



THE INCOME STATEMENT

All truths are easy once you understand they are discovered; the point is to discover them.

Galileo Galilei (1564-1642)

Our objective of this series of newsletters is to help non-financial people to better and more quickly understand financial statements. We also hope that our work will help folks from the finance or investment world better understand the viewpoints of people actually running enterprises. We'll define some of the jargon that is thrown around and give actual examples from public companies.

We will start the series with the income statement.

THE BASICS

The Profit and Loss, P&L, or income statement is pretty straightforward to understand. Ironically, this still leads to some pretty stupid mistakes being made with confidence by executives. We'll provide some examples of this behavior to demonstrate our point.

The income statement also has the most slang expressions of financial statements. To help here, we'll define many terms that are casually thrown around so that you can feel a part of the "in" crowd when talking about such hot topics as "flow-through" or "below the line costs".

Let's just start with a simple income statement. The income statement describes the revenue and expense flows in and out of the company for a given period of time, typically a month, a quarter, or a year.

The first line is the revenue of the company; it shows how much revenue was generated by the sales of products or services.

Slang: "Top Line". The top-line of the company is simply the revenue. Example: "The Company showed weak top line performance"

The second line is the costs that were incurred to produce the products and services sold to generate the revenue of the company. It is formally called "cost of goods sold", and is known by the acronym "COGS".

Now, we can figure out the first measure of profitability of a corporation, the Gross Profit Margin, GPM, of the company. It is simply the Revenue of the company minus the cost of goods sold. And in the finance slang...it is the top line less COGS.

The ratio of Gross Profit divided by Revenue is called Gross Margin Percent. In practice, people sometimes use the term Gross Margin interchangeably with Gross Profit, i.e., "The company had \$13M in gross margin in the quarter".

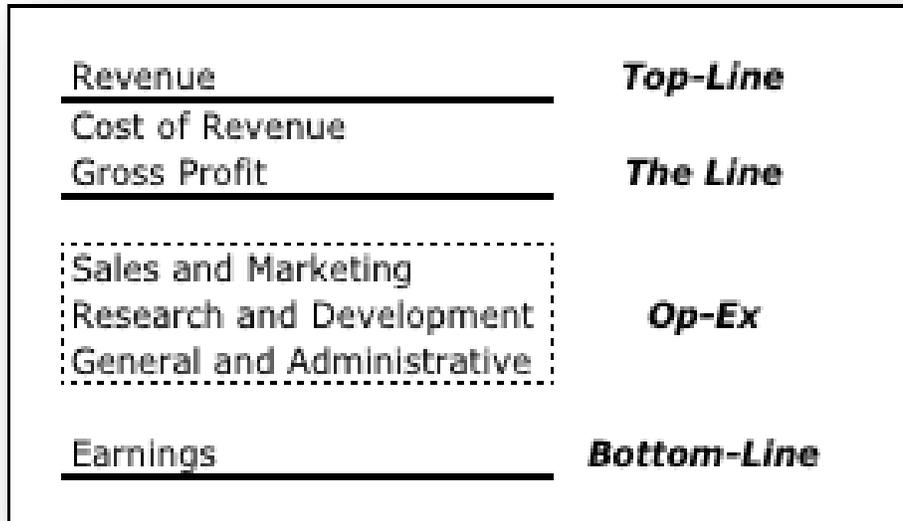


Figure 1. The key elements of the income statement. On the right are common expressions used in the business community.

There are many costs not directly required to produce the goods. A quick example, a car company spends significant money on advertising, but that cost isn't really required to produce the car. This brings us to our second bit of slang: "The Line". Costs below the line are called operational expenses or simply "OpEx".

Slang: "The Line". Costs above the line are those required to produce the product; costs below "The Line" are all of the other costs of the company.

If we want to know the profit, or earnings, of the company, we just subtract operation expenses "opex or below the line spending" from gross profit. Onto our next line of slang "The Bottom Line". For those of you that are counting, the income statement does have three "lines".

Slang: "The Bottom Line": The profit or earnings of the company.

Let's create some slang now . . . "Cost controls above the line led the company to good gross margin in the quarter, but out of control spending beneath the line really trashed the bottom line." Whew, that makes us feel mighty savvy!

TERMS OF ABUSE

Theorem: Any reasonably intelligent person can take an income statement, use a couple of slang terms, over-simplify some ideas, and reach totally awful conclusions.

