1 What Is All This DAM Stuff?

When I first heard about digital asset management (DAM), my reaction was similar to when I first heard about color management—I could see why the end product would be valuable, but the road to get there seemed incomprehensible. There was a jargon that sounded like English, but I'd never really heard those words strung together in that way. There was also hardware and software to be cobbled together, and it looked like it would be pretty expensive and brain-bending to do this correctly.

Eventually, as I got more familiar with the concepts, and as the tools got better, my impression of color management changed from "It's an inscrutable mystery" to "It works very well most of the time." And so it can be with digital asset management: the tools have finally come of age, and the concepts you need to familiarize yourself with are right here in this book. There's even a pretty well-defined recipe here for taking images from the camera to, well, the grave and beyond.

NOTE

Even if you have not yet mastered color management, you still need to work on digital asset management. Ensuring the integrity and survival of your image files—along with an efficient workflow—should be the first order of business for the digital photographer.

Figure 1-1. Digital asset management is no longer an inscrutable mystery. **Keywords:** Halloween, Haunted House, Blue Witch, Witchcraft, Woman, Mystery

It's Like Color Management, Only Different

The analogy between color management and digital asset management can be taken further. For example, one of the hardest parts of learning color management for me was figuring out what things to let go of. Certain practices, like "just making my monitor match my printer," seemed intuitive, and they seemed to work just fine. Fortunately, I was soon instructed that this was a shortsighted strategy—my images needed to be sent to other people's computers, and the settings might not match. I needed to start conforming to universal standards for images. If you are a professional, it's imperative that your images take advantage of these standards. Even if you are not a professional, it's likely that your images will also end up on other people's computers, and integrated DAM will help everyone keep track of the pictures.

It was also pointed out to me that settings that worked well in my existing closed-loop system might not be good settings for my future equipment. By adopting universal best practices, I could maximize the value—both personal and artistic—of the work I do with my image files. (In fact, it turned out that the un-color-managed images I created back then are of significantly less value to me now. The color on some of those files is nearly unusable.)

If you are using poor asset management techniques, you may find at some point in the future that your images are a thoroughly disorganized mess. Worse yet, you may find that many of them are lost. It's time to do something about that.

Help Is Here

Adobe Bridge, Camera Raw 3, the new IPTC tools, the Digital Negative (DNG) file format, and cataloging software can bring to integrated digital asset management the same coherence that ICC workflow brought to color management. DAM can become something that is not yet totally automatic, but no longer requires a PhD in computer science. As a matter of fact, a photographer can use these tools to make digital photography much more productive than film-based photography ever could be.

This chapter provides an overview of the entire DAM system, to try to get you thinking big. In later chapters, we'll examine the nuts and bolts of building, operating, and upgrading an integrated DAM computer system.

Do I Really Have to Do That?

There will undoubtedly be practices or theories presented in this book that will make you say to yourself, "Oh, darn. It would take me a lot of work to change from what I'm currently doing to Peter's system." I strongly suggest that you make a note of this caution, set it aside for the moment, and keep on reading.

If your goal is the construction and maintenance of a long-term photographic archive, you are probably going to have to make at least *some* changes to how you do things. It may turn out that it's best to make a clean break from your current practices. Once you have the entire new workflow settled, you can then bring your older material in line with the new way of doing things. With that in mind, let's get started.

What Is Digital Asset Management?

The term "digital asset management" refers to the protocol for downloading, renaming, backing up, rating, grouping, archiving, optimizing, maintaining, thinning, and exporting files. It covers a lot of ground.

In the world of digital photography specifically, DAM refers to the entire process that occurs after the taking of the picture, through final output, and on to permanent storage. You may not realize it, but if you are shooting or scanning digital photographs, you are practicing some form of digital asset management. The question is, are you using your time and your resources wisely?

Your DAM system is fundamental to the way your images are known, both to you and to everyone else. Can you find your pictures when you need them, or are they sitting unseen on a hard drive or in a file cabinet? Are you able to easily assign and track important content data? Do your photos carry your copyright and contact information, or are they floating around

the marketplace with no controls whatsoever? Among other things, DAM practice defines the way in which your pictures are brought to the world.

There are a number of principles that should apply to any DAM system that you implement, regardless of which software and hardware you use. If you understand these principles, you can create a system that will grow with you, and let you get the most from your photographs. Ultimately, a DAM system should be designed for speed and efficiency, as well as longevity. In this book, I'll present just such a system.

An Overview of the DAM System

A sound DAM system comprises several interrelated components. These include a naming and filing protocol, a storage medium (including backup), organizational tools, and editing and output tools. The integration of these subsystems enables a comprehensive approach to sorting and working with your collection of images as a whole. Think "Omniscient Puppetmaster"—you know where everything is, and you can control it from a single place (Figure 1-2).

Figure 1-2. You no longer need a dedicated control center to manage even terabytes of images. **Keywords:** NOC, Network Operating Center, Network Operations Center, Television Production, Control Room

Perhaps the most useful feature of sound DAM practice is that it enables you to make better use of the work that you already do anyway. Inevitably, you are doing some kind of sorting and some kind of evaluation of the quality of your photos. In this book, you'll see how you can use a set of tools to make that work go faster, and also save that work to reference in the future. By implementing an integrated workflow, you will be better able to leverage your work, reduce inefficiencies, and gain full value from everything you do to your pictures.

Rules of Sound Digital Asset Management

Some of you will adopt the exact nuts and bolts of my system wholesale; for others, it will be important to adjust the system to reflect your different needs. In any case, there *are* fundamental principles at work that everyone can take advantage of:

Figure 1-3. **Keywords**: Jobs, Figures, Arts, Music, Dance, Silhouettes

Systematize

One of the most common mistakes that photographers make when building digital archives is the use of a hodgepodge of DAM practices. Of course, your system will change over time, as you get smarter about digital technology, as your tools change, and as your collection grows. It's important, however, to bring work done under older protocols in line with your new techniques. If you leave lots of work organized in different ways, you won't be able to leverage its value fully, and you risk being unable to ensure its integrity over time. My system will provide an excellent framework for the systematization of your DAM.

