construction meetings and include appropriate representation from all subcontractors and major suppliers for the project. This meeting will provide an opportunity for all parties to meet one another, and for your company to provide an overview of the project.

In addition to discussing such operational issues as the schedule, jobsite organization, and safety requirements, this meeting also provides the best opportunity to discuss the project's reporting and documentation requirements.

Finally, make sure that your subcontractors and major suppliers know and understand what is expected in terms of contract compliance, relative to both performance and paperwork.

Performance of the Contract

This is the stage of the construction life cycle in which the contractor, subcontractors, and suppliers execute their trades and manage crews and materials to put the work in place, per the detailed plans and specifications. It also encompasses the activities that will have the most dramatic impact on cash flow, either positively or negatively.

Although this stage is composed of a number of processes and individual activities, we will focus primarily on five processes and how they affect cash flow.

Contract Performance

The overall objective, for professional as well as financial reasons, should be to satisfy the customer by building a quality project per the plans and specs, and to do it according to the terms of the contract. Generally, this means doing the job right the first time.

Stick to the estimated performance and billing schedule whenever possible, and document the circumstances and reasons for any significant departures from this schedule through change orders. All paperwork should be submitted on time, on the right forms, and completed properly. Remember: A satisfied customer is more likely to pay on time.

Contract Costing

Contract costing should be consistent within your company. The schedule of values developed during the bid stage should flow logically into the schedule of values that is used to manage the performance of the contract.

This same schedule can be provided to the owner or contractor to demonstrate your company's progress on the project. Consistency helps eliminate errors in job costing and provides valid historical cost information for use in estimating future projects.

Keep the paperwork moving, particularly between project management and finance. This requires processing

schedules that are well-planned, known, and understood by all involved. It also requires that individuals be organized and able to adhere to their schedules.

In order for project cost reports to be both timely and accurate, the information flow between project management and finance must be consistent and correct. These reports should have broad distribution among project management, including onsite superintendents and foremen.

When these jobsite professionals learn about project problems (or opportunities) on a timely basis, they are generally masters at finding solutions. However, if they don't learn about a problem until the project is almost complete, there is little they can do.

Contract Billing

Progress billings should be prepared on the proper forms (with all of the required backup documents) and submitted on time and per the contract terms. Adhering to the estimated performance and billing schedule will help avoid disputes over the amount of your company's pay requests. In addition, a "pencil draft" of the pay requests should be prepared for preliminary review and approval by the owner or contractor.

It is also important to know who must approve pay requests (often a lengthy list of individuals and/or entities). I recommend tracking a pay request from submittal through payment to discover whose hands it passes through. Meeting these people face-to-face will make it easier to resolve any issues if, and when, they arise. The overall objective should be to remove all excuses or reasons for non-approval or non-payment.

Payment Tracking

Make sure you know the individual contract terms and conditions related to the submission of pay requests, as well as payment timing and method. For each significant project, track both your company's compliance with the terms of submitting pay requests and the owner or contractor's compliance with the timing and method of payment.

If necessary, discuss departures from these terms in a proactive, cooperative manner to determine how to get the process back on track. Keeping all parties satisfied generally results in a more successful – and profitable – project for everyone.

Collection & Posting

Make it as easy as possible for the customer to pay by providing them with remittance advices, pre-addressed envelopes, payment instructions, etc. Develop a close working relationship between the project management, finance, and collections staffs so that billing and payment disputes can be resolved quickly and efficiently.

Implement a dispute management process that will quickly do the following:

- Identify owner payment disputes,
- Deliver information to those best able to resolve the dispute, and
- Forward unresolved disputes to management, when appropriate.

Contract Closeout

This final stage of the construction life cycle can be a potential hazard for cash flow as you attempt to collect your final payment and retainage held on the project. However, these collection problems usually result from one thing: customer dissatisfaction.

Your focus, then, should simply be to satisfy the customer. This includes not only managing a successful completion of the project (including all punch list items), but also ensuring that all required paperwork is submitted accurately and on time.

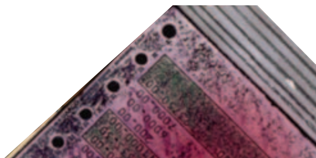
Operational Links to Cash Flow

Generally, project management and field staff understand all of these operational practices; however, these professionals are not always able to connect these practices to the effect they have on cash flow. Generally, I tell managers that adhering to these practices will mean that cash flow is moving in the right direction. However, this answer is rarely adequate. Accordingly, I have developed the following guidelines for each component of the cash flow formula:

EBITA or Earnings

This is the first component of the formula and arguably the most important, as it is the only income statement component. All of the others are balance sheet components. So, what does that mean?

