

# Data Presentation using Excel

## Creating a Chart

In addition to creating models, spreadsheets provide facilities to display data graphically in *charts*.

The following exercises require the file WHSMITH.XLS which is available on-line. It displays some (fictional) turnover figures for a five year period between 2002-2006.

**Activity I:** Use a web browser to locate and download the file WHSMITH.XLS from Session 4 at [www.barryavery.com/blog/teaching/spreadsheet](http://www.barryavery.com/blog/teaching/spreadsheet)

Save the file in your area on the network and then open it in Excel.

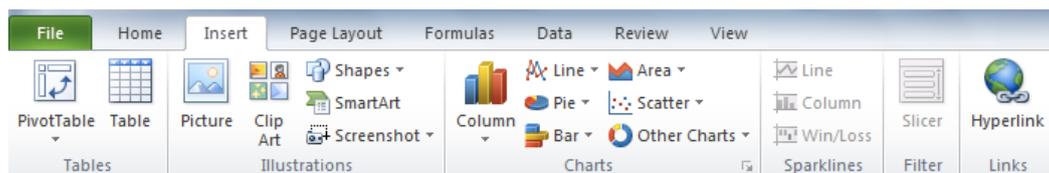
WHSmith generates revenue from three streams – *Retailing* (selling items on the high street), *Distribution* (distributing stock to small shops and businesses) and *DIY* (a DIY superstore chain). The totals (for retailing, distribution and DIY) are shown in bold *above* the breakdowns. Breakdown figures are only available for the years 2005 / 2006.

		2002	2003	2004	2005	2006
<b>W H SMITH - Extracts from Annual Reports</b>						
Turnover (UK & Europe) - £m						
		2002	2003	2004	2005	2006
	<b>Retailing</b>	1099.2	1184.6	1312.0	1287.0	1348.3
	Books				368.3	390.3
	Music				310.8	333.1
	News				171.5	182.5
	Greetings				168.7	175.7
	Video				109.8	126.4
	Other				157.9	140.3
	<b>Distribution</b>	777.7	838.2	905.9	961.0	1017.3
	News and Books				825.9	863.4
	Office Supplies				135.1	153.9
	<b>DIY</b>	252.2	214.2	209.8	194.4	192.2
	<b>Total</b>	2129.1	2237.0	2427.7	2442.4	2557.8

The standard way to create a chart in Excel is to follow a series of dialog boxes that define what data will be used as the basis of the chart and how it will be displayed.

The next stages will create a bar chart for the Total figures (cells C17 to G17) on the y-axis, plotted against the year (cells C4 to G4) on the x-axis.

To see the *Chart* panel, select the *Insert* tab from the ribbon



The next series of activities will create a vertical bar chart showing the overall sales figures, by year.