Don't rely on your memory

Humans have a wonderful ability both to remember and to forget. For example, although my kids are now only 10 and 11, it seems long ago that they were infants. At that time, I felt like I would never forget the details of their early daily lives. Only a few years later, all those details are now a fuzzy half-memory.

I have had photographers tell me that they don't need a DAM system because they can remember everything: the entire contents of their collections, where all the pictures are stored, and what each version was created for. Realistically, though, not only are you unlikely to be able to remember *all* of the details (especially as your practice changes over time), but if you try to do so you will be missing out on many of the benefits that a catalog-driven DAM system offers.

The content information that is collected about photographs in a DAM catalog can be useful for many things, and to many people. It can help you efficiently find photos when you want them. It can help your clients conform to their licenses, and it can help to automate the marketing and distribution of images. It can also help family, friends, or business associates locate and identify pictures if you're not around to help.

Figure 1-4. Sometimes the whole is greater than the sum of its parts: images can be more valuable if they are part of a collection. **Keywords:** Halloween, Fireman, Haunted Trail, Alter Ego, Secret Life

Be comprehensive

The more universal your cataloging structures and practices are, the more value and efficiency you can get from your images. (DAM systems have a particular ability to add value to a collection as a whole.) Consistency of organization enables faster and more reliable searching of your collection, and collecting together related images maximizes the value of each individual image. A collection of visionary landscapes, for instance, has a greater value than an equally visionary collection of images that do not share a subject or any stylistic elements.

Build for the future

The most obvious ramifications of this principle have to do with storage, longevity, and scalability. Computers have been around long enough now that the challenges related to storage media are pretty well known. We *know* that we will have to migrate our files eventually, and that storage media can fail. We also can see that the amount of storage we will need will grow exponentially over time. It's important that a system be able to grow orders of magnitude larger without having to be completely restructured.

Do it once...

Here's where DAM can actually start aiding productivity immediately. It starts when you rate the files for quality and annotate them for content. By enabling you to quickly narrow down your search results to just the best and most appropriate images, it immediately streamlines the image preparation workflow.

Every time you identify characteristics of your images—from quality, to content, to usage—you add value. If you use integrated DAM tools to do this organizational work, you can save and reuse the valuable information that you have recorded.

Think of times that you have sorted images for one reason or another. Once you re-sort those images, all of your prior sorting work is lost.

DAM cataloging software, however, lets you sort into virtual sets, so that you can save a nearly infinite number of groupings of images. By using these virtual sets, you save search time and add value to your entire collection.

But don't overdo it

Once you see the control that good management gives you over your collection, you might find yourself going "DAM happy." You need to strike a balance between what's useful, and what's a waste of time. Noting who is in a photo is very useful; labeling each image "looking right" "looking center" or "looking left" is probably overkill. The methodology I present starts with the tasks that offer the highest return for your work, and gradually works down through less cost-effective tasks.

Figure 1-5 shows an overview of a DAM system. It might look daunting, but we'll cover each of the elements in this book.

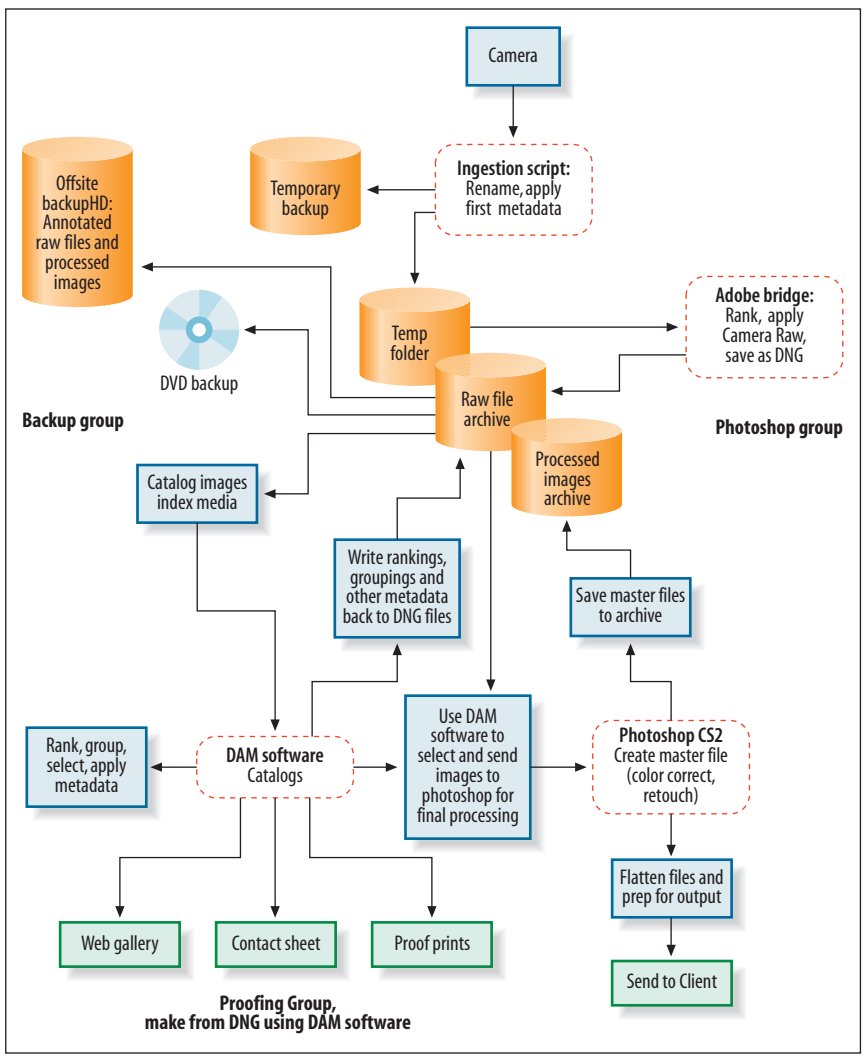

Figure 1-5. The DAM flowchart. (Hey, this is the simplified version. And if you had to make a flowchart of what you did for film and print handling, it would probably be just as complicated.)

Understanding Digital Asset Management Software

DAM software helps you sort, track, back up, convert, and archive your photographs. Its function is to store, view, control, and manipulate all the information you have collected about your photos, as well as the photos themselves.

