



the entrepreneur's guide series



The Entrepreneur's Guide to Financial Statements

David T. Worrell

Dear Reader:

Thank you for downloading this free chapter of the book, ***The Entrepreneur's Guide to Financial Statements***.

As you'll see in the following Table of Contents, this chapter comes well after the basic discussion of how to create – and manipulate – the standard financial statements. If you're not comfortable with those topics, chapters 1-10 will teach you all you need to know.

But the book is also about a LOT more. In fact, I wanted to call it, ***The Entrepreneur's Guide to Everything You Ever Wanted to Know About Managing Your Business By the Numbers***. But the publisher said that title would be larger than the cover

In any event, Chapter 12 represents a pretty advanced topic: How to use financial analysis to guide your most important business decisions. It may take you a while to digest the art of financial analysis – but that shouldn't prevent you from starting.

Like all the lessons in this book, the most important thing is to make sure that you end up with something that is meaningful, impactful and relevant to your business.... And then USE it regularly and religiously.

I hope you'll invest 20 minutes into reading this important chapter and deciding what kind of analysis will help you grow your company.

....Then go out and read the other 13 chapters!!

Dedicated to your success,

David Worrell

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Analysis into Action

It is one thing to read a book about financial statements and ratios; it is something quite different to apply those ratios in a way that gives us meaningful data and actionable information about our business. In this chapter we'll meet entrepreneurs who used a combination of financial statements and ratios to identify weaknesses in their business and to solve specific problems. These stories are based on real situations faced by real entrepreneurs, and while the solutions are specific to their situation, the methods they used can be applied to numerous situations.

Before any analysis can be useful, of course, we must have a very deep understanding of the business and our desired business model. It does not make sense to calculate ratios and draw conclusions without a clear understanding of where the business is and where we wish to take it. The solutions worked out by the entrepreneurs in this chapter fit their particular vision for the company they wanted to build. We might use the same ratios and analysis to reach very different solutions based on our own vision for our future business.

Ratios can be used to compare strategic alternatives (which business model will return a better profit per employee?), or to fine-tune tactical decisions. Ratios are not, however, a substitute for strategic planning, market research or innovation. By their nature, ratios describe what is and what has been, far more than they predict what will be in the future. To be useful, ratios and analysis must be guided by our own vision of what *should* be!

With the following stories as an introduction to the power of ratios to diagnose and fix problems in small business, we hope to spark ideas about how ratios can be used in our own businesses.

STORY #1: FINDING NEW OPPORTUNITIES FOR PROFIT

Carey is an accomplished teacher and administrator, so it was no surprise when she opened her own preschool. Within about a year Carey was able to fill the school with wonderful children from the surrounding neighborhoods. Now, however, the school is at its legal maximum number of students and the building is full. Unfortunately, Carey's P&L is showing a troubling pattern of losses. Since she can't add more students in the current building, Carey decided to look at her pricing. She needs to know what price she should charge students per week in order to turn a profit.

Carey's first effort was to use the Breakeven Gross Margin ratio to calculate the minimum gross margin needed.

$$\text{Breakeven Gross Margin} = \frac{\text{Total Expenses}}{\text{Total Net Sales}} \times 100\%$$

Let's look at an example calculation. Here's the key numbers from the weekly financial statements of The Preschool Company.

- ◆ Price per student per week: \$97.50
- ◆ Weekly Net Sales (80 students x \$97.50) = \$7,800
- ◆ Total Weekly Fixed Expenses = \$5,500

Carey has fixed or "overhead" expenses every week that are about \$5,500. And with 80 children paying \$97.50 per week for

classes, Carey's net sales are \$7,800. In this case, the breakeven gross margin for the preschool looks like this:

$$\text{Breakeven Gross Margin} = \frac{\$5,500}{\$7,800} \times 100\% = 70.5\%$$

Notice that the result tells us Gross Margin. From our work with our P&L, we already know that Gross Margin is a percentage:

$$\text{Gross Margin} = \frac{\text{Gross Profit Dollars}}{\text{Total Net Sales}} \times 100\%$$

So let's restate the ratio in simpler language. We know that Gross Margin should at least cover the Total Expenses – that's what "break even" means in this case. Since breakeven is 70.5%, we can also say that Gross Profit should be at least 70.5% of total sales. (Remember, Gross Profit is Total Sales less Cost of Sales.)

