Navigating In Uncharted Waters Of Microsoft Excel Charts

Translating Excel spreadsheets is pretty easy. All you need to do is translate text in individual cells and then format the spreadsheet for the target language user. However, sometimes your spreadsheet will contain charts, making translation more complicated. This article will help you understand and master charts so you can easily translate even the most advanced varieties.
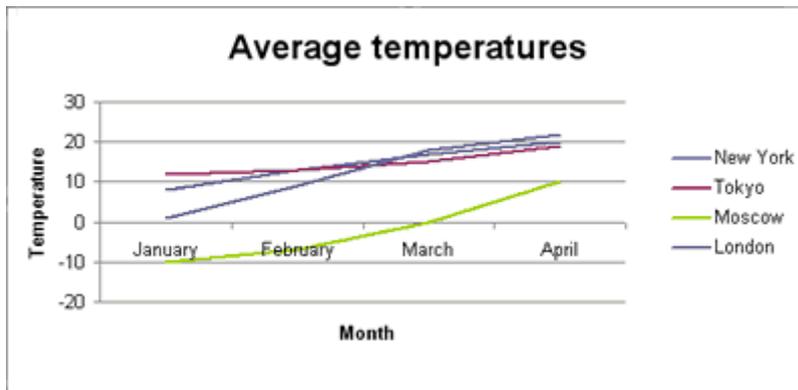

Figure 1: A sample Excel chart

What charts are made of

Excel charts are quite easy if you understand how they are built. Let us look at the components of our sample chart shown in Figure 1 above.

1. Every chart is built on the basis of some **data set**, usually taken from a range of cells in the same Excel spreadsheet. Here is the data that was used to create our sample chart (shown above):

	New York	Tokyo	Moscow	London
January	8	12	-10	1
February	13	13	-7	9
March	17	15	0	18
April	20	19	10	22

   When Excel builds a chart, it analyzes values and plots them on the chart depending on the type of chart. The most commonly used types include *line charts* (our sample chart is an example), *bar charts* (including column charts) and *pie charts*.
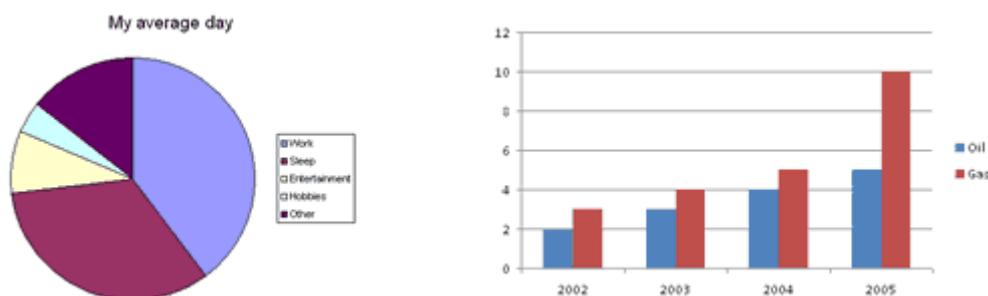

Figure 2: Examples of pie and column charts

   The chart's data set is always located outside the chart in a range on the same or different sheet, but sometimes its copy appears inside the chart for readability.

2. Most Excel charts have two axes - a **category axis** (usually this is the **X axis**) and the **value axis** (usu. the **Y axis**). On those axes, Excel plots the relationship between two parameters. In our example, Excel shows month names along the X axis and the corresponding temperatures along the Y axis. Labels appearing along the category axis are called **category names (category labels)** .

   Each axis may have a primary **axis title** appearing near the axis, and (rarely) a **secondary axis title** shown on the other side. They are appropriately called Horizontal (Category) Axis Title and Vertical (Value) Axis Title.