Without earnings, cash management would be nothing more than



shuffling cash between the various balance sheet components. Earnings are what provide additional cash (remember that cash is defined as spending power) to the cash flow formula.

This component of the cash flow formula is the one most easily controlled by operations. The message here is to keep the focus on achieving and maintaining profitable operations.

Accounts Receivable

Since A/R is an asset, the objective is to reduce it as much as reasonably possible. However, the answer is not to bill less but, rather, to increase collections.

The easiest measurement is "days sales outstanding" or DSO. This measurement can be calculated at a project, individual, department, location, or company level. Aging of receivables, and the related DSO, should be reviewed by operations management at least monthly.

Here's a simplified method for managing A/R: Each month, collect as much (if not more) than was billed for the month. The actual figure collected will depend on whether volume is increasing or decreasing, and on whether the current status of the DSO is acceptable when compared to industry averages.

Inventory

For many contractors, inventory is not a significant item on the balance sheet; nevertheless, even small efforts can have a positive impact on cash flow.

The goal here is to maintain as low an inventory as possible, while still meeting construction needs. So, use suppliers that can provide quick delivery of materials for the best prices. Another strategy is to use vendors that will hold materials on consignment until they are needed.

Work-In-Progress (Over- or Underbillings)

Generally, this component is the second most controllable by operations. Although WIP may consist of both over- and underbillings, the net balance should be maintained in an overbilled status.

Remember that we are trying to increase liabilities. Therefore, the objective of operations should be to maintain a reasonable overbilled status. In fact, a construction company can be managed on an exceptions basis by monitoring debit WIP or underbillings.

An overbilled status can be maintained if billings keep pace with progress on the job and the schedule of values is appropriately front-end loaded. An inability to achieve and maintain an overbilled status is generally the result of cost overruns, which means that your company is going to lose money on that job.

Fixed Assets

This component of the cash flow formula is a combination of the net additions and disposals of fixed assets and the depreciation (an expense that does not represent an outlay of cash) on total fixed assets. Generally, project management has little control over this number; top management sets the guidelines for purchases and disposals of fixed assets.

Typically, this is not a significant area of focus. Management simply needs to ensure that the company does not own and maintain idle assets.

Accounts Payable

Since A/P represents a liability, the objective should be to maintain a reasonably high level of payables. This objective is mitigated by the need to maintain good credit standing, pricing, and relationships with suppliers and subcontractors.

Generally, terms and policies for the management and payment of A/P are set by top management and administered by finance. The role of operations is three-fold:

1) To understand and support A/P terms and policies,

2) To keep A/P paperwork flowing so that the accounts can be managed according to terms, and

3) To avoid promising early payment, unless doing so is absolutely necessary.

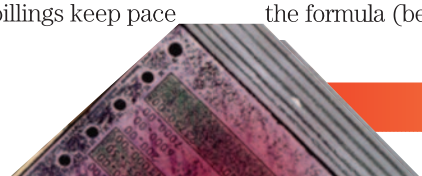
Accruals

Although accruals are a part of the cash flow formula, they are typically not significant, and generally do not represent an important opportunity for cash flow management. Since A/P includes all of the normal liabilities inherent in our business, accruals should be limited to estimates of future liabilities, such as accrued incentives, accrued taxes, etc.

The focus should be to maintain accruals at balances that reasonably represent the liabilities coming due in the future.

Debt

Once again, although debt is part of the formula (because increases and



decreases affect cash flow), it is generally not manageable by field operations. Top management and/or finance usually control the level of debt maintained by the company. The focus should simply be to manage debt in such a way that the company has adequate cash for operations.

One Last Word about Operations

In terms of the cash flow formula, the primary focus for operations is to manage the components of ***A/R**, **inventory**, **WIP**, and **A/P***. While a broad understanding of the complete formula is important for operations, management and finance are primarily responsible for managing the other components.

Conclusion

As I said at the outset, cash is the basis of our economic systems and the lifeblood of any organization. Now, with our broader definition of cash, and an understanding of how operations can affect cash flow, we are ready to move to the next (and some feel the most crucial) element of cash management.

That will be the focus of Part 3, when we take a good look at the art and science of forecasting cash. BP

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Steve is the President of CFMA's Las Vegas Chapter, and was President of both the Albuquerque and Southern Mississippi Chapters. In 2002, he received the Danny B. Parrish Outstanding Leadership Award.

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