



## Making Powerpoint slide shows smaller

Powerpoint offers many advantages over traditional slide presentations -flexibility, ease of transfer, slide re-use, sophisticated navigation, etc.

As we replace slide based presentations with electronic versions we are beginning to see other issues crop up. In this basic demonstration we will look at one way of reducing the electronic size of a Powerpoint slide show through reducing the amount of information held in the images or pictures stored in a Powerpoint show.

### Using photos and other images in Powerpoint

The images are what occupy the major part of this disk space. One way to reduce the size of the Powerpoint file, is to simply use *smaller* images.

### Resize those large images

Manual resizing of the images can be done using a variety of tools. The examples below are done using Adobe Photoshop.

The *Image ->Image size...* dialogue allows you to *resample* an image. Resampling involves interpolating pixel information from the original pixel data. In this case we want to reduce the number of pixels in each image. The smaller version of the image is the result of some clever averaging and interpolation of the original pixel data.

The size we are aiming for is measured in pixels and determined by balancing the requirements for the slide show. If the show is for screen or projector based viewing then pixel dimensions fitting into 800x600 through 1280x1024 pixel rectangles are useful.

If the intent is that the show is printed then the more pixels the better -it may be best to leave the images as they are.

Note the change in memory size (the numbers next to *Pixel Dimensions:*). Our smaller images occupy 25% or less memory (which equates to hard disk space or file size) when compared to the original files.

The *Document Size:* fields refer to the physical print size associated with the image. This size is a function of the number of pixels and the resolution. For the purposes of this demonstration we will ignore these numbers for now.

1280 pixels is the maximum width wanted, changing the vertical dimension to 1024 pixels would have resulted in an image width greater than this.

### Save as JPEG...

The format we choose for saving the new images will also affect the final file size of these images - Powerpoint essentially stores a copy of the image file within the slide show file.

The JPEG format which is probably the most commonly used image format on the internet is extremely good at compressing photographic material. It can reduce file sizes associated with images

considerably. Saving one of the raw images as a JPEG file without changing the number of pixels in the image brought the file size down to ~330KB, ~2.5% the size of the original file.

Simply saving an image as a JPEG file could be enough to make a Powerpoint show more *weirdy*. Our 100 slide Powerpoint show would still be ~21MB (big, but a lot better than 850MB). In combination with reducing the size of the images as we have done above, the 100 slide show could come down to 5-7MB.



### quality vs. compression

JPEG achieves compression by not storing some of the information contained in an image. JPEG stores some of the pixel data and enough information about the way this data varies through an image that the pixel data that is not stored can be reconstructed when the image is viewed. In part, JPEG relies on the human eye's tendency to see pattern, our own willingness to construct meaningful information from sometimes scrambled or scant visual cues.

The ratio of stored original information to reconstructed information determines the *quality* of the image. The more original data, the higher the quality.

At the highest quality setting a JPEG achieves compression at a similar level to a compressed TIFF file. As with a compressed TIFF, no image data is lost.

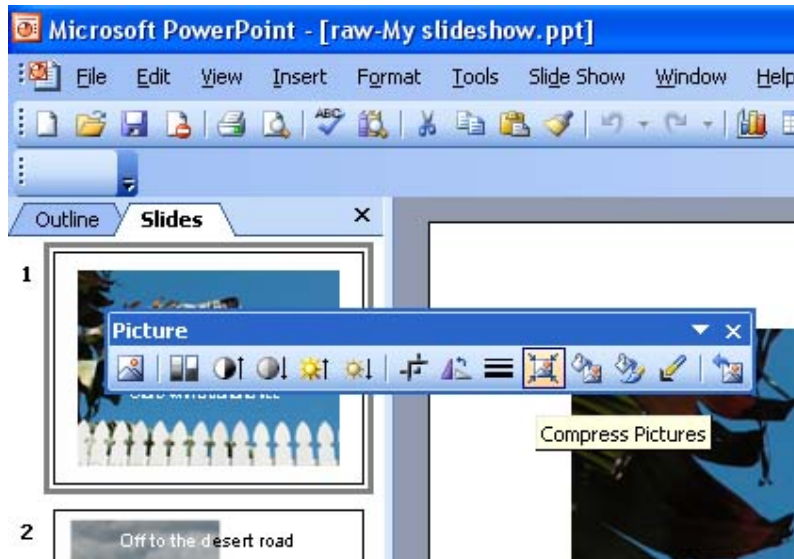
At the lowest quality setting, a JPEG image will show visible artifacts. These can detract from the meaningful content of the image and much detail will be obscured.

