AIA Best Practices:
Accounting basics: The balance sheet and KPI

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Summary

The basics of accounting for architecture firms are not complex. However, an understanding of certain fundamentals—by every manager at every level of a firm—is imperative for the firm to be able to manage toward profit and financially stability.

Certain industry-standard "key performance indicators" (KPIs), derived from specific elements of the balance sheet, are essential to monitoring the overall financial condition of a company. As with the income statement, basic accounting data are used to create financial information used to better manage the firm. These are the bridges from accounting to finance.

Case study

An owner started a new firm. Assume it was on Jan. 1. The new owner had a client with a good size project to immediately start. He had lined up some office space and liability insurance, and hired seven other architects, a couple of engineering consultants, an accountant and an administrative assistant. He also borrowed $200,000, repayable quarterly over four years at 6 % interest ($12,500, plus interest, per quarter), and invested $100,000 of his own.

He spent New Year's Day (owners work on holidays) furnishing the office with $100,000 of office space remodeling, desks, computers, and supplies (FF&E), prepaid some expenses, put down a deposit for rent, and the next day the new employees started the project. The start went smoothly, and before going home on Jan. 31, the owner sent out the firm's first invoice for $130,000 and recorded the first revenue for all of the firm's and its consultants' January work.

The same smooth process repeated itself in February, and the second $130,000 invoice went out on Feb. 28 for its work that month, now doubling the firm's year-to-date revenue. March followed the same way, except for one thing: On March 31, the firm received payment of its January invoice—the first time it had received any money for its work. Yet, in the meantime (since Jan. 1) salaries, payroll taxes, and employee insurance premiums had been paid, as had rent, utilities and other overhead expenses. The P&L for the first month and first quarter (and assuming that each of the next three quarters were the same, except for a lessening of interest) probably looked like this example. (Note: All numbers in this example—the P&L and balance sheet—are generally consistent with industry averages.)

	1st Month	1st Quarter	1st Year
Total Revenue	$130,000	$390,000	$1,560,000
Consultants & Other Direct Expenses	30,000	90,000	360,000
Net Revenue	**$100,000**	**$300,000**	**$1,200,000**
Direct Labor	33,333	100,000	400,000
Gross Profit	**$66,667**	**$200,000**	**$800,000**
Indirect Salaries	20,000	60,000	240,000
P/R Taxes, Employee Insurance, Etc.	13,333	40,000	160,000
Rent, Utilities, Supplies & Other OH	21,667	65,000	260,000
Depreciation	1,667	5,000	20,000
Operating Profit / (Loss)	**$10,000**	**$30,000**	**$120,000**
Interest	1,000	3,000	10,875
Accrued Bonuses	2,667	8,000	32,000
Taxable Profit / (Loss)	**$6,333**	**$19,000**	**$77,125**
Taxes (Est. 40% State & Fed)	2,533	7,600	**30,850**
Net Income / (Loss)	**$3,800**	**$11,400**	**$46,275**
Operating Profit Rate	10.0%	10.0%	10.0%
Net Multiplier	3.00	3.00	3.00
Utilization Rate	62.5%	62.5%	62.5%
OH Rate	170.0%	170.0%	170.0%
Employees	10	10	10
Net Revenue per Employee	$10,000	$30,000	$120,000

TABLE 1

Does this mean that the owner already has $3,800 in his pocket after a month, $11,400 in his pocket after a quarter? Absolutely not; in fact, far from it! The "accrual-based" P&L just reflects the $390,000 of revenue and $378,600 of expense activity since Jan. 1, not the fact that the firm has only been paid for one month's work. ("Accrual-basis" means that financial transactions are booked when they occur, not when the cash actually comes in or goes out the door – that is called "cash-basis.") So what is the firm's real financial position on March 31? This is where the balance sheet comes in.

Basic categories of the balance sheet

The **balance sheet** is a financial statement that has three parts: assets; liabilities; and stockholders equity (or net worth). It is called a balance sheet because the three categories must always balance out, as follows:

Assets = Liabilities + Equity

An example balance sheet follows as **Table 2**, but before the specifics of it can be discussed, some basic terminology is required.

Assets are what the firm owns and is owed. The primary thing it owns is *cash*; in other words, the amount of money in the bank at any given point in time. Cash keeps a firm in operation.

Next in importance is *accounts receivable (A/R)*. Remember that this firm has issued invoices each of three months, but has only received payment for January.

After that is w*ork-in-process (WIP)*. Employees may get paid by the hour, but it does not mean invoices to clients go out hourly; usually it is just once, at the end of a month. There are also some (usually) small amounts in assets that reflect things like rent deposits, and prepaid expenses (e.g., professional liability insurance is usually paid in advance, but only a month's worth of the total premium is recorded as an expense on the P&L each month).