3. Each chart shows several values or groups of values in a visual, easy-to-read format. For example, in a pie chart each value is represented by a pie slice, in a column (bar) chart - by bars of the same color, and in a line chart - by a zigzagging or straight line. These values (for a pie chart) or groups of values (for a line or bar chart) are called **series**. Each series is assigned a unique color to make the chart even easier to understand. Depending on the chart's settings, a series may correspond to a single column or row in the data set. In addition, each series has a specific name which is usually taken

from the first cell of a column (or row) in the data set. In our example, you can see 4 series names called 'New York', 'Tokyo', 'Moscow' and 'London'. **Series names** are also called **legend entries** because they also appear in the *legend* if a legend is displayed.

4. A **legend** is frequently used to provide meaning to a color assigned to a series. It contains names of each series and indicates the color by which you can find a series on the chart. The legend may be positioned on any of the four sides of a chart.

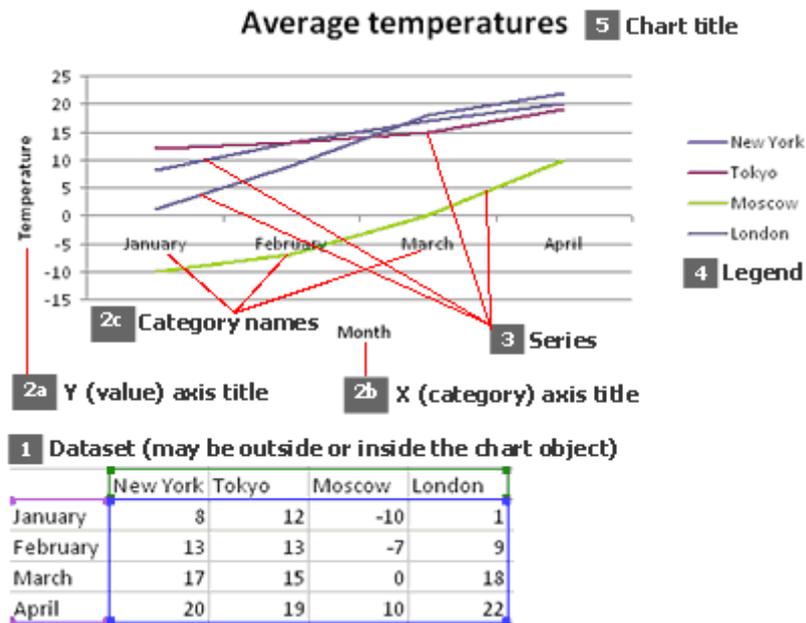5. At the top or bottom of a chart you usually see a **chart title**.

Figure 3: Components of a typical Excel chart

From Excel perspective, there are two more chart components which should be mentioned:

- **Plot Area** is the area where the data set is displayed. In other words, the Plot Area does not include axis titles, chart title, legend. For line charts, the Plot Area contains X and Y axes and the area between them; for pie charts, it is the actual pie, etc.

- **Chart Area** is the entire area occupied by the chart. It contains the Plot Area, legend, chart title, etc.

Working with Excel charts

Depending on the location in an Excel spreadsheet, charts are subdivided into **chart objects** and **chart sheets**. A **chart object** is a chart which is placed on an existing sheet along with other data. A **chart sheet** is a standalone sheet occupied by the chart only, with nothing else in it.

When you select the Chart Area (by clicking empty space near chart's edge), or an individual series, Excel automatically outlines the respective cells with different colors (see Figure 3 above).

A word on formulas

All charts rely on formulas to refer to the data that exists somewhere else on the same or different sheet. These formulas usually refer to several types of data: 1) values used to plot individual series; 2) values used to show along the category axis; etc. The following types of formula may be used:

- =*Sheet1!$A$1*. This formula indicates a *cell address*. If this type of formula is used, the cell's value will be used on the chart. The first part before the exclamation sign (shown in blue) refers to the name of the sheet where the cell is located, and the second part (shown in dark red) refers to the address of a cell, e.g. $A$1 means A1, etc. In a chart, this formula is usually used for series names used to create the legend.

- =*"New York temp."*. This is a *text formula*. It specifies the exact text which must be used. In a chart, it is usually used for series names used to create the legend. If you want to insert double quotes, you need to enter them twice, e.g. =*"Temperature in ""Big Apple"""*.