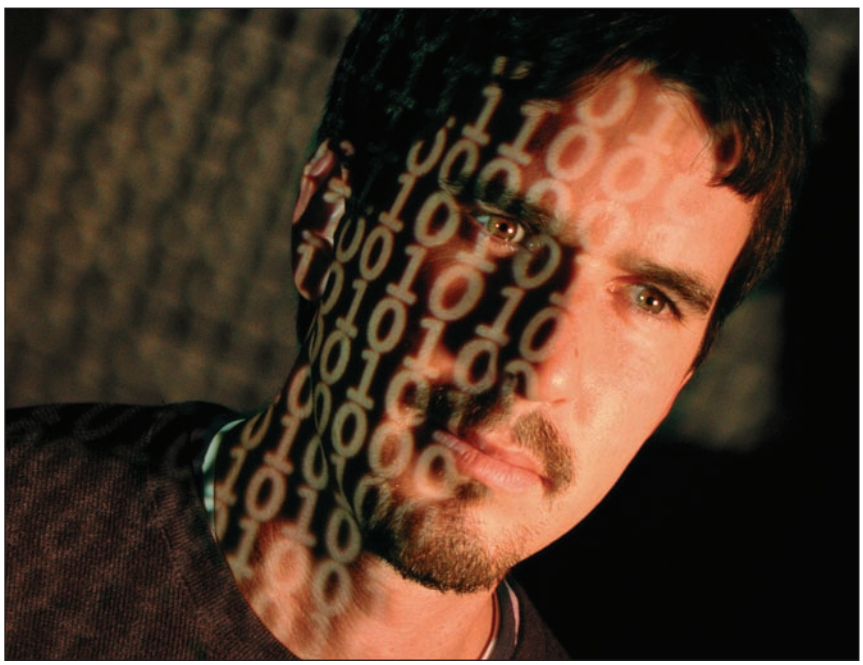

Figure 1-6. You have to get this digital stuff into your head. **Keywords:** Digital, Cyber, Virtual, Software, Programmer, Tech-head

Digital Asset Management Terminology

There are two primary types of DAM software: browsers and cataloging software. A *browser* reads information from a file but does not store it separately. *Cataloging software* stores information in its own separate file (bear in mind, however, that the software, and the catalog document it makes, are distinct from the photos themselves).

Over the life of your collection, you may end up using several different DAM applications, either sequentially or concurrently. For example, you might use Adobe Bridge to do initial sorting of your photos, but do your main, permanent cataloging in iView MediaPro, Canto Cumulus, or an enterprise-level application such as Telescope. And some years down the line, you may switch to another software package entirely to administer your catalog. It's important to remember that it is the information about your photographs, not the software you use or the catalog document itself, that is of real value.

NOTE

Throughout this book, I will be writing about both cataloging software and browsing software. I will use the term "cataloging software" whenever I am specifically referring to a program that makes a visible, namable, transferable catalog. I will use the term "browser" to refer to any DAM software that does not make a catalog, but rather indexes files on the fly. Whenever I use the terms "DAM software" or "DAM application," I am referring to both types of software.

Browsers versus cataloging software

At first, a browser and a cataloging application look similar. Each one can display multiple files, sort according to multiple criteria, and send off the files to be worked on. But behind the scenes, there is an important difference. A browser extracts data from the files on a more or less "real-time" basis and builds its utility around this information. (Figure 1-7 (left) shows a typical browser screen from Adobe Bridge. DAM cataloging software, however, keeps a permanent catalog of information about the images, including thumbnails. You can see a screenshot of my catalog documents themselves in Figure 1-7 (right).)

Figure 1-7. At first glance, there doesn't seem to be much difference between a browser (such as Bridge, on the left) and a catalog application (such as iView MediaPro, on the right).

Why is this difference between browser and cataloging applications important? The differences between the application types don't really become apparent until you have a large number of files to work with. Because cataloging software keeps the extracted information in a database, it has several important advantages over a browser:

It's DAM faster.

One thing cataloging software can do better than a browser is to return search results much faster. Because cataloging software keeps all the organizational information in a database document, it only needs to do a local search to find, for instance, all images with "Josie" written in the keywords. A browser may have to look through the keywords of 100,000 files stored on several different drives to return the same results. And if the software is structured to continually update the search results, it will be constantly reindexing this information.

It allows you to have virtual sets.

More important, however, is the ability of good cataloging software to create and keep *virtual sets*. Virtual sets are like folders that you keep images in, except that they all point to the same original file. This enables you to include an image as part of multiple sets without having to copy the file multiple times—for instance, the same file can live in the *Vacation* group, the *Grand Canyon* group, the *Pictures of Josie* group, the *Stock Photos* group, and the *Mom's Favorites* group.

The best of the cataloging applications will also let you organize your groups into groups (see Figure 1-8), so that, for example, within the *Personal Work* group is a subset called *Projects*, and within that is the *Bindlestiff Family Cirkus* group. This set of images can, in turn, be organized into *Everything*, *Select*, and *Web Page* groups. I call this organization *nested virtual sets*, and I think it's essential to good organization of your image files.

