What Exactly is Digital Image Workflow?

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Over the past ten years photography has not only undergone a huge technological change but also something of a cultural change, with many of the established methods of production that had been developed and refined over the last century becoming mostly obsolete. The digital revolution has brought with it a relatively new concept: the digital image workflow. Amid the proliferation of software programs aimed at managing digital images, is there such a thing as "the right digital image workflow"? And if there is, how do you go about finding it?

Digital Image Databases

When digital cameras first began to make a serious impression in professional photography there was much talk about digital image databases. This was only natural; suddenly we were able to create vast numbers of images that needed filing in a way that also made them easily retrievable. The filing systems of the past were very obviously obsolete. You can't exactly hold a disc of image files up to a light box to find the one you were interested in. New methods of filing, cataloguing, searching and retrieving were needed and the image database suppliers were not slow to recognize the opportunity.

Digital image databases had established themselves with the library community long before the digital camera became the professional's instrument of choice. The development of the personal computer and the advent of the World Wide Web provided the curators of image collections with the opportunity to profit, financially or academically, from their assets. It was natural that when photographers began to generate large numbers of digital photographs, image database manufacturers would move into this market and sell directly to the image makers as well as the libraries.

However, since that initial focus on cataloguing, digital cameras and the programs supporting image handling have blossomed, leading to the development of a new concept: the digital image workflow. Both cameras and software programs have played their part in the birth of this concept; cameras through the development of file formats, including raw, and software through the blurring of traditional roles within the world of photography, print and publishing.

'Camera Raw'

Photographers have always liked the idea of extending the basic 'given' ingredients of photography. But when high-end digital cameras first made their appearance there was little the photographer could do at the camera end other than work with what they were provided by the manufacturer. So advances made with the 'camera raw' format were bound to find favour with some photographers. It is analogous to the concept of the Zone System in traditional film.

Originally the idea of American photographer Ansel Adams, the Zone System dispensed with the film speed and processing times provided by the manufacturer, instead, through a series of experiments, the photographer developed their own 'normal' settings for a given camera and lens combination. This was then enhanced through further testing to be adaptable in different lighting conditions, thus allowing the photographer full control of their image making process. Camera exposures were calculated on capturing shadow detail, while control of highlight detail lay in selecting an appropriate processing time recording the highlight at a particular tonal point in the print. The result, in the hands of an expert like Ansel Adams, was beautifully detailed black and white prints with spectacular tonal range. While Adams' scientific approach might not have suited the jobbing photographer on the local paper, most professionals working with black and white manipulated the processes to some extent, rarely following the manufacturer's printed guidelines to the letter.

For those of us working with colour transparency material, pulling and pushing the E6 process was not routine practice (although it did go on) but we did have a wide range of film types from different manufacturers, with varying film speed, colour saturation and tonal range to choose from. In my day job, as a medical photographer, I chose Kodak Ektachrome EPN 100D for its subtle skin tone reproduction, while in my art practice as a landscape photographer, 50-ISO Fujichrome Velvia was

preferred for its vibrant colour reproduction, particularly in the greens. Tried and tested film selection was also supplemented with careful exposure calculations, tight lighting ratios and subtle colour correction filters. Exposures and lighting ratios were often checked with Polaroid before committing to film, all in search of the perfect transparency that would reproduce accurately in the final printed publication.

Initially it was difficult to take this level of professional adaptation into digital photography. The early cameras may have had the capacity to capture in raw format but in-camera file handling was slow (15 seconds to write one image to the card in the original Nikon D1) and dedicated post-production software was limited. However, as the technology has advanced, the demand from professionals has increased to a level where manufacturers have had to develop their products to meet this increasing technical expectation. The current range of professional Nikon cameras includes options to capture as, TIFF, JPEG (at various compressions) and Nikon's own raw format, NEF (Nikon Electronic Format), or even a simultaneous combination of these formats. This has encouraged photographers to engage with the technology in the way they had previously with black and white film and the Zone System.

'Digital Image Workflow'

This enthusiasm for raw formats has been picked up on by software manufacturers. While Adobe Photoshop™ remains the pre-eminent creative digital imaging software package, new programs have been launched, directed specifically at the digital photographer, providing effectively a 'digital darkroom'. These programs, Adobe's Photoshop Lightroom™ and Apple's Aperture™, bring together all the essential elements a photographer needs to manage their images, i.e. developing, processing, printing and cataloguing, thus creating all-in-one digital image workflow solutions.

However, digital image workflow, in professional terms, can be more complex than simply deciding between raw format or JPEG, Photoshop or Aperture. Digital photography and the development of programs like Adobe Photoshop are changing the way images are handled in the world of printing and publishing. In the good-old-days of film, the photographer's job finished when they handed the print or transparency over to the editor, art director or client. From there it might go to a pre-press processing house or directly to the offset printers to be made into plates for printing. The advent of digital imaging has made it possible for this traditional workflow to be replaced and for the photographer themselves to be, in effect, preparing their images for print. Yet how many of us understand the mysterious world of CMYK, dot-gain, and the other subtleties of the offset printing process.

Added to this, those simple days of output as print or transparency are also a distant memory. Output in the 21st century can be as print, CD, DVD, via email or FTP, via the web in HTML pages, in flash players or direct to the client desktop through browsers on the internet or intranet, with all the associated issues of resolution, colour space, file size and format.

What Is The Right Digital Workflow?

Should I always be working with raw camera formats? Is in-camera-JPEG still an acceptable route? How should I be archiving my images? And should I be outputting in CMYK at 400dpi?

There is no one right digital image workflow. Choosing the right combination for all the options currently available depends on your individual situation, who you are working for and what their requirements are. The right digital workflow is the one that provides your clients with the most effective image in the most efficient way. It is perfectly possible to create a workflow that may be effective in producing quality images but is inefficient as far as meeting the client's requirements. It is also quite possible to create one which meets efficiency targets but at the expense of quality. Balancing effectiveness with efficiency, from the client's perspective, is the key to locking down the right digital workflow.

If the client's need is for high volume with a fast turn-round, a raw workflow may be a luxury you cannot afford. A carefully configured, in-camera-JPEG workflow may be the right solution here. However, if the emphasis is on high quality, without pressing deadlines, and where longevity and future sales from stock could be important, a raw workflow would seem the most appropriate. Whichever solution fits, the workflow has to go all the way through from capture to client. It has to consider the set-up of the cameras, the image handling, processing, storage and retrieval, and it has to consider output, including colour profiling and monitor calibration all the way through to the client end.

Conclusion

All the technological developments that have taken place over the past ten to fifteen years have created challenges and opportunities for professional photographers. It might be useful to see a period of stabilization over the next few years, during which time we would have the opportunity to explore the medium without constantly looking over our shoulders to see what might be coming to alter our work practices. But in our competitive, ever-changing world, driven to a large extent by sales through product development, that may be wishful thinking.

However, what is important in all this technological and cultural change, is keeping sight of what photography really is. We are communicators. It doesn't matter whether it is on film or digital, print or screen, we capture light on a sensitive material, creating an image that communicates the visual essence of the subject to another individual or individual; without that, digital image workflow means nothing.

Further Reading

Universal Photographic Digital Imaging Guidelines: www.updig.com

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