PRINT JARGON BUSTING – RESOLUTION

A common issue with printing can be pixelation, a term used when images look 'blocky' or 'fuzzy'. At Print and Mail Runner we are dedicated and determined to making ordering print as easy and straight forward as possible. The following information should help you understand the concept of resolution for printing and what exactly **dpi** (dots per inch) or **ppi** (pixels per inch) mean.

From here you should be able to jump to the correct section for fixing your document. Please note that this information explains how to fix many different document formats, only one of which may be applicable to your case.
Please note – this is a simplified guide and not a technical explanation. If you would like more information please do not hesitate to contact by phone on: **0191 580 2031** or e-mail: hello@pm-runner.co.uk.

The following information will cover the following areas:
- Basic explanation of resolution and why we require high resolution documents for printing.
- How to check the resolution of a document
- How to create high resolution documents from commonly used software

Basic Explanation of Resolution
One of the questions we are commonly asked is "it looks fine on screen, why won't it be ok to print?" The technical answer to this is that a screen will only display a document at 72dpi where when printed you will see 300dpi. Dpi (or ppi) stands for dots per inch or pixels per inch. Generally, images and graphics are made up from small dots (pixels), dpi refers to the number of these dots per inch. An image made from dots is called a raster image. There is another format called vectors, these are graphics made from equations and will never distort at any size. Raster images are usually fine for smaller format printing such as business cards, leaflets, booklets and business stationery etc. Whereas vectored images are suited for large format printing such as posters, banners and exhibition stands, this is because they retain their integrity no matter what size they are blown up to.

Example

While it's not particularly easy to show the differences online, below is an example of the same body of text saved at 72dpi and 300dpi resolution and then scaled to the same height. As you'll see on the left example, this has required upscaling, which has resulted in pixelation.
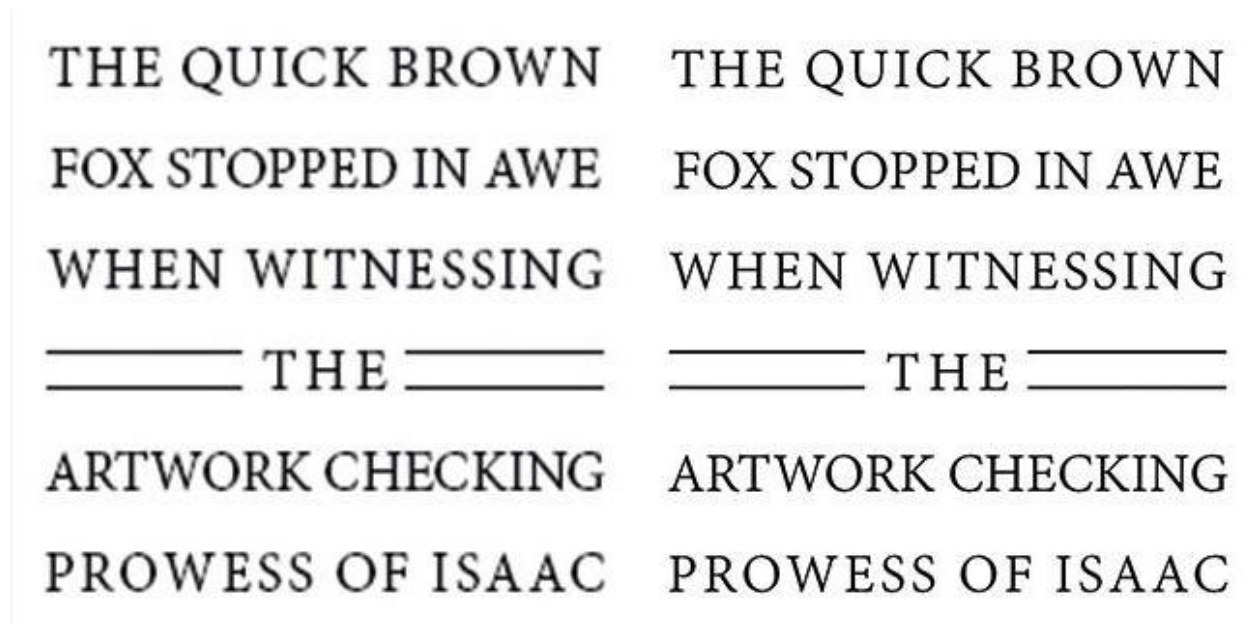
Looking at the example above it is possible to see that the 72dpi text (left hand side) will appear distorted when printed where the 300dpi example will appear clear. The distortion on the 72dpi text is called pixelation. **! Important !** It is technically impossible to increase the resolution of an image – to improve it you will need to go back to the software that you have used to create the design.