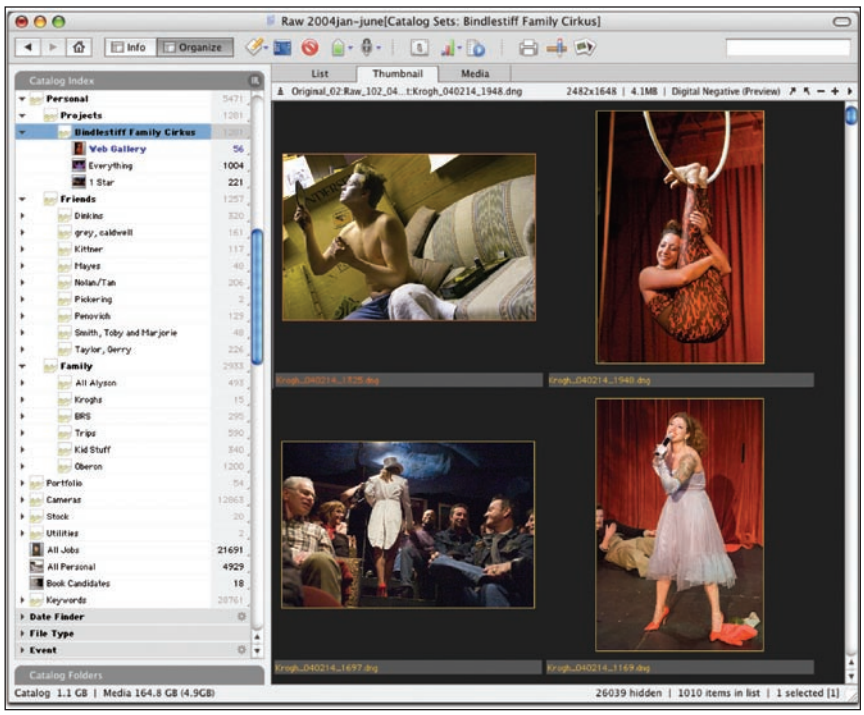

Figure 1-8. On the left side of this window, you see something that looks like a directory structure. These are not actual folders, but rather virtual sets. These can be used to keep track of images in many different ways.

It knows where stuff is supposed to be.

Another critical advantage of cataloging software is that it knows where files are supposed to be, it can assist you in keeping track of images that may have been erased, renamed, or moved accidentally. A cataloging application will be able to tell you that an image is missing and should be found or restored from your backup, while a browser will simply

omit the file. Cataloging software therefore helps you to truly *manage* your files.

It allows faster backup of important sorting work.

Cataloging software has a further advantage: it allows you to back up your valuable sorting work quickly and thoroughly. Because the cataloging application stores all the information in one place, it is easy to back up your work after every sorting session. If you are using a browser to do the sorting work, you will need to write a sorting term—a *keyword*—back into the original files themselves. You may then have a bunch of widely distributed files that you need to back up, if you want to be sure that you are saving this work. This adds quite a bit of time and complexity to the process of saving your work, compared to simply saving the catalog document. (Of course, as we'll discuss later, good cataloging software also enables you to write that sorting work back into the actual files when you want to.)

It allows you to work with offline images.

Finally, cataloging software can work with offline image files, such as images at a different location, or photos that are on disks that are not currently connected to your computer. This offline capability lets you, for instance, copy your catalog to your laptop and take it with you on a trip, in order to either work on it or show it to other people.

If I am traveling and expect to have some downtime in airports along the way, I often use this opportunity to catch up on my image organization without having to bring the actual files with me. The ability to work with offline images also lets me "spin down" several of my hard drives—particularly those with older work on them—and still be able to see the images in my catalog. This saves energy and increases the hard drives' lifespans.

Cataloging software has a lot going for it, but don't take this to mean that a browser is not valuable. The Bridge browser, particularly coupled with the new Camera Raw in CS2, is a powerful tool for the initial rating, bulk metadata entry, and image correction that should be done with any RAW files. Bridge is also helpful for finding images if the search will be confined to a small and known directory subset.

Adobe Bridge

Now that Adobe has integrated a multiple-file Camera Raw workflow with robust tagging and sorting capabilities in Bridge, the choice of a browser has effectively been narrowed to one. All of the workflow described herein will assume that you will be using Bridge as your image browser. Your choice of cataloging software is a little broader, depending on your specific needs. I'll first outline the functions that you want DAM applications to perform. In Chapter 7, we'll examine how to evaluate various software offerings.

You May Be Wondering...

Which Is Cataloging Software, and Which Is a Browser?

Here are a few lists to help you get your head around the difference between an image browser and cataloging software.

The following are browsers:

- Bridge
- Photomechanic
- Fotostation 4.5

And the following are cataloging applications:

- Canto Cumulus
- Extensis Portfolio
- iView Media Pro
- iMatch
- ACDSee
- Fotostation Pro5
- idImager

Photoshop CS and DAM Apps: What We Have Here Is a Failure to Communicate

If you have worked on RAW files in Photoshop CS and then tried to see that work in your cataloging application, you have probably experienced a communication breakdown. The browser in CS is an excellent application to sort images in, principally because it gives you a speedy, accurate, reasonably high-res preview to work with. When you try to access that work in another program, however, you find that nothing can read and make use of the work that CS does to RAW files.

This is because CS stores this work in the XMP sidecar files (or in its centralized cache), which no other applications can read. The missing element is a vector for the transfer of that information. Now that the editing tools in CS2 are even more powerful, a smooth interchange of data is critically important. As we will see later in this chapter, the DNG file format provides a vector that an increasing number of programs can both read and write to.

Figure 1-9. Adobe's Bridge is a great way to move your images into a permanent archive. **Keywords:** Landscape, Jobs, Oakland Bay Bridge, Traffic, San Francisco, Sunset

Communication between DAM applications

If you are using two or more DAM tools concurrently, it's critical that they be able to "talk" to each other—that is, that the work you do in one be fully usable by the other. Because the capabilities of the software are ever-changing, the only way to tell if two applications will play nicely with each other is to test them. Make changes to file information in one application, and see if they are visible in the other. In some cases neither application will be able to see the other's changes, in some cases the changes will be visible one direction but not the other, and in some cases both applications will be able to see each other's changes.

In this book, I use the DNG format (which we'll discuss in the next section) to enable work done in Bridge to be visible to other DAM applications. This is a key to RAW file workflow.

Benefits of the DNG Format and Digital Asset Management of RAW Files

If you are a RAW file photographer, you've probably encountered a number of DAM frustrations when working with your images. As a matter of fact, it is my belief that prior to the development of the DNG format, there was no truly sound way to work on and archive RAW files for permanent storage. Adobe's DNG file format has changed the way RAW files are handled, promising universal access to images and the information you create about them. Let's take a look at this revolutionary development.

Figure 1-10. **Keywords:** Jobs, John Waters, Library, PBS, Art21, Environmental Portrait

What's a RAW File?

Consumer-level digital cameras typically store the images they create only in the JPEG or TIFF file formats. These file formats are pretty much universal: they are *openly documented*, so software developers know how they are structured. The image data of the file, and the information the camera creates about the file, are generally written the same way inside the file.

