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reporting the performance of HIT vendors

# Cardiovascular PACS: Recent KLAS Findings

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Cardiovascular medicine is a very profitable area of healthcare, yet it is several years behind radiology when it comes to technology adoption. Accordingly, providers are clamouring for more information on integrated cardiovascular IT solutions. Generally, these providers define an integrated cardiology solution as one that handles reporting, documentation and image management from a single system on a single workstation.

To assist in providers' need for knowledge in this important area, KLAS conducted a study focusing on uses, benefits and challenges with cardiovascular PACS (CPACS) – as reported by providers themselves. The resulting report focuses on several considerations:

- quantifiable benefits
- functional strength of remote cardiac image management
- advice for choosing and implementing a CPACS system

More than 170 individuals participated in the study, with many respondents (47%) hailing from mid-sized facilities (201–500 beds). Twenty percent of respondents worked in small organizations (1–200 beds) and 17% in large organizations (501–1,000 beds). Cardiology directors and managers comprised the majority of respondents, totalling 65% of overall participants.

### QUANTIFIABLE BENEFITS

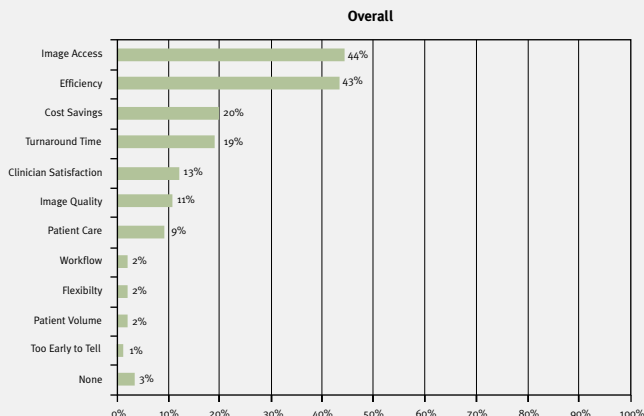
What are the top quantifiable benefits of CPACS usage? Providers most often mentioned image access, efficiency and cost savings as quantifiable benefits they had experienced.

### Image Access

Forty-four percent of providers identified improved image access as a CPACS benefit. One provider reported, “We have seen our workflow improve and have better ability to get information. Being digital is much better when compared to how we used to have to find our films. After films, we had the big optical disks, and there was a lot of breakdown with that. We have not had a lot of breakdowns since.”

### Efficiency

Increased efficiency was another top benefit providers reported (43%). Providers gave specific details to support their case, saying things such as, “We were using 35 mm film. That took over an hour from the time the test was finished until the cardiologist could look at the results. We now do this in less than 30 minutes.”



**Cost Savings**

A promising benefit is the cost savings involved in using a CPACS solution. Providers mentioned this benefit 20% of the time while discussing their CPACS experience. PACS solutions in general are reported to have a great ROI, and CPACS appears to follow suit. As one provider stated, “We did a formal ROI on the product before we acquired it. The major emphasis was based around a major change in productivity with staff and the doctors. After being live for one year, we are very close to the expected ROI.”

