

# Chapter 16

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## Creating the Best Spreadsheet Architecture for Financial Analysis

### Introduction

Financial models and other types of spreadsheets used for financial analysis are often passed on by their authors to successors, giving many files more than a 20-year useful life. No other files on Wall Street are used as heavily as those critical to the forecasting process. As such, creating a new spreadsheet that will be used routinely requires some thoughtful planning. Unfortunately, many analysts build their worksheets by adding each piece of information as needed. They often discover it becomes an unmanageable monstrosity, filled with broken links and errors, and ultimately difficult to follow. Unless you're working in total isolation from others or never look at the same company twice, it's critical to invest the time up front to build spreadsheet files correctly. I recommend following the best practices found in Exhibit 16.1 to make financial spreadsheets and workbooks easy to use and worthy of generating useful insights.

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I would like to thank Bob Jones of Murray Hill Associates for his contribution to this best practice.

**Exhibit 16.1** Best Practice (Skills): Creating the Best Spreadsheet Architecture for Financial Analysis**General**

- If a forecasting or data file will be used by multiple people, identify a single individual who will oversee and coordinate changes as well as communicate those changes to everyone using the file.
- Document all important information:
  - Create a cover page worksheet (not the legal disclaimer page found on some sell-side workbooks) for the following:
    - Explanation of how the workbook operates, including all of its component worksheets. Specific information should be provided to easily locate assumptions and important output.
    - Direction on how to use the file, highlighting which information can be changed and which should be left alone. If applicable, this includes a legend explaining color codes.
    - Explanation of complicated formulas or macros that will not be intuitively understood by anyone other than the file's author.
    - Sources of the information for the file, such as a company's 10-K, Bloomberg function DES, or a sector website.
    - Contact information, include phone numbers and e-mail address of those who author any elements of the file (including any experts who created the macros) or are responsible for updating the file.
    - List of any worksheets that are routinely hidden (unless they are for restricted use only).
  - Within individual worksheets:
    - Use text boxes for general explanations and notes. These can float on the surface and can be modified to not print.
    - Use the comments feature (shift F2) within cells to:
      - Explain the purpose and mechanics of complex formulas.
      - Document adjustments to formulas; paste the original formula into the comment if it will be referenced in the future.
- Avoid creating macros that attempt to run processes in the model. Macros may be useful for cleaning up or processing information that will be used in the model, but even then, avoid using macros unless the amount of time saved clearly offsets the risk of mistakes and complications for others.
- Avoid circular references as they can get complicated and difficult to manage, especially if others will be using the file. The one area of possible exception is calculating interest expense on the income statement based on the amount of cash on the balance sheet, but there are workarounds even for this. (See page 181 of John Tjia's *Building Financial Models*, Second Edition, for an explanation of options beyond the circular reference.)

Read the rest of this chapter in the full version available at [Amazon.com](https://www.amazon.com)

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