Many of the better digital cameras can also write RAW files, in the NEF, CRW, ORF, RAF, and MRW file formats, among others. These RAW files store the data from the camera's sensor in a more or less unprocessed state. Generally, digital cameras only record one color per pixel sensor, and when these files get converted to a standard digital file, the rest of the color information is interpolated from surrounding pixels.

Each RAW format is actually a variation of TIFF, but each is slightly different. In fact, when produced by different model cameras, each of these RAW formats is also different from others of the same name—for example, a NEF file from a D100 is different from a NEF file from a D70.

Not only are these file formats constantly changing, but they are not openly documented. Every time a new camera model is introduced, the software developers must reverse-engineer the RAW file again (i.e., look at the data and decode how it is being stored).

The Benefits and Drawbacks of Shooting RAW

Because the RAW format stores the data from the camera sensor in a nearly unprocessed state, it offers the most versatility. If you want to change the color balance, or if you want to greatly enlarge the image, you will generally

get a better result by working from the original source data—that is, the RAW file. In this regard a RAW file is not unlike a traditional photograph, where the best print will be obtained from the original negative, rather than by copying a print made from the negative.

That said, the multitude of RAW file formats present several critical problems:

- Users of new camera models must wait until all the software they use has been updated to handle the new format.
- It can be dangerous for third-party applications to alter these undocumented formats.
- It may become difficult or impossible to open these files as time goes by—indeed, in the short life of digital photography, we have already seen manufacturers drop support for certain RAW file formats.
- Painstaking adjustments made to RAW files (color balance, brightness, etc.) by certain software may become unavailable once the manufacturer drops support for that software or file format.

Sometimes the solutions to these problems can be almost worse than the problems themselves. For example, because Adobe does not want to alter undocumented RAW files, they have chosen to use *sidecar files* when altering RAW files. A sidecar file is a small text file that contains the adjustments that you have made to the file and that lives in the same folder as the original file. So, if you increase the brightness of an image in Camera Raw, the original image file will not be altered, but the sidecar file will contain a small instruction to increase the brightness when the file is opened again in Camera Raw.

While sidecar files help Adobe to maintain file integrity for you, they throw up a huge roadblock if you want your cataloging software to be able to see and make use of any of the work you do in Photoshop. No cataloging software—or any other software that I am aware of—can use the information contained in a sidecar file.

Fortunately, there is now a solution to nearly all of these problems: DNG to the rescue!

DNG as a Workflow and Archiving Solution

Adobe developed the DNG format to address the drawbacks of using RAW files. DNG is an openly documented file format that can contain the RAW image data, plus lots of other useful stuff. You can convert your RAW files into DNG files and be confident that you are putting them into a good format for inclusion in a permanent archive.

You May Be Wondering...

Are You Saying to Never Use Sidecar Files?

No—what I am saying is that sidecar files are a poor tool for permanently archiving your RAW files. I believe that sidecar files are the preferred way to store adjustments of RAW files prior to conversion to DNG files. I'll go into exactly what sidecar files are, and how to create and manage them, in Chapter 5.

A digital job jacket

Although Adobe has named the format the Digital Negative, I prefer to think of it as a "digital job jacket." In fact, the DNG format is a wrapper that can contain all kinds of useful information about your file. Let's take a look at what can be stored there:

The negative

The DNG file can contain all the RAW image data that the camera puts into its own RAW file. This means that you can open a DNG file in Camera Raw *and have the full range of adjustment options that you had with the RAW file.*

Paperwork

Because the DNG format is openly documented, all sorts of metadata (discussed in the next chapter) can safely be written to the file, with no danger of it becoming unreadable or of corrupting the file.

A pretty good print

In the DNG file, you can store not only the "negative," but also a "print." Camera Raw can create a preview of the file that reflects all the adjustments you have made. Take a look at Figure 1-11. On the left is the original embedded preview (as created by the camera). On the right, the DNG shows up the way I've adjusted it in Camera Raw. You can correct the color, brightness, and contrast—even crop or apply a curve—and the resulting image will be stored inside the DNG file. This embedded preview can be of several sizes, including one that is the full dimension of the RAW file. We'll look at how this "pretty good print" can be useful in Chapter 8.

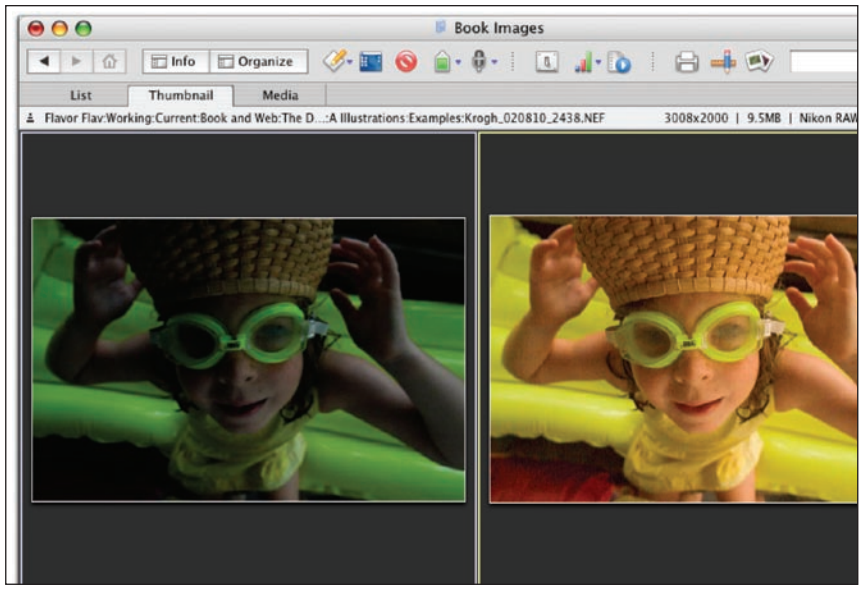

Figure 1-11. One of the best benefits of using the DNG format is that it enables you to embed an accurate preview into the file.

Private maker notes

If a camera manufacturer comes up with a new way to process a file, and they wish to keep the details secret, they can encrypt this information into the DNG file. Thus, DNG files can be universally accessible, while at the same time offering manufacturers protection for their proprietary image-processing algorithms. This will be useful as more manufacturers let users choose DNG as a RAW file format to be produced straight out of the camera.