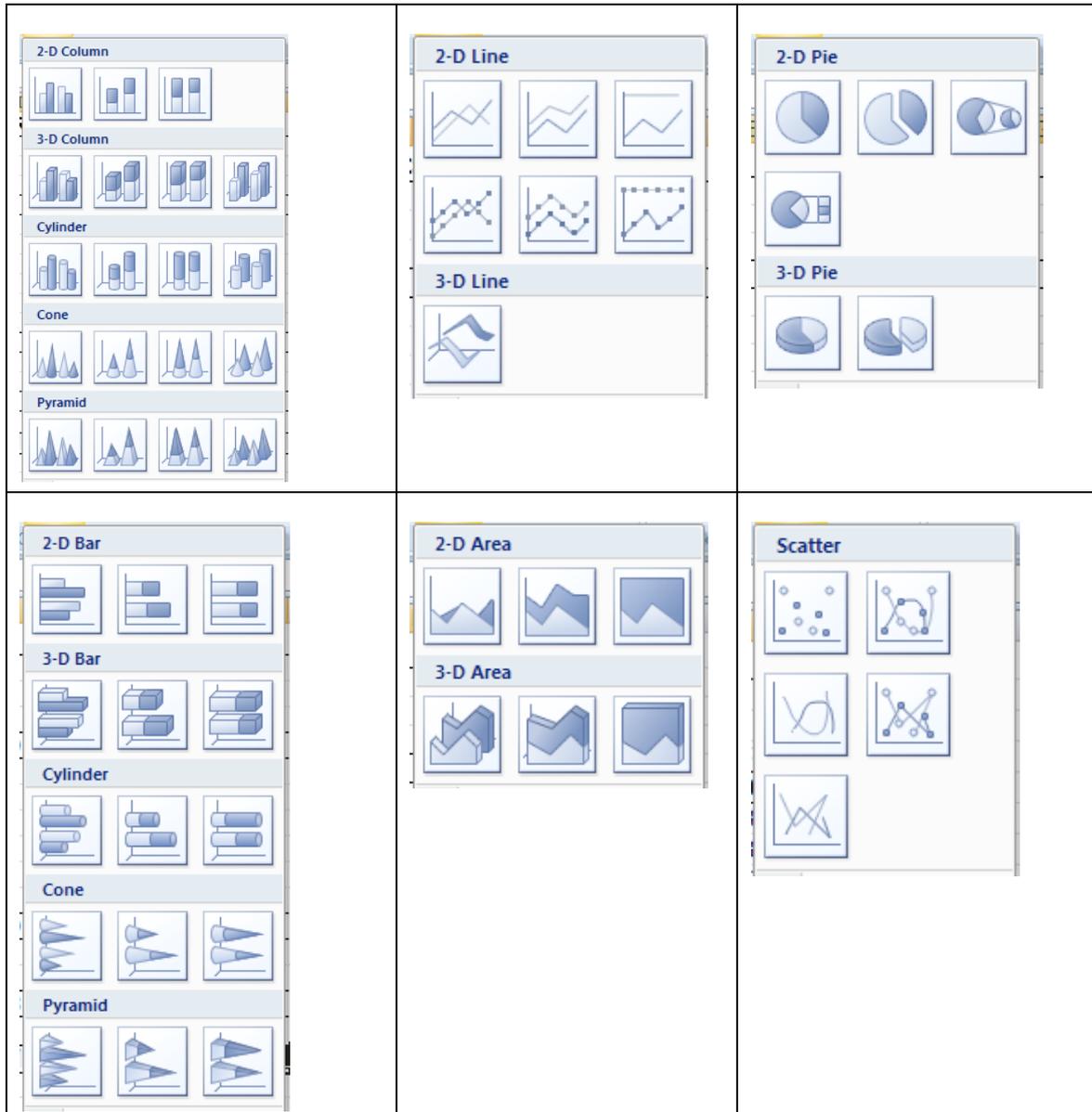
**Activity 2:** Important: BEFORE starting the chart creation process, ensure that the current selected cell(s) are the ones that will be used to create the chart.

Highlight the cells B17 .. G17

Select the Column icon in the Charts panel

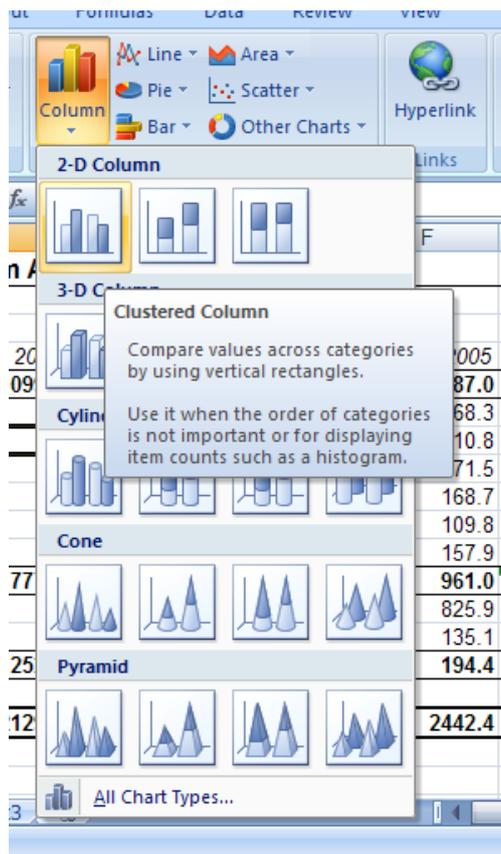


Each category of chart has a variety of different subtypes available – Vertical bar charts (here called *column* charts) can be 2D, 3D, Cylinder, Cone or Pyramid.