Corollary: A devious person can take an income statement, use a couple of slang terms, over-simplify some ideas, and reach compelling, self-serving, but ultimately wrong conclusions. This is most often seen in budget and compensation discussions. It is almost always demonstrated when execs of non-profitable companies, that are supposed to be making money, speak.

Key Point: *Regardless of intention, when someone uses a bunch of slang and shorthand math to reach conclusions about the income statement, it is best to be very, very scared . . .*

Fixed-costs: In business, there are costs that do not change smoothly as the business increases. These are often called “fixed-costs”. The difficulty is that virtually every cost does increase as the business gets bigger; you need a larger office at some point, the factory runs out of capacity at some point, the wafer fab has to hire people to staff an additional shift, etc. In poorly run businesses, too much focus is placed upon “filling up” the fixed cost and little to no focus is placed on how the cost structure of a company actually evolves with increasing business.

In one meeting, we watched the clever executive talk about how the fab was a “fixed-cost” and how accepting an order had only financial upsides. We then got to watch the same guy go to the operations guys and tell them to hire whatever people would be required to “make the business happen”. Obviously, in the first meeting, it was being argued that the fab was a fixed cost, while in the second meeting the cost of the fab was discussed as varying with the incoming order.

Key Point: *Fixed costs aren't fixed, and arguments based upon treating costs as fixed are overly optimistic or disingenuous, or both.*

Flow-through: This is a concept based upon the idea that a certain percentage of additional revenue “flows through” to the bottom line of the company. The belief is that you can model the financial effects of a revenue stream by assuming a fixed incremental profit that can be generated by selling the product. Stated differently, it is the concept that the incremental revenue less the variable production costs of the product can be captured at the bottom line of the business.

This viewpoint is, by definition, wrong and is overly optimistic about the benefits of increasing the revenue into the company. In many technology companies, this concept, or ideas related to this concept, have led to a pattern of non-profitability in situations where the capital infrastructure of the company is large. Stated differently, tech companies with a high fixed cost structure are, much more often than not, big money losers.

In Figure 2, we provide a simple example of a company with fixed cost of \$100/quarter and flow-through of 50%. Here we see the company breaking even at revenues of \$200/quarter and achieving profit of \$150/quarter at a revenue level of \$500/quarter.

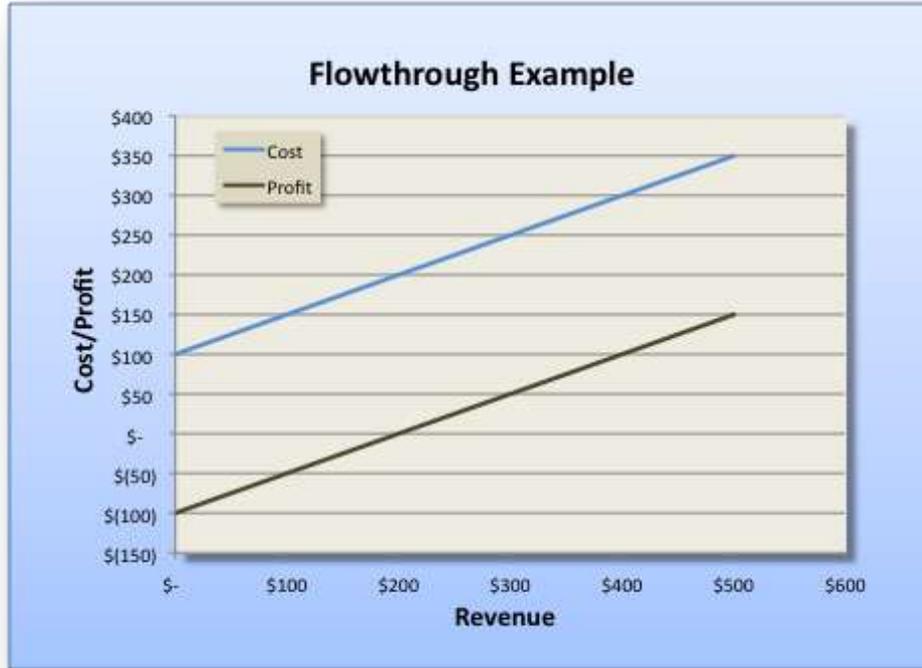


Figure 2. A model of a simple business with \$100/quarter of fixed cost and flow-through of 50%. The company breaks even at \$200/quarter and achieves \$150/quarter of profit at a revenue level of \$500/quarter.