What has just been described are generally referred to as **current assets** because they are constantly changing. (Somewhat technically, current assets are those that will be changing, by addition or elimination, *within a year's time.*)

Another type of asset subgroup is called **fixed assets**. Conversely to current assets, these have a life expectancy of over a year. Do not doubt that they require any less cash, but they are just treated differently on the P&L for reporting purposes. These include things like leasehold improvements and FF&E—long-term investment expenditures. You will not see the whole amount of major elements like these on the P&L statement when the cost is incurred. (Imagine how a $100,000 investment in a particular month would distort the P&L as a reflection of operations for that month.) Rather, the cost of such long-lasting investments are "depreciated" over what is called its "useful life." Depreciation means that a portion of the cost of each of these items is expensed through the P&L each month. (Computers, for example, may have a useful life of, say, 36 months, so only $1/36^{th}$ of their cost is reflected on the P&L each month.)

All items have different "useful lives," which is for the accountants to track, but do not doubt that the money did go out of the firm's checkbook when the items were purchased. The balance sheet is a repository for recording the whole amount that has been spent on such big ticket, long-term items (things the firm owns) and how much has been expensed (depreciated) through the P&L.

Liabilities are what a firm owes to others; they are its unpaid expenses and other debt. Here also, there are categories for both current and long-term liabilities. Using the one-year time frame again for the term, **current liabilities** include all the expense items on the P&L, except depreciation, that have not yet been paid, but will be soon. Typical items are accrued consultants (their bills to the firm are included on the firm's invoice to the client, and they usually are paid when the firm is paid), accrued salaries (including salary-related expenses such as payroll taxes and health-insurance premiums), and rent and other overhead expenses.

Of special note is that those last two items—salaries and related expenses, rents and other overhead—need to be paid when due, not just when, in this case three months later, the client pays the firm. All firms are paying salaries and overhead expenses well in advance of actually being paid themselves. This leads to a term called "working capital"—the cash that needs to be invested to keep a firm "working" until it gets paid—that will be further discussed later.

Two other items appear in the current section because they fall within the "one-year" rule, but usually are not paid monthly. This firm has a policy of adding some amount to accrued bonuses in expectation (i.e., earning

a profit and having enough cash to permit it) of paying bonuses at year end. There also are state and federal taxes to be paid, just like employees have to pay. (Note that there are both current and deferred taxes shown in Table 2, but that they net out to the amount shown in the P&L, Table 1. An explanation of the two is beyond the scope of this paper.)

Long-term liabilities include items like long-term bank loans and other debt borrowings the firm has made and still owes. Most firms need to borrow to start a firm, but depending on the individual firm's fiscal policies and financial plans, may choose to pay it off, and, therefore, it does not appear on all firms' balance sheets.

Stockholders' equity (often called **net worth**) is what is left after subtracting total liabilities from total assets. It includes the capital that owners have invested over the life of the firm and reflects the book value of the firm today should all the A/R be collected, other assets liquidated, and all bills, loans and other debts paid off.

Finally, after all that theory, let's look at the firm's P&L in Table 1 and try connecting it to the firm's balance sheet in **Table 2**. Here is a quick look at what the balance sheet already could look like as of Jan. 1, when the firm opened, on Jan. 31 at the end of the first month, and on March 31 at the end of the first quarter. (Assuming that each of the next three quarters was the same, the firm's year-end balance sheet is included, too.)