Since we know that we want Gross Profit (Margin) to be 70.5%, and we know that Total Net Sales is always 100%, we can quickly see that the Cost of Sales must be 29.5%.

$$\begin{aligned} 70.5\% &= 100\% - \text{Cost of Sales} \\ \therefore \text{Cost of Sales} &= 100\% - 70.5\% = 29.5\% \end{aligned}$$

Now we see that our Cost of Sales has to be 29.5% of Net Sales in order to break even ... and it must be less than 29.5% of Net Sales if we want to make a profit. In this case, the preschool can spend just \$28.76 on each student each week.

$$29.5\% \times \$97.50 = \$28.76$$

Remember, this tells us what our Gross Margin *should be*. In order to reach the breakeven (or better), we must adjust our *actual* gross margin. That means changing either the price we sell at or the cost we put into each sale.

If this calculation shows that Carey's gross margin is not high enough, what can she do? Plenty. It could be that her particular building is not large enough to house a profitable preschool, or that the market price for preschool care is too low. It could also be that her teachers' wages are too high or she's spending too much on lunch. This one ratio has exposed a host of options for Carey to improve profitability.

STORY #2: DECIDING WHICH CUSTOMERS TO KEEP - AND WHICH TO FIRE

Over the last 20 years, Sandy has built up a nice business managing large events. As often happens, success breeds success. Each job Sandy completed lead to another larger job and within the last few years Sandy's average job size has grown quite large. To handle the extra work load, Sandy began hiring more and more people. One aspect of his services includes hiring temporary workers to provide security, vending, ticketing, clean up, and other duties. Lately, the number of part time workers needed has grown so large that Sandy has had to add a significant number of *full time* staff just to handle the burden of hiring and managing part time workers!

Adding more full time staff has really changed Sandy's business, and Sandy's role within the business. The more staff he adds, the less time Sandy spends doing the kind of work he really enjoys – designing and managing events.

Sitting with his financial statements, Sandy decided to do some quick calculations. He wondered if all these extra employees were making the company more efficient or less

efficient. His first calculation was the Employee Efficiency Ratio, or simply sales per employee:

$$\text{Employee Efficiency Ratio} = \frac{\text{Total Sales}}{\text{Number of Employees}}$$

For accuracy, Sandy used monthly financial statements, and calculated the number of full time equivalent staff members in the office each month. To keep it simple, he ignored all the part time event staff and looked only at the permanent employees. He ran this ratio for a number of months, during the period that he was adding full time staff, and was happy to see that the ratio continued to increase. He wrote down his results as follows:

- ◆ January: \$65,400 sales / FTE
- ◆ March: \$69,300 sales / FTE
- ◆ June: \$78,800 sales / FTE
- ◆ August: \$122,000 sales / FTE

Great news! Sandy's sales per employee had almost doubled in just eight months, even while he was adding employees! The extra staff clearly allowed him to take larger and larger jobs, generating larger and larger sales. Not only were the jobs larger than before, but the size of the jobs (measured in dollars of sales) was growing faster than the size of his staff (measured in number of FTE employees). With this key piece of information, Sandy began to think that he should continue to add staff and take on bigger jobs.

Before he signed up for more work, however, he ran one more ratio: Profit per Employee. To be sure he was comparing apples to apples, Sandy used the same number of FTE employees and the same monthly results as last time. The equation is this:

$$\textit{Profit Per Employee} = \frac{\textit{Net Profits}}{\textit{Number of Employees}}$$

This time, the results surprised Sandy. His P&L clearly showed that both sales and profits had been increasing over the course of the year. Yet this ratio produced the following results:

- ◆ January: \$4,300 profit / FTE
- ◆ March: \$4,200 profit / FTE
- ◆ June: \$3,800 profit / FTE
- ◆ August: \$3,700 profit / FTE

According to these results, Sandy's net profit per employee was falling! Sandy realized that this meant his headcount was growing faster than profits could keep up. If he continued to add staff without thinking about profitability, he might eventually over-spend on staffing and not have any profits at all!