- =*Sheet1!$A$1:$A$10*. This formula refers to a *cell range*, e.g. $A$1:$A$10 means a range with the top left corner in cell A1 and the bottom right corner in cell A10. It is used for chart's data ranges, category names, and some other things.

- =*{"Jan", "Feb", "Mar" ,"Apr"}* (may also be shown as =*{"Jan"\"Feb"\"Mar"\"Apr"}*). This is an *array formula*. It specifies a number of text values to show on the chart. This type of formula is used quite rarely, usually for category names.

Different versions of Microsoft Excel provide different user interfaces for working with charts.

- **Excel 2003 and earlier:**

  - Click anywhere on the chart. A new menu item, *Chart*, will appear on the menu bar, and a toolbar called '*Chart*' will become visible. You can use these controls to get easy access to various chart components.

  - To modify chart components (e.g. resize, move, change text, format), you can click them with the mouse or select them from the drop-down list on the *Chart* toolbar.

  - You can change the size of the Plot Area, Legend, or Chart Area to make the translation fit.

  - The quickest way to edit Chart Title, Category Axis Title, Value Axis Title, and secondary axis titles (if used) is to select *Chart -> Chart Options...* and click the *Titles* tab where you can modify each title.

  - To edit all the data that goes into the chart, select *Chart -> Source Data...* and check the *Data Range* parameter on the *Data Range* tab.

  - To edit series names used to make the chart legend, select *Chart -> Source Data...* and click the *Series* tab. Each series will be shown in the *Series* list. Select the appropriate series and check the *Name* field.

  - Another way to edit series names is to select the series with the mouse or from the drop-down list on the *Chart* toolbar, and edit the formula in the formula bar. See the next section for more detail.

  - To edit labels shown along the category axis (if shown), select *Chart -> Source Data...* and click the *Series* tab. Use the field labelled '*Category (X) axis labels*' at the bottom of the dialogue to see where the data is taken from or modify the formula (if it is an array formula).

- **Excel 2007 and later:**

  - Click anywhere on the chart. You will see a new group of tabs called '*Chart Tools*' appear at the top of the ribbon, with three tabs underneath: *Design*, *Layout* and *Format*.

  - To modify chart components (e.g. resize, move, change text, format), you can click them with the mouse or select them from the drop-down list in the *Current Selection* group on *Layout* and *Format* tabs.

  - You can change the size of the Plot Area, Legend, or Chart Area to make the translation fit.

  - To edit Chart Title, Category Axis Title, Value Axis Title, and secondary axis titles (if used), select them with the mouse, right-click and select *Edit Text* menu item (you can also left-click inside the title).

  - To edit all the data that goes into the chart, right-click the chart and choose *Select Data* from the dropdown menu. You will see '*Select Data Source*' dialogue. An alternative way is to click *Select Data* button in the *Data* group on the *Design* tab.

  - To edit series names in the chart legend, right-click the chart and choose *Select Data* from the dropdown menu, or click *Select Data* button in the *Data* group on the *Design* tab. In the *Select Data Source* dialogue, select each individual series in the list on the left side, click *Edit*, and then edit the *Series Name* field in the *Edit Series* dialogue.

  - Another way to edit series names is to select the series with the mouse or from the dropdown list in the *Current Selection* group on *Layout* and *Format* tabs, and then edit the formula in the formula bar. See the next section for more detail.

○ To edit labels shown along the category axis (if shown), right-click the chart and choose *Select Data* from the dropdown menu, or click *Select Data* button in the *Data* group on the *Design* tab. In the *Select Data Source* dialogue, click *Edit* button on the right side of the dialogue to show *Axis Labels* dialogue. Use the field on this dialogue to see where the data is taken from or modify the formula (if it is an array formula).

Translating the sample chart

Now that you know the components of an Excel chart and how to manipulate them with your version of Excel, let's translate our sample chart. Off we go!

