



EPICENTRAL

A Newsletter from Epicenter Development Group
highlighting ideas that improve organizations

Welcome to Epicenter Development Group's newsletter, EPICentral. The purpose of this newsletter is to highlight fundamental ideas that have helped organizations develop and maintain great manufacturing and service operations. We hope that you find our EPICentral newsletter helpful, and we would welcome your comments on its content.

Show Me the Money! - Evaluating and Comparing Financial Decisions

I recently worked with a growing firm that was considering an expansion to its warehouse. There were four options: **(1)** Do nothing and continue to use outside warehousing to store raw and finished goods inventory; **(2)** Purchase the neighboring property and expand the building; **(3)** Buy a second building to use as a stand-alone warehouse; and **(4)** Buy a new, larger building for the entire operation. In cases such as this, where there are a number of complex alternatives to consider, I recommend the development and use of a financial model. Financial models are a great way to drive the decision process and to quickly evaluate and compare options.

Essentially a financial model is a structured Excel spreadsheet that organizes financial data into a periodic cash flow and calculates user-specified metrics.

Financial data could include:

- Expected startup capital costs and expenses (one-time costs).
- Estimated fixed expenses and benefits (as sales increase, for example, these periodic expenses and benefits stay constant).
- Estimated variable expenses and benefits (as sales increase, for example, these periodic expenses and benefits increase).

User-specified metrics could include:

- Rate of Return - How much benefit (% return) am I getting from my startup costs and expenses?
- Payback Period - How long will it take to pay back my initial investment from the savings generated?

- Net Present Value - What is the overall value, in today's dollars, of the investment and future benefits?

Building a Basic Financial Model

1. The first step of model building is to determine the planning period for the analysis. In general, the planning period should be determined by the life-cycle value of the investment. A new building may provide value for twenty years. A new piece of equipment may be good for only five years. Once you have chosen a planning period, create and label a row for each month (see example below).
2. Next create columns to hold costs and savings that occur during each month (see example below).
3. Fill the columns with information directly or link them to a different part of the worksheet that itemizes the information. "Monthly variable savings," for example, may include a number of sub-items such as "labor savings," "utility savings," and "transportation savings" that can be calculated and totaled on a separate sheet.
4. Once the costs and savings are in the model, the final column can be used to total up the overall cash flow for each month.
5. Microsoft Excel has a number of financial formulas that are available to calculate investment metrics. The two shown in the example include Net Present Value (\$54,048 based upon a 7% rate for working capital) and Internal Rate of Return (-7% based upon the initial investment and twelve months of savings). If you are unclear how to use the formulas, Excel has a number of help screens with examples that you can use for reference.

Month	Startup Cost	Monthly Fixed Expenses	Monthly Variable Expenses	Monthly Fixed Savings	Monthly Variable Savings	Cash Flow
0	\$ 150,000					\$ 150,000
1		\$7,000	\$5,000	(\$2,000)	(\$15,000)	\$ (5,000)
2		\$7,000	\$10,000	(\$2,000)	(\$30,000)	\$ (15,000)
3		\$7,000	\$7,000	(\$2,000)	(\$21,000)	\$ (9,000)
4		\$7,000	\$15,000	(\$2,000)	(\$45,000)	\$ (25,000)
5		\$7,000	\$5,000	(\$2,000)	(\$15,000)	\$ (5,000)
6		\$7,000	\$5,000	(\$2,000)	(\$15,000)	\$ (5,000)
7		\$7,000	\$8,500	(\$2,000)	(\$19,500)	\$ (9,000)
8		\$7,000	\$8,000	(\$2,000)	(\$24,000)	\$ (11,000)
9		\$7,000	\$4,000	(\$2,000)	(\$12,000)	\$ (3,000)
10		\$7,000	\$4,000	(\$2,000)	(\$12,000)	\$ (3,000)
11		\$7,000	\$4,000	(\$2,000)	(\$12,000)	\$ (3,000)
12		\$7,000	\$8,000	(\$2,000)	(\$18,000)	\$ (7,000)

Net Present Value (7% Interest): **\$54,048**
 Internal Rate of Return (12 months): **-7%**

Once a base financial model has been made, alternative scenarios can be quickly built and

evaluated by changing the base assumptions in the worksheet. For example, an option to use an outsourced warehouse would lead to increased, variable expenses while an expansion to the current building would create a large, upfront capital cost. Other benefits to using the completed financial model can include:

- The model development process creates a process for groups to evaluate alternatives.
- The model documents the assumptions used to evaluate each alternative for later reference.
- The model allows the user to do sensitivity analysis. How sensitive are your results to the assumptions used (labor rates, growth rate, cost of capital, utility costs).
- The model can be used to prioritize opportunities for improvement.

Next Steps

If you would like more information on this topic or other similar types of tools, please contact Bill Proctor with your request at wproctor@epicentergroup.com or 216-702-0952. You can also find previous issues of EPICentral at [Newsletters](#).

Mr. Proctor also speaks on a variety of problem-solving and system design topics that can help companies significantly increase the success and profitability of their businesses. If you are interested in having Bill speak at one of your upcoming meetings/events or would like more information on any of the speaking topics, please visit [Speaker Services](#) or you can email sales@epicentergroup.com.

Epicenter Development Group is a unique consulting firm that seamlessly integrates the disciplines of Systems Engineering and Organizational Analysis & Development to create practical design solutions to your toughest challenges. It is on the cutting edge of problem-solving solutions and the creator of a unique process called GreenRoom Engineering. This process adds greater value and cost savings for clients as compared to traditional engineering methods.

William Proctor, Epicenter's founder and president, has provided services around the country to more than 100 companies consisting of a variety of organizations; and Epicenter continues to grow as a resource for firms of all sizes.

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