This started to make more and more sense as Sandy considered his business model. The recent hires had been quite expensive. Larger events required more sophisticated managers, so he had brought on people with advanced project management certifications and graphic design skills as well as executives in human resources, information technology and accounting. The complexity of his business had exploded – and along with it the salaries of his office staff. This additional overhead expense was beginning to deteriorate profitability in a big way.

Sandy wanted more information. He wasn't going to just fire all these new staff people because one ratio said profits were slipping. He decided to look at the kinds of jobs he was running. This time he ignored his office staff and looked only at the events themselves – how many part time people did he have to hire to get the job done? How profitable was each job *per person*?

He ran the same ratios again for each job. Sandy had only the basic financial results of each job: the total price of the job and the gross profits (what was left after all the job-related expenses were paid). Although his ratios called for slightly different numbers, he recognized that for just one job, *price* is the same as sales, and gross profit can substitute as a measure of profits. Moreover, the number of temporary employees needed for each job was a nice way to measure the size of the job. So, pen in hand, Sandy modified the ratios to look like this:

$$\text{Employee Efficiency Ratio} = \frac{\text{Job Price}}{\text{Number of Temp Workers}}$$

And...

$$\text{Profit Per Employee} = \frac{\text{Job Gross Profit}}{\text{Number of Temp Workers}}$$

When he ran these ratios for each job, he found that the biggest jobs were the least efficient and the least profitable, when measured per employee. His notes looked like this:

EFFICIENCY:

- ◆ Smallest Job = \$65,400 / Temp Worker
- ◆ Medium Job = \$40,300 / Temp Worker
- ◆ Biggest Job = \$15,600 / Temp Worker

PROFIT:

- ◆ Smallest Job = \$400 / Temp Worker
- ◆ Medium Job = \$300 / Temp Worker
- ◆ Biggest Job = \$250 / Temp Worker

There it was, in black and white. The largest jobs required Sandy to hire hundreds of temporary workers, but generated far

less in both sales and profit *per person*. Even though the large jobs made it seem as if the company was growing, it was also growing less efficient!

Sandy knew that many of his new office employees were hired to manage the part time workers on these large jobs. The HR team was constantly recruiting low wage workers. The IT team struggled to keep each worker connected with an iPhone and a scheduling app. The payroll alone for one large event required the work of three full time staff just to collect tax forms, proof of citizenship, and time sheets. Keeping up with the large teams of temp workers was going to be a constant drain on Sandy's office staff and might require more and more full time employees.

Like many entrepreneurs, Sandy started his business to make his own life more fulfilling and more fun. Managing a giant staff, pushing paper around, and worrying about profits were not the reasons he started The Event Company.

With that insight, Sandy decided that "enough is enough". He began turning down the biggest jobs, even when they seemed like a good fit. Over the next few months, Sandy trimmed the staff a bit where needed, and found that he had more time to do the work he enjoyed. As a result, both sales and profits fell back a bit... but the company was far more efficient. In the end, as Sandy focused on efficiency he began to see profits rise to new levels while he also enjoyed more time off and more satisfaction with the company he had built.

STORY #3: COMPENSATING SALES PEOPLE USING CUSTOMER LIFETIME VALUE AND AVERAGE GROSS MARGIN PER ORDER

We met Chris early in this book. She owns a fast-growing Canine Services Studio where she trains and grooms dogs. Her advanced methods have produced highly specialized working

dogs for dozens of people with various disabilities. But her bread and butter services are for those people who are passionate about taking their dogs to dog shows and other competitive events. She has over 1,000 customers who show their dogs at various events and come to her for expert grooming and training.

Chris would like to incent her employees with a sales commission for bringing in new accounts. She decided to look at the Average Order Size in order to see how much commission she could pay. She prepared a P&L for the prior 12 months and plugged the numbers into the formula:

$$\text{Average Order Size} = \frac{\text{Total Sales}}{\text{Number of Orders}}$$

When she was done, she found that the average order was just \$47.50. That wasn't very much money to split with the employee who made the sale – a ten or twenty dollar sales commission did not seem like enough to get people excited.

$$\text{Average Order Size} = \frac{\$774,250 \text{ in Sales}}{16,300 \text{ Orders}} = \$47.50$$

To make things worse, Chris knew that her young business had a pretty low Gross Profit per Order – just \$12. She confirmed this by using her common-sized P&L to calculate the average gross profit on an order:

$$\text{Gross Profit per Order} = \$47.50 \times 25.2\% = \$12$$

Even if she paid her employees 100% of the gross profits, she could only afford to pay \$12. She needed a new way to look at things.