Undocumented maker notes

Version 3.1 of Camera Raw (and the freestanding DNG converter) will copy the undocumented maker notes to the DNG file. While Camera Raw cannot make use of this information at the present time, it saves it for a day when camera manufacturers will embrace DNG as a solution for file storage, or for a day when third-party software can decrypt this information. (Because this is undocumented information, the full integrity of these maker notes is not absolutely guaranteed.)

The original RAW file

Those of you who can't bear the thought of throwing away your original RAW files can simply embed them into the DNG file itself. You will then be able to extract this file at any later date, should you choose to. (I don't keep the original RAW files, because the DNGs include everything I want to keep. And, of course, embedding the RAW files will make the resulting DNG files quite large.)

Beyond simply *what's* stored in the DNG is the issue of *how* it's stored. Because the DNG format is openly documented, any application that can use DNGs can see your Camera Raw adjustments, read and use the "paperwork" you have enclosed, add more data to the paperwork, and create a good-looking JPEG or TIFF of the file, *even if it can't read the original RAW file type*.

There's another benefit to using the DNG format for image storage, too: it offers significant file-size reductions *losslessly* with no loss of quality. The compression that DNG offers (one of the "save" options) can reduce the size of an image file by up to one third. This translates into nearly immediate savings for the photographer.

Drawbacks of DNG

There are a couple of drawbacks to saving files as DNGs. On balance, they are not of great concern to me, but you should be aware of them.

RAW files saved as DNG cannot be opened by the manufacturer's software. Some people, for instance, like to use Nikon Capture for processing their RAW files. At the moment, if you save your files as DNGs, you will not be able to open them in Nikon Capture. You could choose to embed the RAW file into the DNG, but that makes for a pretty large archive.

If you like the idea of embedding RAW files for certain photos but don't see the need to embed them for every image, you can use the workflow tools I outline in Chapter 6 to embed only the RAW files for images that are rated as very high-quality photos.

Another option is to make it known to your camera manufacturer that you would like them to support DNG. Currently, Leica and Hasselblad both use DNG as a native RAW file format right out of the camera, and there's no reason that manufacturer's software such as Nikon Capture cannot work with Adobe-created DNG files—they simply choose not to support DNG.

The second drawback to using DNG is that (for most cameras) you must convert your files to this format, which requires an extra step. However, I believe that this is well worth the hassle, given the benefit that you receive.

DNG as an archival storage format

Figure 1-12. DNG is your best choice for long-term archival access to your RAW files. **Keywords:** Art Storage, Warehouse, Security, Archive, Paintings

I believe that DNG is, by far, the best bet for ensuring the long-term accessibility of your RAW image files. Although it is brand new, because of the benefits it offers the format is likely to be adopted rapidly. Once you see how Bridge and DNG enable you to build an integrated DAM workflow, I predict that you will switch to saving your RAW files as DNG files and tossing away the originals.

As I have been working with my legacy RAW images, it has astounded me how much more useful a DNG file is than a RAW + sidecar file. Browsing the DNG files in my catalog software reveals the images—those "pretty good prints" I made in Camera Raw—the way I intended them to look. Plain RAW files can only display the preview embedded by the camera. Sometimes the color is way off, sometimes the exposure needs adjusting, and sometimes the image is intended for black and white. DNG files will always be displayed in my catalog software the way I intend them to be displayed.

I believe that there will be more DNG files in existence by the end of 2006 than there will be of any other single RAW format, and that the DNG format may eventually be as widely supported as TIFF (another open format promulgated by Adobe). What's more, the wonderful functionality of DNG files will cause this format to be supported long into the future. Your current digital camera (and hence your current RAW format) is unlikely to enjoy such longevity. In 20 years, it will be hard to even remember what cameras you have used, and you probably won't want to constantly update your software to support these obsolete formats. Imagine if you had to buy a special device to be able to look at the images you shot with a Pentax K-1000 in high school 30 years ago! (Okay, so I'm old: you will be too, if you're lucky.) Switching to DNG now will almost certainly save you a lot of hassle in the future.

The Benefits of Sound Digital Asset Management

Whether you are a professional photographer or an avid amateur photographer, you invest in the creation of your images, and you want to get a return. That return may be in the form of monetary payment or personal satisfaction. Either way, setting up a solid DAM system will greatly improve the return on your investment.

Figure 1-13. Sound DAM can save you time. **Keywords:** Time, Clock, Productivity, Jobs, Speed, Accelerate

While creating a comprehensive DAM system may seem daunting at first, it's really no more work than using a cobbled-together system. I've actually found that it's a lot *less* work, once you get everything streamlined. Once you wrap your head around the differences between analog-world management and digital-world management, the dividends will come rapidly. The benefits of your DAM system include aiding your productivity, adding value to your photos, ensuring longevity of your work, increasing your profitability, and allowing you to adapt to the changing technological landscape.

Sound DAM Aids Productivity

Digital photography has caused an explosion in the number of photographs that people take, and therefore have to process and keep track of. At the inception of the digital revolution, it was commonplace for digital editing tasks to take much longer to accomplish than their analog-world

counterparts. The creation of good DAM software and the incorporation of the Bridge browser in Photoshop CS2 have made this inefficiency a thing of the past.

Cataloging software aids productivity by letting you cross-reference different kinds of information about your pictures and save the resulting groupings as sets of images that you can come back to later. For instance, you can cross-reference assessments you have made about the quality of your images (ratings) with content information you have assigned to those images (keywords, for example).

The new Bridge software that replaces Photoshop's File Browser includes some powerful organizational tools that streamline this process. I'll show you how good DAM practices will let you import your sortings from Bridge, and leverage them to the fullest. By using Bridge's rating and grouping tools, you will quickly be able to confirm:

- That you have chosen at least one image from each situation
- That you have chosen the best image from each situation
- That you will not be throwing away any images that you did not intend to throw away

Cataloging software can go a step further than simply organizing images, however. It will also let you perform work on your files—such as making a web gallery, slide show, or contact sheet—right in the same window that you use to sort. Once you get comfortable with the capabilities of Bridge and your cataloging software, you will be able to spend much less time sorting and preparing files, and much more time shooting.