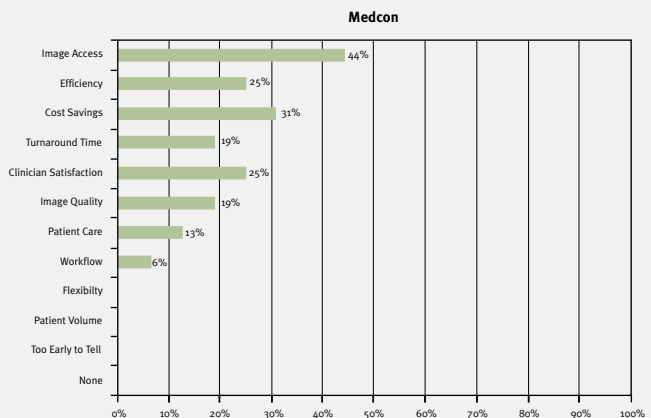
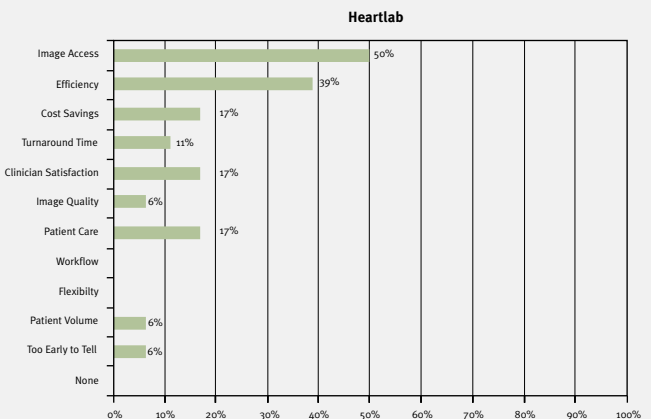
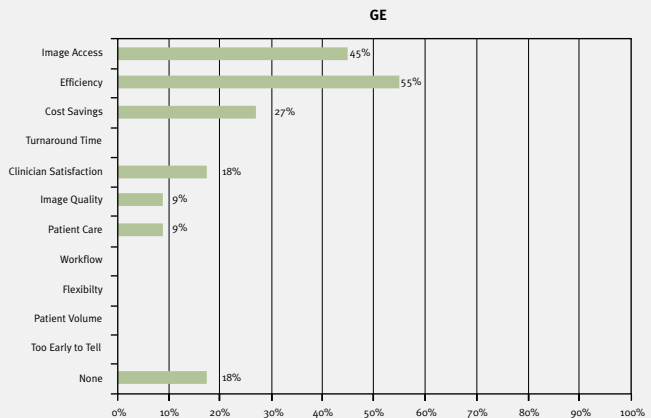
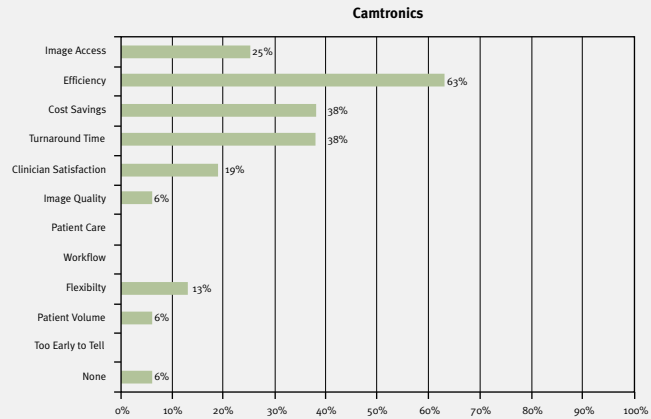
However, not everyone is certain they have achieved a monetary return on their investment. One respondent elaborated, “We are enjoying big-time physician satisfaction. Our physicians are key, as we are a top-ten heart centre. I do not think this system has saved us any money, but I do not think any clinical system is targeted to save money unless we do a full-blown detailed ROI analysis. This is a strategy for physician satisfaction and being a top heart centre.”

**FUNCTIONAL STRENGTH OF REMOTE CARDIAC IMAGE MANAGEMENT**

How do providers rate their remote cardiac image management? KLAS asked this question at the outset of the study. All indications were positive: the average rating providers gave to a product’s remote capabilities was 4.1 on a 1–5 scale, where 1 represented “weak,” 3 represented “average” and 5 represented “strong.” The lowest scoring vendor received a 3.3, which is still in the “average” range.

In general, those using remote features were excited about the access – when it worked. Some providers reported problems with firewalls or other access issues. In some cases, the cause of these problems has been difficult to identify. One provider commented, “Since we bought the product, we have another facility that still to this day cannot connect [remotely]. Nobody can figure out what the problem is. I also have one physician from home that is unable to connect. We are providing the minimum specifications but can’t get this figured out. I don’t know if it is a hospital problem or firewalls or what.”

Other providers seemed almost rapturous when speaking about their remote capabilities. Said one, “The remote cardiac image management is fantastic. Our physicians can pull up issues in less than 30 seconds. We recently had a physician on location in the Northeast. He was able to pull up the image and make the report without any problems.” Stated another, “We make heavy use of this and it is excellent.”



Still, is there missing functionality in CPACS offerings? A majority (65%) of survey respondents said “yes.” However, even here vendor scores had a great amount of variability, from a low of 45% for one vendor to an amazing high of 90% for another.

