

Chapter 8 Fundamentals of Capital Budgeting

Set up the timeline and computation of free cash flow in separate, contiguous columns for each year of the project life. Be sure to make outflows negative and inflows positive.

- a. Assume that the project's profitability will be similar to IBM's existing projects in 2014 and estimate (revenues - costs) each year by using the 2014 EBITDA/Sales profit margin. Calculate EBITDA as EBIT + Depreciation expense from the cash flow statement.
 - b. Determine the annual depreciation by assuming IBM depreciates these assets by the straight-line method over a 5-year life.
 - c. Determine IBM's tax rate by using the income tax rate in 2014.
 - d. Calculate the net working capital required each year by assuming that the level of NWC will be a constant percentage of the project's sales. Use IBM's 2014 NWC/Sales to estimate the required percentage. (Use only accounts receivable, accounts payable, and inventory to measure working capital. Other components of current assets and liabilities are harder to interpret and not necessarily reflective of the project's required NWC—for example, IBM's cash holdings.)
 - e. To determine the free cash flow, deduct the additional capital investment and the *change* in net working capital each year.
3. Use Excel to determine the NPV of the project with a 12% cost of capital. Also calculate the IRR of the project using Excel's IRR function.
 4. Perform a sensitivity analysis by varying the project forecasts as follows:
 - a. Suppose first year sales will equal 2%–4% of IBM's revenues.
 - b. Suppose the cost of capital is 10%–15%.
 - c. Suppose revenue growth is constant after the first year at a rate of 0%–10%.

Note: Updates to this data case may be found at www.berkdemarzo.com.