Chris decided to look at the lifetime value of a customer instead of just the value of a single order. She knew that most of her customers continued to come back month after month – it can take many months of practice to teach a dog to compete at the highest levels, and of course nothing can stop a dog's hair from growing, so grooming customers were particularly loyal. In fact, some of her clients had been coming to see her every month since she started the business 4 years ago.

With that in mind, Chris decided to run a Lifetime Value of a Customer (LVC) calculation.

$$LVC = Customer Lifetime \times Average Customer Sales$$

Looking over her list of customers, she found that most had been with her for 2 years. There were some new customers of course, and there were unfortunate cases when a long-time customer had moved away or their pet had died. Overall, however, she could clearly identify when most customers started working with her and how long they stayed, on average.

Next, all she needed was the average customer sales. Looking back at the P&L she created, she saw that her sales (\$774,250) came from 1,450 active customers. Quick math told her that her average customer was spending \$534 per year on her services.

$$Avg. Sales per Customer = \frac{\$774,250 \text{ sales}}{1,450 \text{ customers}} = \$534$$

Chris was starting to see the bigger picture, and it changed her whole outlook on paying sales commissions.

She looked at what she knew:

- The average customer spends \$534 per year
- The average customer stays for 2 years
- Gross Margin is 25.2%

With these calculations in hand Chris now knew the Lifetime Value of a Customer (LVC) and the Lifetime Gross Profit of a Customer (LGP).

$$\textit{Lifetime Value of Customer} = \frac{\$534}{\textit{year}} \times 2 \textit{ years} = \$1068$$

$$\textit{Lifetime Gross Profit} = \$1068 \textit{ LVC} \times 25.2\% \textit{ GM} = \$269$$

Now it was clear. Although the first sale only generated \$12 in gross profit, the real value of bringing in a new customer was \$269 (over 2 years). Chris decided to offer her people a “\$50 bounty” on any new account that they brought in. To make it even more fun, any employee who brought in 5 new accounts would receive an additional \$250 gift card, making the total reward \$500.

Under this new plan, Chris was paying \$500 for 5 new customers... but those same customers would contribute approximately \$1068 gross profit *each*. Chris was confident that every \$500 investment in sales commissions would result (on average) in more than \$5,340 gross profit to the business. That’s a 10-to-1 return on her money! Her employees thought it was a great incentive, and the harder they worked to bring in new accounts, the more the business – and the profits – grew!

STORY #4: PRICING FOR PROFIT

We met Pat, who owns a landscaping business, in Chapter 4. Although many landscapers work alone or in small crews, Pat has quickly grown to a \$5 million business with 10 crews in the field working every month of the year. Pat’s ultimate vision is to

double in size. To get there, Pat's crews are installing custom patios, masonry and swimming pools, along with beautiful lawns, gardens and other residential landscaping services. The problem Pat has encountered is pricing: he knows that he must include some charges for overhead costs in his bids, but he's not sure how (or how much).

As Pat's landscaping business grows, the problem of pricing only gets worse: the larger the company gets, the more overhead it takes on. Pat already supports an office and office manager, bookkeepers, designers and crew managers plus a fleet of vehicles, insurance and all the normal costs associated with running a company. This left Pat with a number of questions:

- ◆ How much should I markup materials?
- ◆ Should I use more subcontractors or fewer?
- ◆ How much should I markup subcontractors?
- ◆ How do I recover the cost of cars, trucks and other equipment?

After considering all these questions, Pat tried working out a spreadsheet that would help him bid each job. The spreadsheet captured a large number of operational variables, including: how many trip the crews would make to a job site, the gasoline expense to get there, the amount of materials used, delivery charges, and even the cost of hauling off waste. The resulting spreadsheet was accurate, but large and complicated.