How to check the resolution of a document

Rule of thumb – the simplest and quickest way to check the resolution of a document is to view the image on a screen at three to four times the final size that it will be printed.

e.g. when viewing a pdf if you zoom into 400% it will give you a good idea of the level of detail visible when printed. The reason for this is that a screen will display the image at 72-100dpi where when printed you will be able to see up to 300dpi. 300 dots / pixels per inch is equivalent to 118 pixels per centimetre. Using this we are able to determine the correct dimensions for a document in pixels.

The table below is based on printing a portrait document at 300 pixels per inch which will give a high-quality result. When measuring a digital image there is no defined size in cm or inches, this is determined by the dpi. For example, an image that is 1748 x 1240 pixels would be A6 size at 300dpi or A4 size at 150dpi. (An A4 document is twice the height and twice the width of an A6)

Size Name	Size in cm (without bleed area)	Size in pixels 300dpi (without bleed area)	Size in cm (with bleed area)	Size in pixels 300dpi (with bleed area)
Business Card	8.5 x 5.5 cm	1004 x 650	9.1 x 6.1 cm	1075 x 720
DL / Comp Slip	9.9 x 21.0 cm	1169 x 2480	10.5 x 21.6 cm	1240 x 2551
A6	14.8 x 10.5 cm	1748 x 1240	15.4 x 11.1 cm	1819 x 1311
A5	21.0 x 14.8 cm	2480 x 1748	21.6 x 15.4 cm	2551 x 1819
A4	29.7 x 21.0 cm	3508 x 2480	30.3 x 21.6 cm	3579 x 2551
A3	42.0 x 29.7 cm	4961 x 3605	42.6 x 30.3 cm	5031 x 3579
A2	59.4 x 42.0 cm	7016 x 4961	60.0 x 42.6 cm	7087 x 5031
A1	84.1 x 59.4 cm	9933 x 7016	84.7 x 60.0 cm	10004 x 7087
A0	118.9 x 84.1 cm	14043 x 9933	119.5 x 84.7 cm	14114 x 10004

How to create high resolution documents (or fix documents)
Normally a document will fit into one of three categories. By using the 400% rule of thumb you should be able to identify which category your document fits into.
a. Certain parts of the document are low resolution
b. Part of the document is vectored and the rest is low resolution
c. The whole document is low resolution

Certain parts of the document are low resolution……
Replace
The best solution is to replace the offending logos / picture with one that is a higher resolution or vectored. If you're looking for better resolution logo files good places to check are your web designer, any old proofs from printers and electronic versions of corporate documents that have been professionally produced. High quality photos can be purchased from stock photography websites such as iStockphoto or Shutterstock. If you want more info or help with this – please get in touch.

Rebuild
This is by far the most complex & expensive option; pictures unfortunately cannot normally be rebuilt. With logos it is often possible to rebuild, however it is notoriously expensive as it requires a lot of design time. If this is your only option, we will be happy to provide a quote.

Risk it
We can print your artwork as it is. Obviously, we would strongly recommend not doing this.

Part of the document is vectored and the rest is low resolution……
This problem suggests that the settings in the software that you have used to create the document are incorrect and are reducing the quality of the document content when saving as a jpeg or pdf. Common examples of this are having the export settings in an InDesign document incorrectly configured or saving directly to a pdf from a word document.

Solution
Generally, this problem can be solved simply by changing the options given when saving to a pdf or jpg image. The resolution options should always be set to a minimum of 300dpi and if you are given compression options these should be set to maximum. If you are unsure of where you can find these settings, please just get in touch and we will help guide you through. If when checking the images in your chosen design software using the 4x zoom rule of thumb the images appear to be low resolution refer to the previous section - "certain parts of the document are low resolution"

We can provide a full design service from advising on and fixing artwork issues to make your artwork print ready to a full 'from concept' creative and design service. Our studio is charged out in 15-minute slots, so you only pay for the time you use. And remember the best way to keep design costs to a minimum is to provide as detailed and complete specification of what you require. We will always provide you with an estimate of the studio time we reckon a job or project will take prior to starting any work so you are aware of the costs upfront which helps with budgeting and avoids any nasty surprises.

If you would like any further help or advice please do not hesitate to contact us on: **0191 580 2031** or e-mail: hello@pm-runner.co.uk.