Proper DAM Adds Value to Your Photographs

Consider for a moment the Bettman Archive. Much of that collection was comprised of images discarded from publishing houses: images considered valueless at the time. By systematically organizing these images, Otto Bettman was able to turn them into a highly valuable collection of photographs and other commercial art. Corbis purchased this collection of "discarded" images for millions of dollars in 1995. Let's think about that.

A photograph at the bottom of a landfill and one in the Bettman files may each have the same artistic and intrinsic value. One, however, has a vastly greater *market* value. The difference is one of accessibility and organization—properties that are dependent on the images being part of a larger collection, and upon there being searchable classifications within that collection.

The market value of a photograph is dependent on your ability to get that image into the hands of someone who wants it. Digital asset management practices give you the ability to sort and retrieve photographs according to many different needs, and therefore enhance accessibility to the pictures.

Figure 1-14. **Keywords:** Globe, World, Earth

What's the Market Value of a Needle in a Haystack?

One way to answer this question is to say that the market value is the worth of the needle, minus the cost of finding it in the haystack. If the cost of finding the needle is greater than the value of the needle itself, it has no market value, because it doesn't even make sense to start searching. However, the effective use of metadata can make the search quick and efficient, so that you can afford to compete in markets where it would otherwise be uneconomical.

Like so much of DAM, this concept of value applies to personal as well as professional images. Say you were invited to Caldwell's house for dinner, and you wanted to bring him a print as a gift. With a properly cataloged collection, you can quickly review the good pictures you have made of Caldwell and select an image or two to print. If the sorting is a chore—"I know that photo is on one of those CDs in that drawer over there, but I'm not sure where"—you may not even attempt to find it.

All of the work that you do to rate and group your images will add value to them, by making them easier to find and bring to market. Because DAM software lets you easily assign and leverage the work of rating and grouping your images, it expedites that process and creates value.

Figure 1-15. Being able to find that needle in the haystack can be quite valuable. **Keywords:** Daisies, Daisy, Stock, Flowers, Unique, Special

Sometimes the client is you

In addition to market value, good DAM practice will enable you to get the maximum personal or artistic value out of your photographs. Digital photography, coupled with good DAM techniques, lets you find and work with your photographs much more easily (and enjoy them more) than you ever could have when working with film. In fact, for much of the work I do with my photography collection, *I am the client*, and the value that I strive for is personal value, rather than market value. Keep that in mind as you read through the workflow solutions offered here.

Effective DAM Enhances the Longevity of Your Work

Good digital asset management is essential to the long-term well-being of your archive. It will help you maintain the completeness of your collection of pictures, and it will be invaluable when it comes time to migrate your pictures from one system/media/format to another.

The most basic part of DAM practice, the storage and backup of image files, is obviously integral to the long-term survival of your photography collection. Figure 1-16 shows my grandfather's graduation picture from the Naval Academy, which has great personal value for me. Now that it has been scanned and included in my digital archive, I know that I, and my children, will be able to enjoy that picture forever.

Figure 1-16. Captain H. G. Donald, my grandfather (Naval Academy graduation picture, 1907). **Keywords:** Harry Gordon Donald, Naval Academy Graduation, Family

It's essential that you have a simple, redundant structure for your photographs so that you don't lose files due to any of the ever-present threats of theft, fire, media failure, lightning strike, computer virus, or human error. If your images are stored in an orderly manner and are well cataloged, you will be able to recover from these hazards with a minimum of loss and hassle.

DAM Prepares You for a Future of Profitable Professional Photography

This section is intended to put a DAM system in perspective for independent professional photographers. If you don't do this kind of work, you can skip ahead to the next section.

The licensing model

Many professional photographers have found that the fairest and most profitable way to "sell" images to clients is through the licensing model. This enables photographers to charge more for images that the client will get high-value usage from, and clients to pay less for images that have a lower usage value. In fact, the licensing model is entirely responsible for the creation of the stock photography market.

It is clear that the licensing model is the driving force behind the information economy. If everyone who bought a book could copy and resell it, there would be no profit in publishing books. For most intellectual property, from editorial publications such as magazines to products such as software and movies, the revenue models rely on the multiple licensing of the same material. Look at Bill Gates, a multibillionaire. He has started two companies in his life: one, Microsoft, writes and licenses software; the other, Corbis, aggregates the rights to license photographs.

Figure 1-17. Sound DAM can help you, and your clients, find what you are looking for. **Keywords:** Jobs, Stock, Path, Quandary, Confusion, Executive, Choices, Crossroads, Decision

For photographers to economically thrive in a licensing-based economy, I suggest following a strategy that enables you to take part in the relicensing process, and hence share in the revenue stream. If you choose to follow this path, DAM will play a critical role in your own well-being, just as it plays a critical role in your clients' businesses. It's up to photographers to understand these challenges, to structure internal tools to deal with these challenges, and to help clients implement systems that work in everyone's favor.

DAM help for your clients

Let's look at this from the client side for a minute. If you think you have trouble keeping track of your images, imagine what your clients are experiencing. Like you, they have a rapidly expanding collection of images in which they have a considerable

investment. These range from images with a high acquisition cost, such as custom photographs for advertising, to images that have little individual cost but a large aggregate value over time, such as historical employee photographs, progress photos, and other photographic recordkeeping items.

Your clients, however, don't have access to the most important tool that most photographers currently use to keep track of their images: the photographer's memory. Fortunately, DAM software has the ability to keep track of hundreds of pieces of information about a particular file, from the photographer's name, to the date taken, to GPS info and more. The new IPTC panel even has a field, shown in Figure 1-18, specifically for the license granted to the client. Use it: it's there for *everybody's* benefit.