Pat took a different approach. Instead of worrying about materials, waste, subcontractors or even gasoline, Pat took a big-picture approach to the problem. His chief goal was to keep his crews busy and the company profitable. Allowing for a few rain days, Pat knew that with 10 crews of 3 landscapers, he had about 3,000 man-hours per month of available labor to sell.

$$\begin{aligned} \textit{Total Hours} &= 30 \textit{ people} \times 100 \textit{ hours per month} \\ &= 3000 \textit{ hours} \end{aligned}$$

During those 3,000 hours the business would have to generate enough money to pay the labor their salaries plus all of the overhead. Pat quickly calculated the average hourly price he'd have to charge to recover all his overhead.

$$\text{Min. Hourly Rate} = \frac{(\text{Monthly Labor Cost} + \text{Fixed Costs})}{3,000 \text{ hours per month}}$$

Using this ratio, Pat quickly discovered that the price per hour he would have to charge his customers was \$97 – almost twice the market rate of \$50! Clearly he could not keep everyone busy if he could not price the jobs competitively. (Further, if Pat was not able to sell all 3,000 hours, then the price per hour would actually increase to make up for the loss!)

Fortunately, most landscaping jobs called for a mixture of labor and materials, which gave Pat a new way to make money: markup on materials. Any dollars that labor could not make would have to come from markup on materials. This meant that some jobs that did not have enough materials might not be a good fit – Pat's bid would still come out too high to get the job unless he could spread the profit he needed across a large order for materials.

The formulas Pat put together looked something like this:

$$\begin{aligned} \text{Unrecovered Cost} \\ &= (\text{Min Hourly Rate} - \text{Bid Rate}) \times \text{Hours} \end{aligned}$$

$$\text{Markup} = \frac{\text{Unrecovered Costs}}{\text{Material Costs}}$$

For a 100 hour job that Pat could bid \$60/hour, for example, he would have unrecovered costs of \$3,700.

$$\text{Unrecovered Cost} = (\$97 - \$60) \times 100 \text{ hours} = \$3,700$$

In this case, the markup on materials would have to make up the difference. If the job called for only \$10,000 of materials, the markup would be 37%.

$$\text{Markup} = \frac{\$3,700 \text{ Unrecovered Costs}}{\$10,000 \text{ Material Costs}} = 37\%$$

Knowing the markup made it easy for Pat to put together estimates and invoices for customers. Each brick or yard of cement or roll of sod would show up on the invoice at the full value – Pat’s price plus 37%.

Finally, when Pat rolled this information together with the more complex spreadsheet, three things happened:

- ◆ The calculations became simpler because overhead like vehicles, equipment, interest, and office expenses were all included in the single number -- \$97 per hour.
- ◆ Pat could focus on recapturing other unusual expenses, like the cost to rent unusual equipment or special delivery charges
- ◆ Every job became profitable, and so did the company as a whole. Since overhead was covered by each job, there was enough money to pay all the bills.

The technique Pat used is sometimes called absorption costing, because it spreads all the fixed expenses over the total earning potential of the company. Said another way, the total costs to run the business are “absorbed” into the total potential sales. This is an excellent way to be sure that the business as a whole can be profitable.

Tip: Absorption costing is related to the concept of breakeven gross margin, which we calculated in Chapter 11. Absorption costing turns gross margin on its head: calculating what total price (and therefore margin) we must sell at in order to cover expenses (which is the definition of breakeven).

In this chapter we've met several entrepreneurs who have used financial and operating ratios in various ways to solve real problems. Now let's turn our attention to people outside the business – investors and bankers – and see how they might use these tools to answer their own unique set of questions.

SUMMARY

- ◆ Financial ratios can be used to solve real-world problems and answer important business questions
- ◆ Financial ratio analysis can lead to better strategic decisions, but ratios by themselves do not create strategy – they merely help an owner or manager measure results and identify strengths and weaknesses of various business systems.
- ◆ Calculating a single financial ratio is often not enough: complex business problems often require using the results of one ratio to feed the inputs of another.
- ◆ Ratios can expose problems and measure the impact of decisions. Tracking results over time is an important way to know whether business management decisions are helping or hindering the business.