Assets	01-Jan	31-Jan	Mar 31 12 pm	Mar 31 5 pm	Dec 31 12 pm	Dec 31 5 pm
Cash	$188,333	$100,000	$135,000	$7,833	$142,625	$35,458
Accounts Receivable	0	130,000	130,000	260,000	130,000	260,000
Work in Process	0	0	130,000	0	130,000	0
Deposits & Prepaid Exp	11,667	11,667	11,667	11,667	11,667	11,667
Current Assets	**$200,000**	**$240,667**	**$406,667**	**$279,500**	**$466,292**	**$307,125**
FF&E & Leasehold Impr	100,000	100,000	100,000	100,000	100,000	100,000
Accumulated Depreciation	0	(1,667)	(5,000)	(5,000)	(20,000)	(20,000)
Fixed Assets	**$100,000**	**$98,333**	**$95,000**	**$95,000**	**$80,000**	**$80,000**
Total Assets	**$300,000**	**$339,000**	**$501,667**	**$374,500**	**$546,292**	**$387,125**
Liabilities						
Accrued Consultants	0	30,000	90,000	60,000	90,000	60,000
Accrued Salaries, Etc.	0	0	66,667	0	66,667	0
Rent, Other OH, Etc.	0	1,000	18,000	0	18,000	0
Accrued Bonuses	0	2,667	8,000	8,000	32,000	0
Current Liabilities	**$0**	**$32,667**	**$182,667**	**$68,000**	**$206,667**	**$60,000**
Current Taxes	0	(41,067)	(28,000)	(73,867)	4,850	(53,817)
Deferred Taxes	0	43,600	35,600	81,467	26,000	84,667
Net Taxes	**$0**	**$2,533**	**$7,600**	**$7,600**	**$30,850**	**$30,850**
Long-Term Liabilities						
Long-Term Debt	200,000	200,000	200,000	187,500	162,500	150,000
Total Long-Term Liabilities	**$200,000**	**$200,000**	**$200,000**	**$187,500**	**$162,500**	**$150,000**
Total Liabilities	**$200,000**	**$235,200**	**$390,267**	**$263,100**	**$400,017**	**$240,850**
Equity						
Owners' Investment	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000
Retained Earnings	0	0	0	0	0	0
Current Earnings	0	3,800	11,400	11,400	46,275	46,275
Total Equity	**$100,000**	**$103,800**	**$111,400**	**$111,400**	**$146,275**	**$146,275**
Total Liabilities & Equity	**$300,000**	**$339,000**	**$501,667**	**$374,500**	**$546,292**	**$387,125**
Balance check	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
Working Capital	$200,000	$208,267	$224,000	$211,500	$259,625	$247,125
Working Capital per Employee	$20,000	$20,827	$22,400	$21,150	$25,963	$24,713
Total Equity per Employee	$10,000	$10,380	$11,140	$11,140	$14,628	$14,628

Further, for March 31 (and for Dec. 31), the balance sheet is shown twice: first before depositing the $130,000 check each month (noon). Here you can see the firm having a lot of cash, but it also shows all the liabilities it has.

The balance sheet is again shown at the end of the day (5 p.m.) after paying the month's salaries and other bills, and making the required loan payment, but also after sending out the March invoice.

Yes, the owner of this firm, which is just three months old, has invested $100,000 and borrowed $200,000 ($300,000 of invested capital) just to get to the date of getting paid for the firm's first invoice. And, yes, there is a (great) feeling of relief receiving that $130,000 check. Overall, the owner already has total assets of almost $374,500, but also has total liabilities of about $263,100. Where is all this money, and why are the numbers often different from the more or less simple looking P&L?

As of March 31, before the $130,000 check was deposited, only $5,000 of cash was left from the $188,333 of cash the firm had on Jan. 1. The $183,333 had been used through January, February and March to pay salaries and related payroll expenses, rent and other operating expenses just to keep the firm's doors open until that first check for January's work was received.

When the check is deposited on March 31, the firm then has $135,000 of cash. The firm also still has $130,000 of accounts receivable (A/R) for its February invoice (that will hopefully be paid on time for the April 30 salaries and overhead bills), and $130,000 of work-in-process from its March work that will be billed by close-of-business.

(A/R are and always will be one of the most frequently discussed items in any firm. As seen here, even though the firm has work to keep everyone busy, it has taken three months from the date it opened and work on the project started before the first client money came into the office. All expenses paid to date, including three months of salaries, rent, phones, and supplies, have come from money invested or borrowed by the owner. This shows how any A/R that are late put additional financial strain on the firm.)

Since it is March 31, it is also payday for this firm, and $66,667 of salaries, payroll taxes, insurance premiums, etc., has been accrued, and also must go right back out the door today. The firm also has accrued $18,000 for rent, other overhead bills, and loan interest that are due. As the amount received was also for 1/3 of their work completed, 1/3, or $30,000 of the accrued consultants' to-date fees of $90,000 needs to be paid. That means that $114,667 of the $130,000 is gone the same day it came in. Finally, a $12,500 payment, plus interest, on the loan is due. Depositing the check and paying all these bills is the difference between the balance sheets at 12 pm and at 5 pm. All that remains is about $2,833, leaving a total of about $7,833 in cash for paying firm expenses between now and when the next client payment of $130,000 is received at the end of April.

The firm has also accrued $8,000 toward bonuses for distribution later in the year. Similarly, it has accrued $7,600 for federal and state taxes. (Note that there is both a current tax liability and a deferred tax liability. At this point, these seem to be strange numbers—and they are, as will be explained later. For now, suffice it to say that most firms are allowed to pay taxes on a cash-accounting basis instead of on an accrual-accounting basis. But note that the two numbers net to the $7,600 tax amount on the March P&L.)

Since this is the first year of the firm, there are no retained earnings yet. Retained earnings are the amount of net income left in the firm from previous years' profits to, among other things, save to finance future growth,

cover costs during a slowdown, or pay off the borrowed money—or it may stay in the firm because there simply is not enough cash to write a check to the owner without stretching the firm's operating cash balance to below a safe margin. At the end of this first year, the owner will not take home the net income, or current earnings, because there is not even that much cash available; it is still in the A/R of the firm.