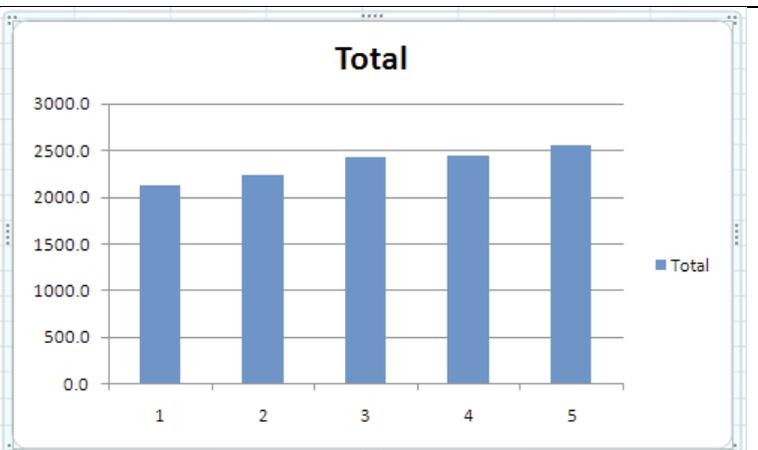


## Selecting a particular chart subtype

Hovering over a chart subtype provides a popup description



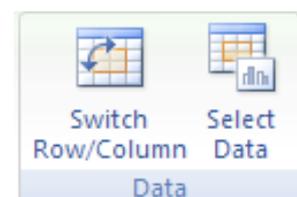
**Activity 3:** Pick Clustered Column from the 2-D Column selection



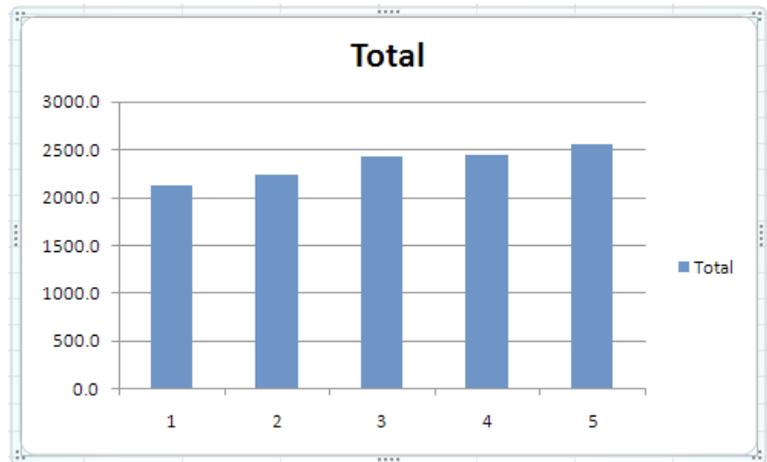
Excel 2010 attempts to separate specifying the data that a chart is based on away from changing the design of a chart (how it's presented).

### Changing the data settings

Excel will attempt a 'best guess' from the cells available. The *Data* panel allows customisation of the data that a chart is based on.