Our chart has the following translateable elements:

1. Chart title
2. Axis titles
3. Legend
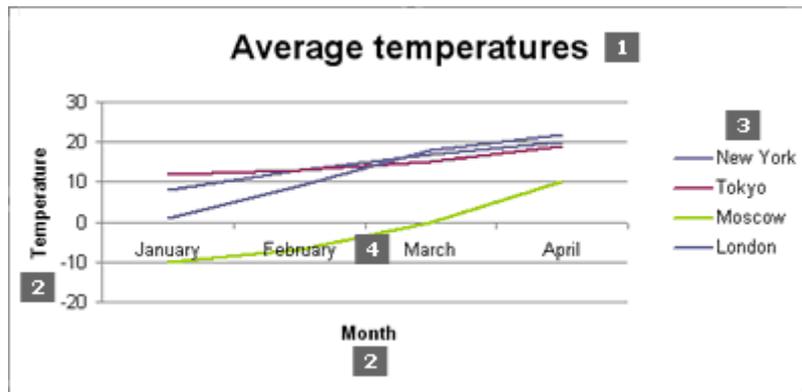4. Category or value names plotted along X or Y axes.

Figure 4: Translateable components

1. Translating a chart title

Perhaps the easiest way to translate the chart title is to click it with the mouse and edit the text. There are other ways depending on your version of Microsoft Excel:

- *Excel 2003 and earlier:*

  To select the chart title accurately, select 'Chart Title' from the drop-down list on the *Chart* toolbar.

  To edit the chart title quickly, select *Chart -> Chart Options...* and click the *Titles* tab. This will allow you to edit all axis titles as well.

- *Excel 2007 and later:*

  To select the chart title accurately, select 'Chart Title' from the drop-down list in the *Current Selection* group on *Layout* and *Format* tabs.

Sometimes you will also need to resize the chart title because the translation will not show as intended. Excel will not allow you to resize the text box, but you can change font properties to accomplish the task, or resize the whole chart.

2. Translating axis titles

As explained above, there are usually 2 axis titles on a chart, but sometimes there may be secondary axis titles appearing on the right or top of the chart.

Just like with a chart title, you can edit axis titles by clicking them with the mouse and editing the text. There are other ways depending on your version of Microsoft Excel:

- *Excel 2003 and earlier:*

  To select an axis title accurately, select 'Category Axis Title', 'Value Axis Title', 'Secondary Category Axis Title', or 'Secondary Value Axis Title' from the drop-down list on the *Chart* toolbar.

  To edit axis titles quickly, select *Chart -> Chart Options...* and click the *Titles* tab. Edit individual titles on the dialogue. You can also edit the chart title from this dialogue.
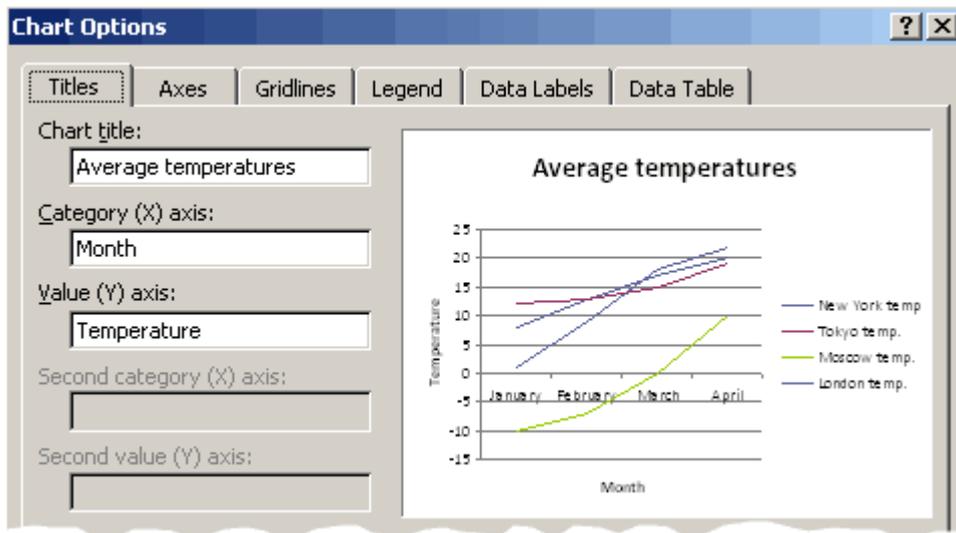
- *Excel 2007 and later:*

