

Strategic Considerations When Selecting an Orthopedic PACS

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Digital imaging and picture archiving and communications systems (PACS) have moved out of the radiology world and into freestanding orthopedic practices. Increasingly, orthopedic surgeons are becoming aware of the practice efficiencies of having the image that they need when they need it, and where they need it. Going well beyond the obvious benefits of speed of image acquisition, and reduction in physical storage needs, a PACS provides the physician with new ways to access and view the image that can substantially enhance workflow, enabling the busy orthopedic surgeon to more effectively utilize his or her time.

While the decision to implement PACS technology may be reasonably easy, the decision of *which* PACS to purchase has strategic implications that go well beyond ease of use, or how the images appear on the workstation. A PACS is the foundation of an information infrastructure that must be robust and scalable. The PACS purchase is a major capital decision that will affect the practice for many years into the future. While a successful implementation has the potential to increase practice productivity, purchase of the “wrong” PACS will be paid for many times over, and is a decision that is not easily reversed.

There are well over 100 PACS companies, but there may only be 10 that can perform in a medical enterprise environment (24/7/365). The best of these operate at what is called “five nines” reliability, reflecting the fact that they have 99.999% uptime (just over 5-minutes downtime in a year). At first impression this may not seem important for an orthopedic practice that may only require 10/5/250 operations, but the busy orthopedic practice cannot tolerate **any** downtime during the time when physicians are serving patients. Consider, for a moment, the impact of one-hour of downtime on a practice in which 6-physicians are seeing 4-6 patients per hour in the office, and 2-physicians are in surgery. One hour would move up to 36-patients off the schedule, with obvious disruption of the balance of the schedule, and might cause the cancellation of several

surgeries, as images would not be available to the physicians in the OR. This kind of impact, while it does not carry the life or death implications that a trauma center might face, might be considered as having life or death economic implications for the orthopedic center. It goes without question that the physicians and patients are going to be very unhappy.

In making the PACS selection the prospective purchaser should carefully evaluate the following:

Architecture Stability and Scalability

- The ability to operate at enterprise level, 24/7/365, is of primary importance, as outlined above.
- A PACS purchase is a long-term investment and the technology must be scalable to meet future as well as current needs. Again, it is good to look to the enterprise PACS companies and solutions because of their track record in dealing with the fluid environment of radiology technology change.
- Look for a proven track record for innovation as well as reliability, with a history of regular releases of upgrades to software, not just “bug fixes”.

Corporate and Financial Stability

- As a strategic capital purchase, the choice of company is important. Will the company be there to support your practice in 5–10 years?
- Commitment to R&D. You should be confident that the PACS company that you chose is continuing development both of integration of new modalities, and in improving functionality. This commitment can only be measured by looking at the company’s track record.

Integration Capability

- The full strategic potential of PACS can only be realized if it can be integrated with the practice’s existing and future information systems, as well as with current and future imaging modalities.
- Not all PACS companies are equal in this category. Merely being DICOM compliant is not enough. Look for a

- company that is active in the creation of DICOM, HL-7 and IHE standards.
- A fully integrated electronic patient record, including the imaging component, is critical to the future of medical practice. Make certain that the PACS company that you select can deliver the tight integration required for a totally electronic medical record.

Orthopedic Tools and Functionality

- Is the PACS company really committed to orthopedics? While the PACS must be robust and integrated, it must also deliver a wide range of tools that are valuable to the orthopedic practice.
- Does the PACS company have a range of advanced pre-operative planning tools that provide real value, rather than just replicating manual templating?
- Does the PACS company deliver tools to all major orthopedic areas (i.e., hip and knee replacement, spine, sports medicine, etc.), or is the offering a single focus product?
- What is the PACS company's development plan for orthopedic tools and functionality?

Image Portability

- An orthopedic practice needs to be able to move images into and out of the practice to other locations. Image portability is a very important strategic feature for the Orthopedic practice.
- Orthopedic PACS need to be able to communicate with hospital PACS to acquire post operative images, and must have the capability to burn images to CD or DVD for patients and referring physicians.
- Orthopedic practices need the capability of Web access, both for distribution of images to practice physicians in their homes or in remote locations, and to facilitate use by referring physicians.

Easy-to-Use, Customizable User Interface

- It is important to ensure that the PACS is easy for the physicians to use at the workstation interface. Most enterprise-level PACS companies have developed user-friendly interfaces.

In summation, while the initial focus in the PACS decision may be at the interface of the physician's eyes and the workstation, the decision of which PACS to purchase for the orthopedic practice must be based on a pragmatic review of the basic strengths and weaknesses of the system as a whole. The demands made on an orthopedic PACS are among the highest of all users of PACS. An initial purchase of an enterprise-quality PACS is far more economically sound than needing to purchase a second PACS because the initial PACS did not meet the long-term needs of the practice.

Gerald R. Kolb, JD, is a healthcare consultant whose practice emphasizes workflow and the economics of specialized practice environments. With a background that includes law, business, and healthcare he focuses on the human-technology interface, and how to enhance productivity, while enhancing both quality and service excellence. He can be reached at jkolb@bendcable.com.