All looks good, but let's actually watch what happens as a little bit of the real world is injected into this example. Let's start with OpEx. As the revenue starts ramping, the CFO says that the small infrastructure of the company will work up to a revenue of \$100/quarter, but after that point, OpEx charges will increase at a rate of about 10% of incremental revenue. This is presented as a very reasonable charge, and the business still looks fairly robust. In this situation, the Marketing guy confidently states that the product still flows through 50% to the gross profit (notice that the Marketing guy switched from flow-through to profit to looking at flow-through to gross profit, a fairly common political switch) and that the break-even point for the business has only modestly increased. His plea to the CEO is to continue aggressively growing the business. Figure. 3 shows a simple model of the business.

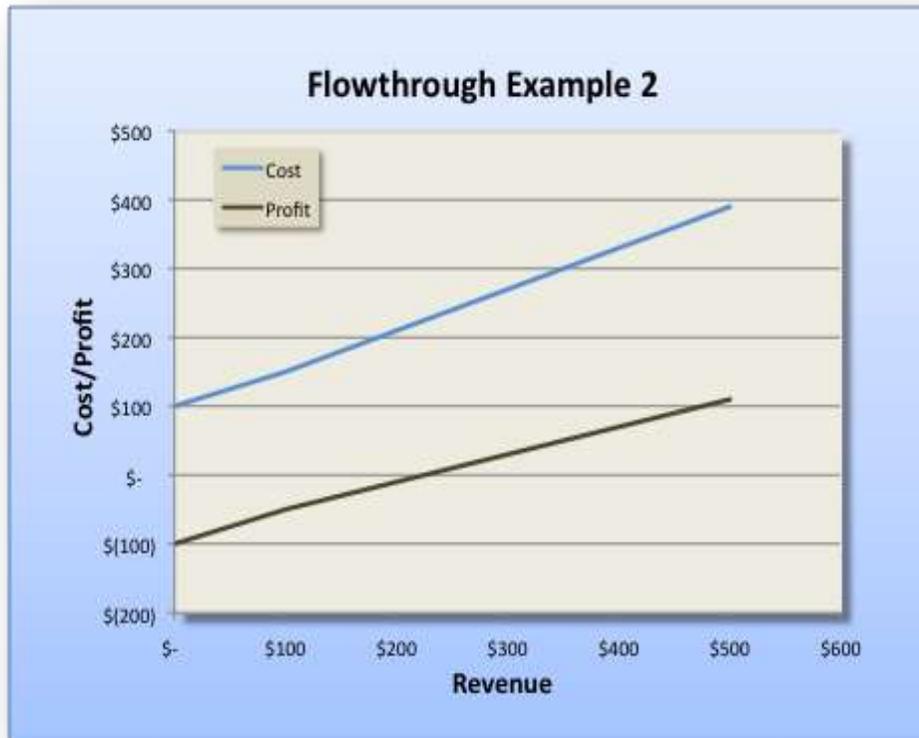


Figure 3. The model of the business, corrected for slight increases of OpEx as the revenue increases. The breakeven point shifts slightly, and the company now makes about \$100/quarter at a revenue level of \$500/quarter.

Time passes and the Marketing guy has the business rolling, with the company really increasing revenue. The next speed bump comes when the Operations guy says that he needs an additional shift to move from the current revenue level of \$300/quarter to \$400/quarter, and that the shift adds \$70 of cost. The first time this happened, at \$200/quarterly revenue, the Ops guys proactively added the people to make the revenue happen.

Now, at \$300 of quarterly revenue, the CEO asks the staff to review the business situation.

- The CFO notes that this line of business has increased the quarterly “fixed” cost of the business by \$90/quarter, and that no path to profitability exists.
- The Sales guy is having heart palpitations over concern that discontinuing the business line would harm critical customer relationships.
- The Operations guy reports that yields are stable, but that at \$400 of quarterly revenue, another shift must be added.

- The Marketing guy says that the business is ramping rapidly. He implores that the team focus upon market share so that volume-related, cost-reductions can fix the profitability problem.

The model of the business now is pretty unattractive, as shown in Figure 4.