The medium setting (5 in the example above), is a good compromise, especially for photographic images. Any artifacts resulting from the JPEG compression technique will very likely not be visible when the image is viewed through a projector. When printed, these artifacts may be apparent, but the effect should not render an image unreadable. Current image printing devices know how to handle JPEG content and have automatic photographic smoothing processes designed to reduce the impact of JPEG compression.

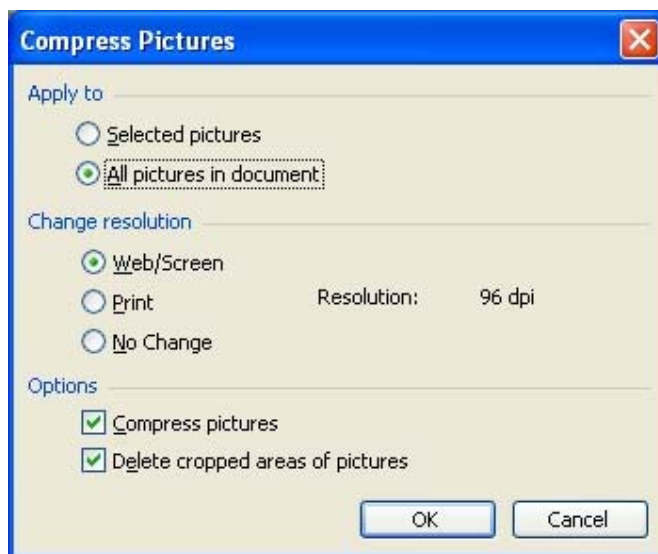
If you are resampling line drawings or diagrams (non-photographic content) such as Excel graphs, Visio flowcharts, etc. Then it would pay to use a higher quality setting (8+ or high). JPEG compression artifacts are more readily visible in this sort of image. Fortunately, this sort of image generally compresses extremely well in TIFF, so higher quality settings would not normally affect file size adversely.

### Powerpoint 2003 -compress pictures

A tool for doing this same trick is built into Powerpoint!



When you select a placed image in a powerpoint slideshow, the image/picture toolbar appears. Among the various functions available is a tool called *compress pictures*.



You are given the option to *compress* particular pictures (ones you have selected), or all pictures in the document you are editing.

You are also offered three *resolution* options. *No change* means that the density of information (the resolution) in the images you have chosen to *compress* will remain as it was when you imported them. *Print* resolution will *resample* the affected images to 200dpi. An image that fills an A4 landscape page will have a dimension of ~2200 pixels wide. *Resampling* means changing the number of pixels in the image.

The *Web/Screen* setting will resample the images to 96dpi. This will reduce the dimension of an image that fills a landscape A4 page to ~1000 pixels.

The checkboxes at the bottom of this dialogue give you the option to switch off resampling and to delete image content that has been *cropped* (ie. stuff you have chosen not to display using the cropping tool). If you want your images resampled, make sure the *compress pictures* item is ticked.

See [Resolution: definition of the term as used by APPFAiT](#) for more information on resolution.



Removing information (what you are doing by compressing the pictures in your Powerpoint document) will of course affect the final quality of the image stored in the Powerpoint document. There is nothing stopping you maintaining several copies of any Powerpoint document designed for different applications. Your *master copy* would hold the original images in their raw form, and when you make changes to this document, you can use "save as..." to create other copies that you can compress images in.

### Let's compare file sizes

raw-ruapehu.tif	14,479 KB	Microsoft Office Do...
raw-My slideshow.ppt	17,179 KB	Microsoft PowerPoi...
raw-bananas.tif	14,474 KB	Microsoft Office Do...
jpg-ruapehu.jpg	48 KB	JPEG Image
jpg-My slideshow.ppt	199 KB	Microsoft PowerPoi...
jpg-bananas.jpg	112 KB	JPEG Image
compressed-My slideshow.ppt	105 KB	Microsoft PowerPoi...

The Powerpoint documents are the things you need to carry around -the TIFF and JPEG files listed above are embedded in the respective PPT file. I have included them here to show how the size of the image files relates to the final size of the slide show.

The files highlighted in yellow are those associated with the raw images. Powerpoint has applied some kind of *zip* process to the images to bring the slide show size down to something well below the combined sizes of the image files.

The un-highlighted files are those associated with the manual resampling process discussed above. The Powerpoint slide show is not much bigger than the combined size of the JPEG files.

The file highlighted in cyan is the result of using the *Web/Screen* resolution setting for the *compress pictures* tool applied to the slide show containing the raw images. It is slightly smaller than the file created using the manual resampling process -and much easier to do