Do you need 8-, 10- or 15-megapixels? How to choose a digital camera

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As a technology consultant, I work with many dentists who have a variety of questions regarding the addition of technology to their dental practices. Many of the questions are related to topics that I have previously written about in Dental Tribune: an overview of how to decide which technologies to purchase, how to choose dental software, digital radiography, etc.

The topic that seems to receive the most attention, and the most confusion, is digital photography and digital images in general. The sheer number of choices perplexes most dentists.

This two-part article will examine a number of issues that need to be answered when adding digital imaging to the dental practice. We'll explore:

- the pros and cons of both intraoral and extraoral cameras;
- how to choose dental software, digital radiography, etc.
- the criteria that dentists should use in picking a digital camera for their office;
- the hardware/software choices that exist for storing and manipulating these images (part two);
- the myriad of options for digitizing existing non-digital images (in part two);
- how to choose these images;
- the ability to print images;
- and other options for sharing these images with other people (such as the patient, insurance companies and other dental colleagues).

Intraoral cameras

Intraoral cameras have been used for dental applications since the early 1990s. One of the first products was the AcuCam, made by New Image Industries. At one point, New Image held over 40 percent of the market share for these systems.

For many years, intraoral cameras were the cameras of choice. Although there was a bit of a learning curve, they were relatively easy to master and still have widespread acceptance today. Recent surveys have shown that intraoral cameras are found in about 50 percent of all dental offices, which seems to indicate that they may have reached their peak in this regard.

Anyone that has used an intraoral camera is aware of the advantages that these systems offer. Most cameras are capable of magnifying images at 40–52x. This can be an invaluable tool in allowing the dentist to see pathology, such as open margins, fractures and caries, which wouldn't be seen without this level of magnification.

The ability to have images on a computer monitor screen that is visible to the patient is of great benefit. Most experts agree that one of the keys to improving patient acceptance to our treatment plans is the concept of "co-diagnosis."

In other words, allowing the patient to see the problems that we will see allows them to participate in the diagnosis of their dental problems, and they will then be more inclined to accept our recommendations for treating problems that they may have been previously unaware that they had.

The cameras allow us to have a permanent record of a patient's condition before we begin treatment. This can be quite beneficial for cosmetic cases where we can show patients before and after photos of their teeth.

In addition, for legal reasons, it will often be valuable to have a record of a patient's condition before treatment began, just in case the patient is unhappy with the results and is considering legal action.

The cameras can be used to take photos of X-rays, which frees us from having to send in our original radiographs to the insurance companies. Moreover, adding photo documentation to an insurance claim will often speed up the approval of that claim.

How to evaluate intraoral cameras

When evaluating intraoral cameras, there are a number of factors to consider.

I would highly recommend that anyone considering the purchase of an intraoral camera attend a dental meeting where many of the different vendors will be on hand and it just doesn't work!

Some of the more popular models that allow for this are manufactured by Digital Doc (Iris), AcuCam Concept IV (DENTSPLI-GENDEX) and the Claris i310D from Sota Optics.

- Ease of focus. Does the camera require manual focus or is it autofocus? Most cameras have an adjustable focus, so you should evaluate how easy it is to change the focus.
- The focus should be well labeled, and should have a range of motion that is less than 100 degrees so that you can easily change the focus setting with one hand.
- Built-in freeze-frame. Many of the older models do not have this feature, and most people prefer this element to be included with the system.
- Capture button location. Some units use a foot pedal to capture individual images, but other models have the capture button right on the handpieces.

For many dentists, this is simply a matter of personal preference, so you should try both types of systems to see which feels most comfortable for you.

- Single lens system. Many earlier systems contained two lenses, one for true intraoral photos (90 degree lens) and one for extraoral photos (0 degree lens). Many of the newer systems now use one lens for both types of photos.

Because you may want to use the camera to take photos of X-rays on a view box, the key factor is the ability of the camera's built-in light to be turned off when taking these types of photos.

- Unique features. Most camera manufacturers will add special features to their systems to differentiate themselves from their competitors.

Some of the features that you will see include flexible cords, extraoral light adjustments, printing from a portable unit, light and color adjustments and image storage.