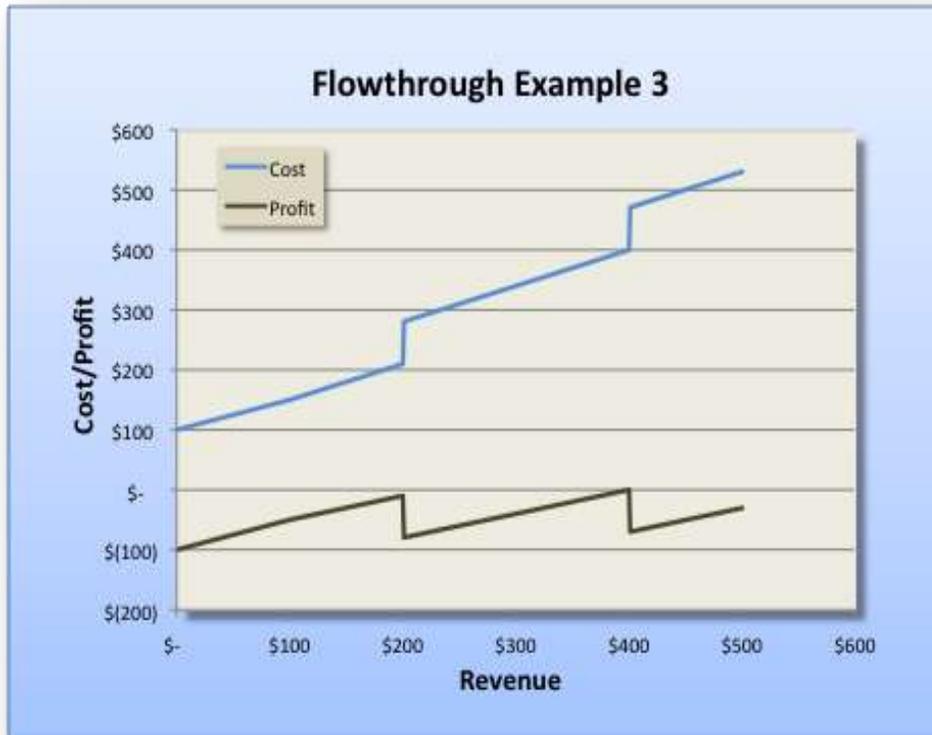


Figure 4. The business model after correcting for the operational costs of increasing capacity. The company doesn't ever achieve solid profitability.

The CEO now faces the hard choice of taking company resources to try to fix a growing, but unprofitable, revenue stream or to re-trench and layoff employees, and start looking for profitable revenue.

These examples are, of course, very simple. However, if you look carefully at the flow-through performance of industries, it is possible to deduce common underlying behavioral patterns. Let's look at the behavior of the telecom sector, both in the glory years of 1995-1999 and in the post-bubble, but pre-recession, era of 2003-2008.

In the years of rapid expansion, 1995-1999, where the average annual growth rate for revenue was 78%, the industry had flow-through to gross profit of 48%, but had truly dismal ability to capture this revenue as operating profit, with only 0.6% of revenue becoming additional profit. In these years, poor control of OpEx and bad acquisitions ate

up all of potential profits of the industry. The time-period of 2004-2008 was, in fact, very similar. The revenue growth was very healthy-- with an average annual growth rate of 29%. Flow-through to gross profit wasn't bad, at 43%. However, the group again had a very difficult time getting much of this profit to the bottom line, with only a nickel of every dollar of incremental revenue becoming profit.

Timeperiod	Flowthrough	
	to Gross Profit	to Op Income
2004-2008	43%	5%
1995-1999	48%	0.6%

Figure 5. The actual flow-through figures of the telecom equipment supplier group. This industry, with relatively high fixed costs, has been unable to achieve a profitable year for well over a decade.

It is our hope that this discussion encourages executives to look more carefully at corporate cost structure evolution prior to engaging in a business activity. It is much easier to make good decisions about a business if the costs are reasonably understood than to dive into a business with an optimistic viewpoint and later seek to fix it. Simple flow-through models are acceptable for throwing out opportunities, but are not sufficiently robust to commit corporate resources.

BUSINESS MODELS

In modeling the growth of businesses, it is often more appropriate to look at a successful, but larger, company with a similar business model, and trend the young company's (or business unit's) income statement to the same sort of metrics as the larger, profitable business. This method has some disadvantages, namely that no two businesses are the same, and that it assumes that the larger, profitable company has a reasonably optimized P&L statement.