  To select an axis title accurately, select 'Horizontal (Category) Axis Title', 'Vertical (Value) Axis Title', 'Secondary Horizontal (Category) Axis Title', or 'Secondary Vertical (Value) Axis Title' from the drop-down list in the *Current Selection* group on *Layout* and *Format* tabs. You can also use the mouse, of course.
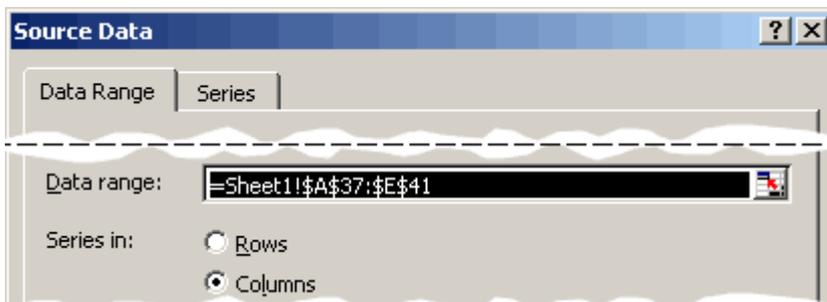
3. Translating the legend

In many situations, you will only need to edit the data range of the chart to translate the legend and category names (axis labels).
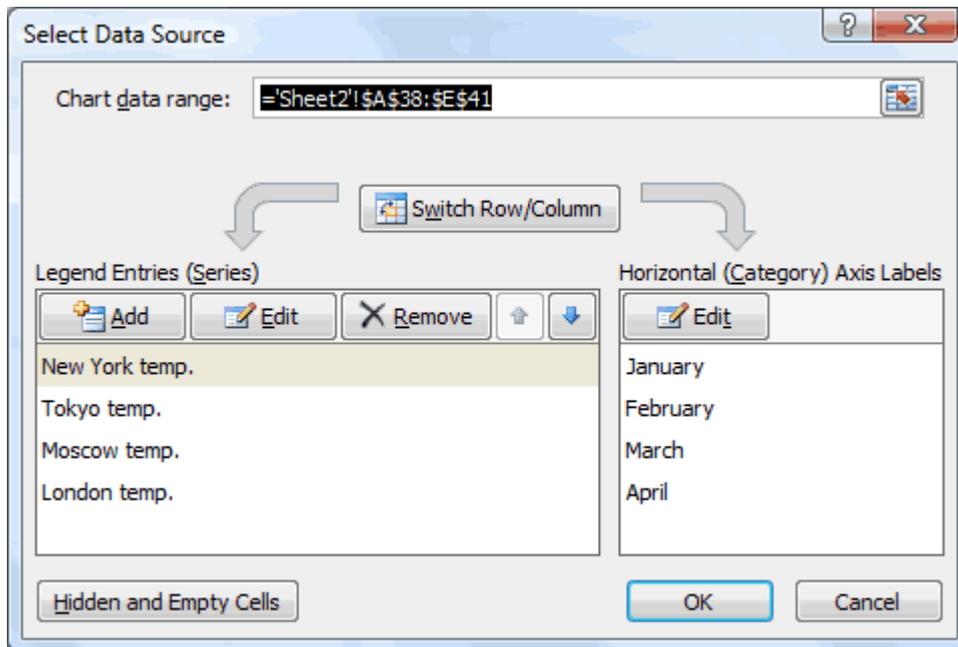
First, determine the chart's data range:

- *In Excel 2003 and earlier:*

  Select *Chart -> Source Data...* and check the *Data Range* parameter on the *Data Range* tab.