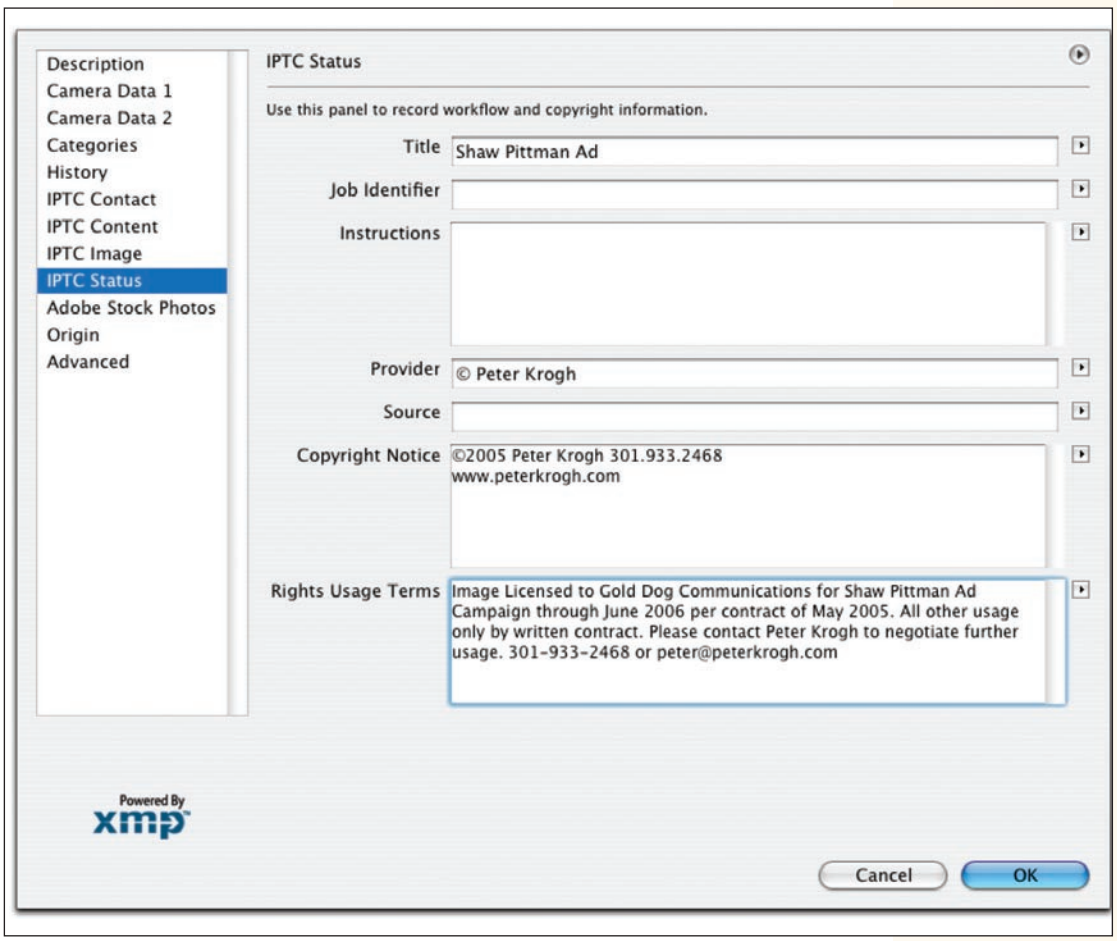

Figure 1-18. The IPTC panel has a field for license information—the "Rights Usage Terms" field—that can help your clients remember the terms of their license.

As photographs (and all other types of media) are collected by a corporation, often by different purchasers under differing usage contracts, the task of keeping track of what images have been licensed, and what rights have

been purchased, becomes unmanageably complex unless there is some system to track it all.

Increasingly, companies with any digital assets of value (which is pretty much *every* company, and especially any that commissions, licenses, or buys photographs) are implementing metadata-based DAM systems. To encourage the continuation of the licensing model, it's up to licensing-based photographers to integrate with their clients' DAM infrastructures. How can photographers expect clients to respect their ownership interest in images if they don't respect it themselves?

NOTE

Professional photographers in the portrait and wedding business can also add value to their images by good DAM techniques. Aside from the productivity boost—which adds profitability in itself—DAM can help you do more with the photographs that you have. You can, for instance, use your DAM application to create a QuickTime movie and sell a DVD of a portrait session or wedding, in addition to prints. You can also more efficiently keep track of customer orders, and identify customers who are good prospects for additional sales.

Figure 1-19. **Keywords:** Executive, Rollercoaster, Business Metaphor, Ride

Photographers must lead the way

As the sources of photography, we must integrate effective DAM practices into our workflow from the very start. We need to first understand DAM, then practice it ourselves, and then help our clients with it. The practices outlined in this book will help with all three of these tasks. And when you are in the position of offering valuable solutions—even ones that raise the price of your invoices to your clients—you become more valuable to those clients. As you read here about how good DAM practices can help you find images and track licenses, keep in mind that these disciplines will add value for your customers (and can make you money).

Figure 1-20. Sound DAM practices help you respond to technological changes. **Keywords:** Technology, Electronics, Wires, Connections, Upgrade

DAM Will Allow You to Roll with the Technological Changes

You may not yet have thought about another challenge that will surely come your way: file migration. Eventually you will need to move and/or change the format of all of your files, because of the obsolescence of your chosen storage media, operating system (OS), or file format. Of the three, your choice of storage media will generate the need for some sort of upgrade migration the most often (probably at least every two years). Chapter 9 deals with these challenges in more detail, but let's get an overview now.

Storage media

As new technologies for file storage emerge, it will make sense to move all your files onto the new media (sometimes merely onto bigger drives). This will be desirable due to decreased cost, increased speed, increased capacity, increased reliability, or some combination of the four. If your archive is well organized, this process can be entirely painless.

Operating system

Migrating a well-organized collection onto a new OS should also prove to be relatively painless. Transferring the files should be no big deal; the biggest potential hurdle here is making sure that all of your sorting work can be ported to your new operating system and cataloging software.

File format

Migrating your collection to a new file format will be the trickiest of the bunch. Most likely, it will be necessary because you have switched to a DNG workflow, or because you've found that a RAW format that worked fine in 2005 is no longer easily readable in, say, 2010. (It is my expectation that once I convert my legacy RAW files into DNG files, I will not be doing file format migration again for a very long time, if ever.)

We'll go over some of the migration issues in Chapter 9. First, let's take a look at how we can construct an integrated archive. The first tool we will use is metadata, which you can read about in Chapter 2.