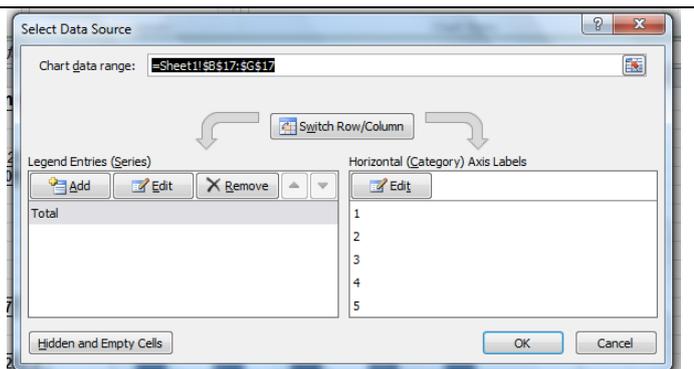


The Total sales chart would be better if the columns were correctly identified with the year

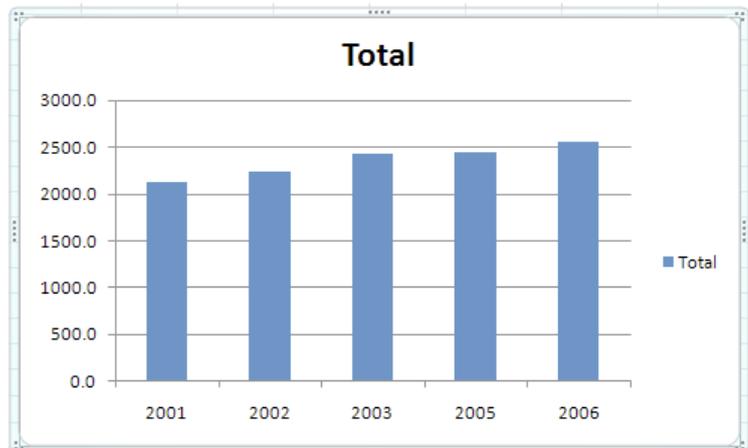


**Activity 4:** Single click on the chart to make the ribbon show the chart tools, then click on the *Select Data* icon on the *Chart Tools - Design* panel

The Horizontal (Category) Axis Label is wrong, so click the Edit button and add the cells containing the correct labels C4 .. G4

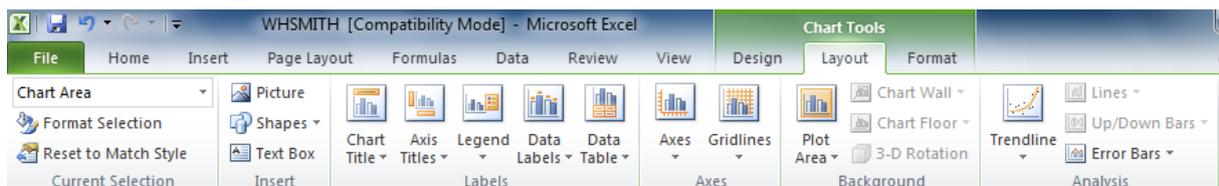


The correctly constructed chart should have sales numbers on the y-axis, with years on the x-axis.



### Customising the design of the chart

The *Layout* tab (under *Chart Tools*) reveals a number of panels that allow customisation of the design elements of the chart – *labels*, *axis* and *background design* can be changed through the appropriate icon.



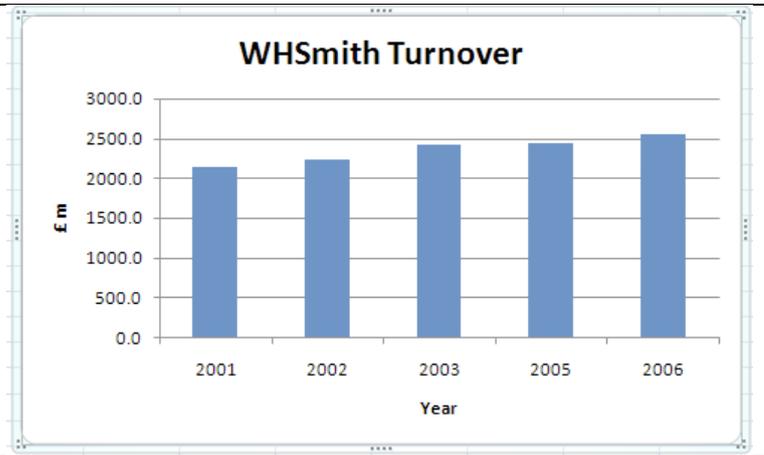
The *Layout* tab is only available when a chart is selected – single click on a chart to show the *Chart Tool* tabs if they are not available.