- *In Excel 2007 and later:*

  Right-click the chart and choose *Select Data* from the dropdown menu. You will see '*Select Data Source*' dialogue. Alternatively, click *Select Data* button in the *Data* group on the *Design* tab.
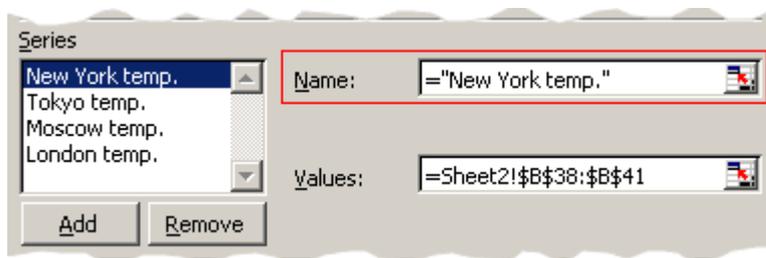
If the Data Range field contains a formula (e.g. =*Sheet1!$A$1:$C$10*), you can locate the range and check whether it includes the series names displayed in the chart legend. If this is so, you can edit the text, and the legend will be magically translated. See 'A word on formulas' above for more information on formulas.

If the Data Range field is empty (Excel 2003 or earlier) , or if the indicated range does not contain series names, you will have to translate series name the hard way. Follow the guidelines below to do this:

- *Excel 2003 and earlier:*

  There are two ways to edit a series name:

  1. Select *Chart -> Source Data...* and click the *Series* tab. Each series will be shown in the *Series* list. Select the appropriate series and check the *Name* field.

     - If the field indicates a cell address, it is best to find the cell and translate its value.
     - If the field displays something like =*"New York temp."*, you will need to modify it. The best way to do this is select all the text between double quotes and then type the translation over it. Be careful when pressing Left or Right keys because this inserts the address of the current cell.

     See 'A word on formulas' for more information on working with formulas.

  2. Select the series with the mouse or from the drop-down list on the *Chart* toolbar. You will see a formula shown in the formula bar, e.g.:

     =SERIES("New York temp.";Sheet1!$A$38:$A$41;Sheet1!$D$38:$D$41;3)

     If the first parameter of the formula is not a cell address, you will need to edit the text between double quotes (shown in dark-red above), and click the green tick (✔) on the left to update the legend. To cancel your action, click the red cross (✗) on the left or press Cancel.

     Note: the word SERIES in the formula may be localized in non-English versions of Microsoft Excel. The symbol that separates parameters in the formula (e.g. ";") may also be different.

  Once you do this, the appropriate legend entry will be translated.

- *Excel 2007 and later:*

  There are two ways to edit a series name:

1. Right-click the chart and choose *Select Data* from the dropdown menu, or click *Select Data* button in the *Data* group on the *Design* tab. In the *Select Data Source* dialogue, select each individual series in the list on the left side, click *Edit*, and then check the *Series Name* field in the *Edit Series* dialogue.
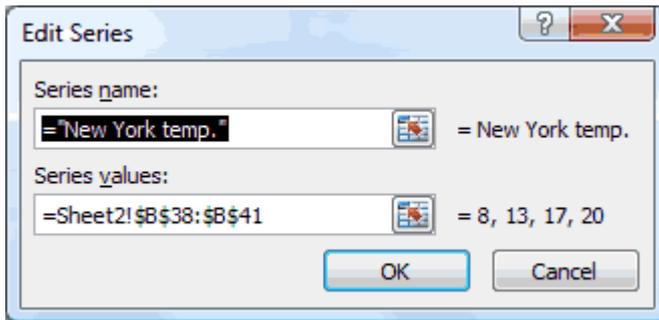
- If the field indicates a cell address, it is best to find the cell and translate its value.
- If the field displays something like =*"New York temp."*, you will need to modify it. The best way to do this is select all the text between double quotes and then type the translation over it. Be careful when pressing Left or Right keys because this inserts the address of the current cell.

