Many Independent Software Vendors (ISVs) provide the ability to import real-time market data to Excel by either Real-Time Data (RTD) or Dynamic Data Exchange (DDE). These two services enable traders and analysts to create custom Excel dashboards and perform market analysis that might not otherwise be possible using the vendor’s software platform alone.

However, while most Excel devotees are often very knowledgeable about the process of using RTD or DDE formulas to display market information in a spreadsheet, they often miss the opportunity to create more useful and sophisticated tools. Using Excel’s suite of Conditional Formatting applications allows you to create a more...
informative and visually intuitive market data display.

For example, Excel has a “heat mapping” feature that allows you to assign specific colors to indicate percentage changes — for example, you can format a percent change column to highlight the top market performers bright green and highlight the worst market performers bright red. This makes the information much easier to take in at a glance and frees you from having to do math in your head. Your eyes go immediately to the extreme over-and-under-performers.

Building a better spreadsheet

Figure 1 shows an example of a typical Excel spreadsheet, displaying market data it has linked to CQG via RTD. The top section contains depth-of-market data from the exchange’s order book, detailing the price and size of the best bid and ask, and the next four levels above and below the best bid and ask, for nine futures markets.

The lower portion of the spreadsheet contains (from left) a list of markets and symbols, and then the last price, the net change, and the percentage net change. Continuing to the right is a correlation matrix using the look-back period and time frame listed at the bottom-left corner (20 bars, 15-minute). At the far right of the spreadsheet is the current day’s volume and volume percent change.

The challenge of using this spreadsheet is quickly absorbing and deciphering all the data it contains. This plain format makes understanding the market information difficult because you have to look closely at each cell and make relative comparisons in your head.

Now look at Figure 2, which is a spreadsheet with the same information but modified to make it easier to take in the data. In addition to changing the background color to black, Excel’s conditional formatting features have been applied to highlight key market information. Heat mapping and histogram bars are used to show relative values.

To better understand the process of applying conditional formatting, we will review the conditional formatting steps used in each section of the spreadsheet.

Conditional formatting

In Figure 2, the top-left corner shows the ask side of the order book for the E-Mini S&P 500 futures contract (ticker symbol ES, shown here as EP). Each cell contains the size currently offered by price level. To identify which price level has the largest offerings, the ask size column is formatted with Excel’s data bars, continued on p. 52
To apply data bars to a section, select the cells to be formatted and then use the pull-down menu from “Conditional Formatting,” as shown in Figure 3. The pull-down menu has several preformatted sets using different colors. Once applied, this formatting can be modified by selecting “Manage Rules” at the bottom of the first menu.

The ask prices use a different conditional formatting feature: a gradient effect that darkens a cell’s color at each higher price. Figure 4 shows the menu for this formatting. To apply it, select “Format all cells based on their values” and then “Use 2-color scale.” You can then select the color for the smallest value and the color for the highest value, and Excel will progressively adjust the shade between the two colors. For the bid prices and sizes, use the same steps and a different color, such as red shown here. Then apply these same steps to each market group.

In the market data section, the conditional formatting is applied to the percent net change ("% Net") section. Here, the top market performers are highlighted green while the biggest decliners are highlighted red (all the markets were in positive territory at the time the image was captured), with gradient colors in between — also known as heat mapping. Figure 5 shows the menu selection. Choose “Format all cells based on their values,” but this time select “3-color scale.” Again, you can select the colors you want to apply.

The correlation matrix highlights the top five correlated markets (green) and the bottom five (red). Here, the highlighting allows you to get the market information without having to scan and compare multiple cells.

Figure 6 shows the rule for this color conditional formatting is "Format only top or bottom ranked values." For this formatting which use horizontal histogram data bars.
“Top” and “5” are selected. To highlight the bottom 5, select “Bottom” and “5” from the same menu and use a different color.

Also, notice in Figure 2 that “Correlation: 20” and “Period: 15” are displayed at the bottom. In this example, the user can enter a different look-back period and time frame, such as “10” and “D” for a 10-bar correlation analysis of daily prices. This is a real advantage that RTD offers over DDE: RTD Excel formulas can reference other cells, DDE doesn’t have that feature. As a result, study values for a group can be modified by a change in a single cell.

The final conditional formatting is the “% Net” volume change, which is the same formatting used in the % Net market price change.

Additional options
Other ways to dress up the display are to use gradient backgrounds, color the cell borders to create formatted grids, and apply different fonts.

Excel 2010 can take your generic display and make it a more dynamic and intuitive trading dashboard that gives you a much better sense of the state of the markets. ◆

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**FIGURE 6: CORRELATION MATRIX FORMATTING**

Another formatting feature allows you to highlight just the top or bottom values in a category. Here, the top five are highlighted green.