**Activity 5:** Use the *Axis Titles* icon to add a *primary horizontal* and *primary vertical axis title*.

To edit a title on the chart double click directly on the chart title.

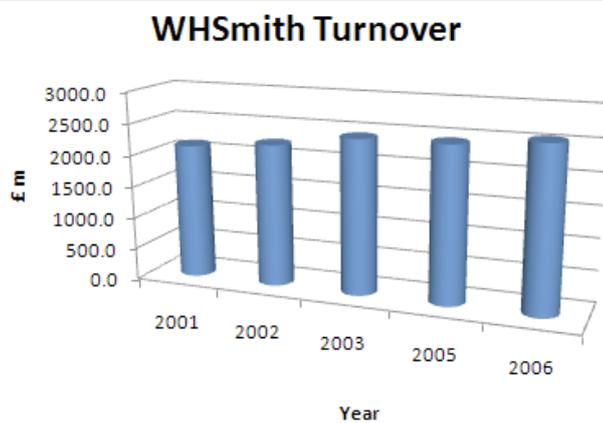
Change the titles to match the image on the right.

Select the Series name (on the right of the chart) and press the delete key to remove it.



The *type* of an existing chart can be changed using the *Chart Tools* ribbon items – single click the chart and choose *Chart Tools – Design* to see the *Change Chart Type* button

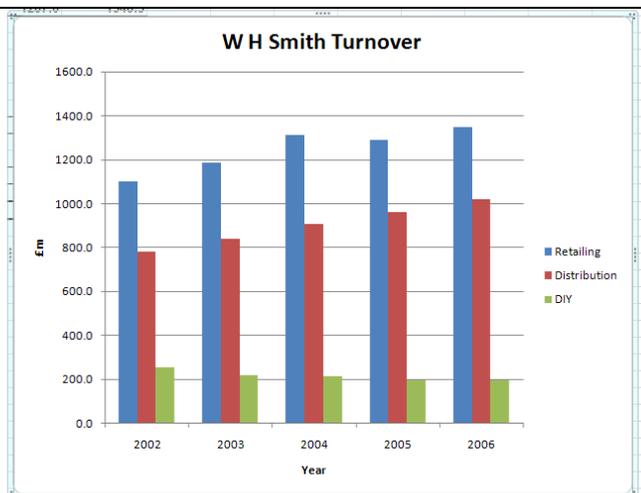
**Activity 6:** Use the *Change Chart Type* panel to change the chart type. Try the various 2D and 3D charts for this data set. Which ones are not appropriate for this data set?



**Activity 7:** Create a chart to illustrate **Retailing, Distribution** and **DIY** totals over the five-year period.

*Hints:* You can select multiple ranges before creating a graph by holding down the **Ctrl** key. Choose blocks B5 to G5, B12 to G12 and B15 to G15.

Add appropriate titles and investigate how the graph looks as a 'stacked' bar and 'line' graph.



Try switching the way Excel interprets the graph data from row to column by clicking the *Switch Row/Column* button in the *Design* tab options.

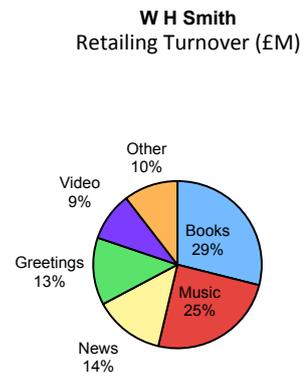
Can you switch the columns/row? Would it make sense?



**Activity 8:** Illustrate the breakdown of items in Retailing for 2006 as a Pie chart. Try to get as close to the design indicated as possible.

*Hint: Add the labels after creating the chart using the Chart Layout option*

Investigate 3D effects – can you see any problems with these?



**Activity 9:** Create a suitable bar chart to compare turnover in retailing items for 2005 and 2006.

**Activity 10:** Create a suitable chart to show total turnover for the five years.