The advantages are clear. By looking at the where a successful company spends its money, and by understanding how much spending is actually required to run the business, it becomes possible to quickly develop reasonable spending envelopes. These envelopes help all of the different functional areas understand better how they might grow over time. Further, it forces an executive team to consider the underlying viability of the business. Viability questions can arise when no successful model can be found or when the young company can find no path to supporting the revenue streams with the spending model.

The first case occurs when the “best” company to emulate is simply a money loser. It is presently virtually impossible to fund a fab-based optics company, in large part because the investor community is not able to understand a reasonable path to profitability.

The second case is subtle. It occurs when it becomes problematic for one function of the P&L statement to achieve its mission within the spending envelope. The classic trap for technology companies is that the gross profit generated is insufficient to support an R&D investment large enough to sustain, protect, and grow the revenue stream. For software companies, if the gross profit is not sufficiently high, it may force the sales budget to be insufficient to achieve a solid footprint in the marketplace.

Although it is beyond the scope of this newsletter, it is key to understand that the reporting lines of the P&L statement (revenue, cost of goods sold, sales and marketing, general and administrative, research and development) are related to the missions of the functional areas of company. As such, it is relatively straightforward to “test” a business model. Such testing can be achieved through simple questions. Here we list a few:

- Given the product, customer, market, compliance requirements, and corporate structure, is the G&A budget sufficient for governance of the company?
- Given the customer requirements, market growth rates, product margin structure, and product evolution requirements, is the R&D budget sufficient to generate and protect the required revenue stream.
- Given the geography, number, size of customers, and the distribution structure chosen, is the Sales budget sufficient to generate the revenue growth anticipated?

PRO-FORMA DIZZINESS

Most public companies, and some private companies, report two sets of numbers. The first set is based upon generally accepted accounting principles (GAAP). The second set is called “pro-forma” ([Latin](#) “as a matter of form”). They are not compulsory, but are supposedly provided by management to provide the investor with additional information to better understand the company.

In theory, pro-forma results exclude unusual and non-recurring transactions. Since there is no clear definition as to what can be excluded, management teams exercise a great deal of latitude in this determination.

One funny observation is that while there are many “good” and “bad” unusual events, it is extraordinarily rare for the pro-forma numbers to be worse than GAAP, i.e., it is very rare for a “good” event to be considered a one-time event.

Below we’ll discuss several different types of charges or transactions and when it is appropriate for them to be excluded from a pro-forma result.

Exchange rates. The world is global, and currencies go up and down all the time. As such, a negative effect due to exchange rates should not be excluded, and as noted above, favorable exchange rate effects are seldom pro-forma’d away.



Restructuring charges. This is more complex. If it truly is a restructuring event that is likely to only happen once, the exclusion is appropriate so that investors can better model the forward trajectory of the company. However, many companies have significant restructuring charges each and every quarter. In this situation, it is misleading to investors to constantly throw out restructuring charges.

Inventory scrap. In manufacturing it is routine that a certain amount of inventory eventually becomes unusable (scrap). As such, excluding scrap charges is inappropriate. A case can be made for excluding inventory scrap in the case of the closure of a factory or exiting a large product line, but these charges would usually be included in the restructuring charges that are pro-forma'd.

From a practical point of view, using GAAP numbers gives a much better understanding of the business and allows a more direct comparison of one business to another. Pro-forma numbers are inconsistently used, often gloss over strategic mistakes that the company has made and typically paint an overly optimistic viewpoint for the future.

CONCLUSIONS

The income statement describes the revenues achieved, and costs incurred, for a company during a specific time-period. It is the easiest of the three financial statements to read. It is also the financial statement most prone to overly simplistic conclusions by using shorthand ratios, rules of thumb, or non-comparable numbers.

It is important to understand that simple heuristic tools function as preliminary screening devices for decisions, but unless underlying assumptions are understood, validated, and actual analysis performed, bad business decisions can be made, such as the example given using flow-through calculations.

When comparing results of different companies to each other, it is important to think about and understand what charges are included in the income statement line items and what charges have been pro-forma'd out. For example, are bonuses included in the individual line items for each functional area or cumulated in a G&A line, or pro-forma'd away all together.

This seemingly easy financial statement can provide a great deal of information about a business operation but can also be easily misunderstood by not thinking deeply enough about what is being presented.

Cheers,

The InSite Team

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