Key performance indicators

The balance sheet may look like just a bunch of numbers, but there are important relationships among them, referred to as "key performance indicators" (KPIs), derived from specific elements of the balance sheet, that are industry-standard, and essential to monitoring the overall financial condition of the firm.

In other words, as with the P&L, basic accounting data are used to create financial information used to better understand and manage the firm. These are the bridges from accounting to finance. Among the most important and most monitored are:

- days accounts receivable
- working capital
- working capital per employee
- working capital ratio
- fixed assets per employee
- total liabilities to equity

Days accounts receivable

A/R are a constant discussion item within any firm. Days A/R quantifies the average length of time it takes to collect money from a client once an invoice has been issued. It is defined as:

A/R / Most Recent 12-Months' Revenue x 365

In our example, at year end, Days A/R is:

$260,000 / $1,560,000 x 365 = 61 days

This is a reasonable number. Most A/R reports break out A/R into aged categories, particularly <30 days, 31-60 days, 61-90 days, 90-120 days, and >120 days. The older the receivable the more attention is warranted, as it may indicate an unhappy, or financially struggling client. Remember, A/R is not cash, and only cash can actually pay salaries and other operation expenses. That is why "cash is king" is a popular expression.

(FYI, when examining a firm's A/R, for credit purposes, a bank or valuation firm may discount –or not even consider –receivables greater than 120 days, and sometimes even 90 days.)

Working capital

Working capital is the amount of invested capital being used just to support day-to-day operations – paying for salaries, rents, and other overhead expenses – between the time work is being done, then invoiced, and the time payments are received from clients. Working capital is defined as:

Current Assets – Current Liabilities

In this example, Working Capital is:

$279,500 – $68,000 = $211,500

as of March 31st, and

$307,125 –$60,000 = $247,125

at year end

This is the bulk of the $300,000 the owners borrowed and invested just to get the firm started.

Working capital per employee

In this example, working capital per employee at year end is:

$247,125 / 10 = $24,713

This is actually a bit below industry average, but may be because the firm is still in start-up mode, having collected money in only 10 of the year's 12 months.

Working capital of less than these amounts may indicate that the firm is undercapitalized, and, in stressful times, may indicate that it could become short of cash, and/or may be overextending its bank line of credit or over-relying on loans.

Working Capital Ratio

The working capital ratio is defined as:

Current Assets / Current Liabilities

It is again another measure of a firm's liquidity, and an indicator of its ability to pay its day-to-day obligations on an ongoing basis. Ratios above 2.0 are generally average for the industry. However, actual working capital or working capital per employee may be better indicators of financial liquidity because the working capital ratio still can mask actual cash shortages.

Fixed assets per employee

Similarly, f*ixed assets per employee* is about $8,000 to $12,000. What is this for? Each employee requires space, a desk, a computer and related software, at a minimum. Further, these w*orking capital per employee* and f*ixed assets per employee* amounts are indicative of the additional capital an owner must invest each time the firm hires an additional person. However, note that the f*ixed assets per employee* amount may not go down if an employee is laid off because fixed assets are a long-term investment.

Total liabilities to equity

This is a measure of leverage between the amount of money borrowed to finance the firm, and for which the owner(s) is usually personally liable and owner(s)' equity. In this example, the ratio is:

$263,100 / $111,400 = 2.36

after the first quarter, and is even lower at:

$240,850 / $146,275 = 1.65

by year end. This may be acceptable for a start-up firm, but most firms will try to keep this ratio below 1.0.

Pre-tax return on invested capital

This KPI measures the potential return of an investment of any type in a firm. In this firm's first year, its return was:

$77,125 / $296,275 = 26 %

which is rather high, especially a start-up firm. However, it must be recognized that the return must remain in the firm, at least this year; the firm does not have the cash (only $35,458 at year end) to pay out as its money is still primarily in A/R ($260,000).

Summary

While most firm managers do pay attention to the P&L each month, the balance sheet also must be regularly monitored, not just for A/R, but also for the long-term health and creditworthiness of the firm. If anything, the balance sheet shows the extent to which owners and shareholders have financial risk, sometimes far in excess of what appears on a P&L in a down year.

Industry averages demonstrate that an architecture firm can produce a respectable pretax return on investment, but it is a long-term return both because of the normal ups and downs of the market and especially because of the long A/R cycles to which the A/E and professional services businesses are normally prone.

About the contributor

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This article corresponds to:

Architect's Handbook of Professional Practice, 15th edition Unit 1 - The Profession
Chapter 07 – Financial Management
Section 02 – Financial Management Overview