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When Projects Have a Zero or Negative NPV

Conducting financial analysis on zero and negative NPV investments is as important as doing it on positive NPV investments.

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The net present value (NPV) rule is essentially the golden rule of corporate finance that every business school student is exposed to in most every introductory finance class. The NPV rule dictates that investments should be accepted when the present value of all the projected positive and negative free cash flows sum to a positive number.

Formalized and popularized by Irving Fisher more than one hundred years ago, this framework has stood the test of time. After decades of working in the field, I firmly believe the [NPV](#) rule is an accurate way to evaluate decisions, and the math behind it is a useful way to value companies. We calculate NPV as the present value of [Residual Cash Earnings \(RCE\)](#), instead of free cash flow, because it provides a similar NPV result but gives us better insight into period performance and allows us to track progress after the investment is made.

Despite the general acceptance and validity of NPV, every single company makes many investments that appear to have zero or negative NPV. This is not bad, per se, as long as it is done for the right reasons and is properly managed. Unfortunately, many companies don't have the right reasons and don't manage the process well.

We have all heard executives say that a decision was "strategic" when it couldn't be justified financially. However, if it never turns out to be financial, then it is not very strategic. It's true that sometimes the benefits of an investment are hard to quantify or are expected to take an unusually long period of time to materialize. But if there are no benefits, the investment is not strategic. Don't rationalize a forecast when it's like throwing darts at a wall, just recognize that the benefits must be there but are simply hard to quantify or predict.

In many companies, the problem begins at the start of the process. Often, the capital investment approval process is about checking the box where the requester indicates if this investment is for growth, for improved efficiency, or for some other "strategic" reason. This last category can include investments to improve safety, comply with environmental regulations, or maintain assets such as replacing a roof on an aging building.

In many companies, when the "other" box is checked, it is simply assumed the investment is required and the approval process moves along with little or no financial analysis. After all, if we know the NPV will be negative, why do the analysis? It won't affect the decision. Herein lies the main problem.

There are many significant benefits to preparing forecasts and evaluating NPV even when we know in advance the results will be a zero or negative NPV because the benefits are difficult to quantify. We can still consider different

investment alternatives to try to find the least negative NPV solution. Perhaps we are installing a scrubber designed to reduce emissions from an industrial process and a scrubber twice the size may cost only 20% more now but significantly delay the point at which the next scrubber must be added. Over a life cycle, this may be a less negative decision, which is better than the more negative decision. Or maybe the smaller scrubber is better. How do we know which will have the least negative NPV without analysis?

As discussed above, the problem often isn't that an investment has a negative NPV but that the benefits are just hard to quantify. Instead of throwing up one's arms and saying it cannot be analyzed, it is far better in some cases to at least back into the NPV-breakeven forecast and qualitatively assess whether management believes the future will be above or below the NPV breakeven line. People are often more willing to say yes or no to a breakeven than they are to submit a forecast of what will happen.

We can then use those breakeven assumptions to establish minimum milestones, financial and otherwise, that can be tracked after the investment. For example, consider an investment in technology that will speed up access to information used by many employees every day. Maybe the breakeven assumption is that 500 employees per day will need to access the information for the project to be financially feasible. Even though this may be a negative NPV, we can track how many people access the data each day and at least see if the expected benefits are happening. This can be good to know the next time an investment of this type is requested.

Sometimes projects seem to have a negative NPV because the investment doesn't make anything better; rather, it keeps from making something worse. If a roof isn't replaced, it will leak and eventually the company will need to close the facility. Or worse, the roof collapses, resulting in litigation. Keeping that bad outcome from happening is beneficial, but including the facility running or not isn't helpful to the NPV analysis. So we live with a negative NPV – but should still try to find the least negative NPV solution.

Some companies go to great lengths to make sure they execute strategic investments that appear to have a negative NPV, in some cases deliberately misallocating costs and assets to other projects so the investment looks artificially better. These cross-subsidies are said to keep a results oriented-organization from terminating strategic initiatives. Unfortunately, this sort of artificial support often endures due to organizational inertia and political posturing, resulting in bad decisions where other truly profitable projects are rejected over time because they are saddled with costs that have been wrongly allocated.

Eventually, the misaligned costs and assets are often treated as if they were reality and this can have adverse implications for operational decisions, such as pricing, and strategic decisions, such as how much to invest in growing the subsidized business. Much better to face the negative NPV, support the initiative anyway, and have clear financial and non-financial milestones that will be signs that the activity should continue to grow into someday having a positive NPV or being shut down.

So doing financial analysis on zero and negative NPV investments is as important as doing analysis for positive NPV investments. This will help in evaluating alternatives to find the least negative NPV solution and in setting up minimum milestones that can be used to track performance after the investment. When forecasts are hard to create, consider using NPV breakeven analysis. And avoid subsidizing activities to make them look better – facing reality will always lead to better decisions.

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