See 'A word on formulas' for more information on working with formulas.

2. Select the series with the mouse or from the dropdown list in the *Current Selection* group on *Layout* and *Format* tabs. You will see a formula shown in the formula bar, e.g.:

=SERIES("New York temp.";Sheet1!$A$38:$A$41;Sheet1!$D$38:$D$41;3)

If the first parameter of the formula is not a cell address, you will need to edit the text between double quotes (shown in dark-red above), and click the green tick (✔) on the left to update the legend. To cancel your action, click the red cross (✖) on the left or press Cancel.

Note: the word SERIES in the formula may be localized in non-English versions of Microsoft Excel. The symbol that separates parameters in the formula (e.g. ";") may also be different.

Once you do this, the appropriate legend entry will be translated.

4. Translating category or value labels

Most probably, you will never have to translate labels along the X or Y axis. Even if such labels are used, they are mostly simple numbers. If you do come across textual axis labels, follow these guidelines to translate category / value labels in different versions of Microsoft Excel:

- *Excel 2003 and earlier:*

Select *Chart -> Source Data...* and click the *Series* tab. Check the field labelled '*Category (X) axis labels*' at the bottom of the dialogue:

  - If the formula in this field refers to a cell range (e.g. =*Sheet1!$A$1:$A$10*), find the range and translate it;
  - If the formula is an array formula (e.g. ={*"Jan", "Feb", "Mar" ,"Apr"*}), translate it, replacing the each piece of text between double quotes with translation.

- *Excel 2007 and later:*

Right-click the chart and choose *Select Data* from the dropdown menu, or click *Select Data* button in the *Data* group on the *Design* tab. In the *Select Data Source* dialogue, click *Edit* button on the right side of the dialogue to show *Axis Labels* dialogue.
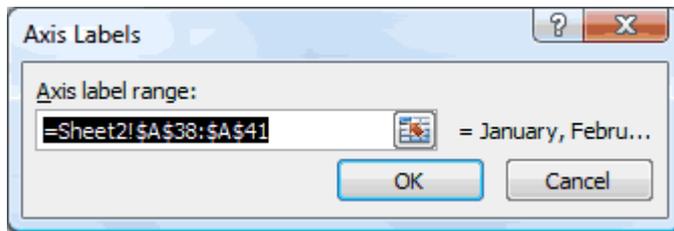
Check the formula in this dialogue:

- If the formula in this field refers to a cell range (e.g. =*Sheet1!$A$1:$A$10*), find the range and translate it;
- If the formula is an array formula (e.g. =*{"Jan", "Feb", "Mar" ,"Apr"}*), translate it, replacing each piece of text between double quotes with translation.

Formatting the chart

So, you have translated all the text on the chart. The final step is to format the chart so that your translation looks perfect.

To format the chart, you can change the size of the Plot Area, Legend, or Chart Area, or change the font size of some chart components like chart title, axis titles, etc. To select them, click them with the mouse, or select them from the drop-down list on the *Chart* toolbar [Excel 2003 and earlier] or from the drop-down list in the *Current Selection* group on *Layout* and *Format* tabs [Excel 2007 and later].

Here are some typical problems you may come across:

1. The legend will be too small to fit your translation. In this case, resize the legend. If there is not enough space for the resized legend, resize the plot area.
2. Chart title will be too big and it will overlap the plot area. In this case, just resize the plot area. If necessary, first resize the chart area.

Tip: make sure that you save the Excel spreadsheet before formatting the chart. In most cases, Excel will be able to undo only the most recent action.

Navigation complete

Congratulations on successful completion of this tutorial. I hope you can now translate Excel charts with confidence. You can also apply your knowledge in translation of charts prepared in OpenOffice Calc application.

To reinforce theory with practice, please use our sample spreadsheet which can be found in the Links & Resources section below.

Link: http://www.translatortools.net/articles/charts.html