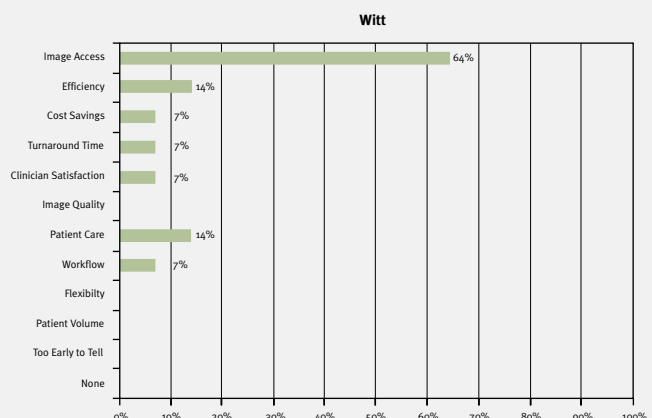
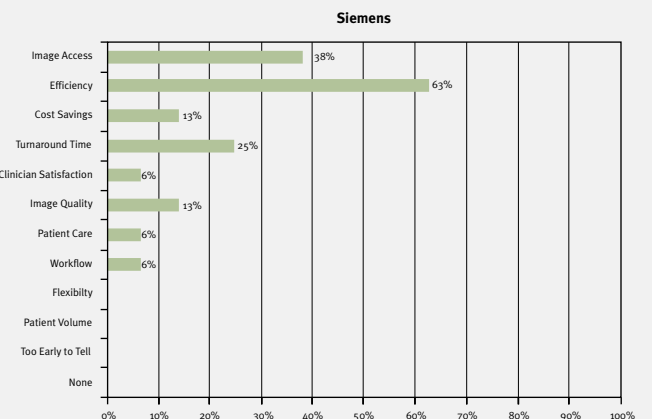
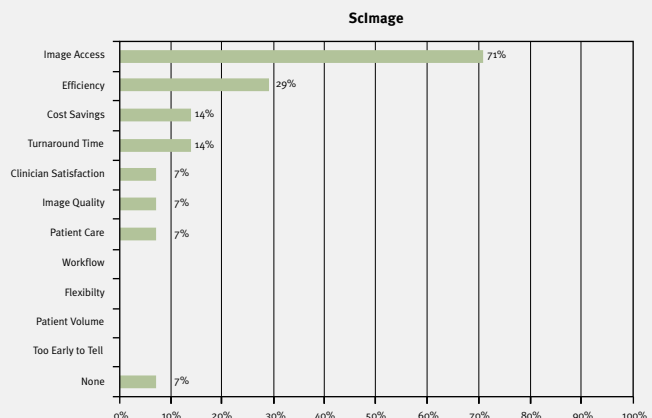
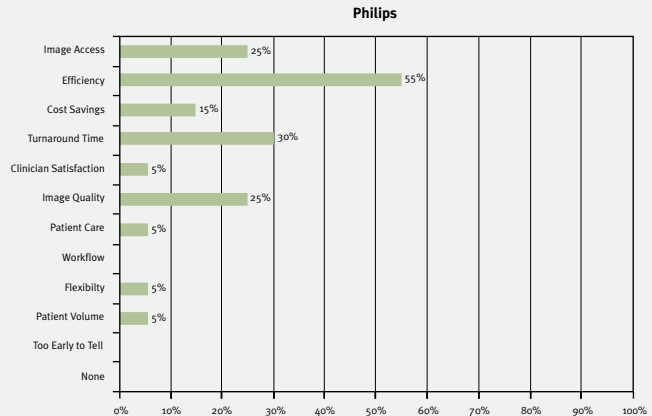
Common needs included: integration/interfacing specifically to ADT data, storage capacity, billing functionality, remote access, nuclear medicine functionality and management and regulatory reporting mechanisms. Providers would like to see much improvement in the future to better serve the Cardiology department’s needs.

**ADVICE FOR CHOOSING AND IMPLEMENTING A CPACS SYSTEM**

What advice would providers give those who are choosing and implementing a CPACS system? Survey respondents are prolific with advice on what to look for when purchasing a CPACS system, with a definite emphasis on due diligence. Repeated themes include

- availability of remote access capabilities and Web integration
- availability of sufficient storage space for one to two years of online storage
- think large files – two to three gigabits each
- there is never enough system memory, so buy more than projected
- DICOM and HL7.IHE industry standards
- detail all needed interfaces and integration and add to contract language
- look at scheduling, billing and reporting capabilities in detail
- make site visits to view product in real workflow environment
- installation should be a team approach and make sure to include physicians, clinicians, IT and radiology
- look at the big picture, going outside of cardiology to look at all imaging needs within the organization
- be very thorough and detailed when defining clinical requirements and ensure vendor can deliver each requirement
- perform a workflow analysis to determine where the impacts will be and plan for these up front
- look to the future and purchase a system that is scalable, flexible and not proprietary

In summary, providers *are* finding quantifiable benefits from their CPACS system and they are happy with the functional strength of those systems, although they would like more function-



ality added in the future. However, providers emphasize using due diligence when selecting a CPACS system and frequently cited the importance of getting good service and support from the vendor. After all, this is a system you want to be happy with for many years to come.

KLAS is currently conducting a second CPACS study, which will be available in July of this year. To learn more about the KLAS findings, go to [www.healthcomputing.com](http://www.healthcomputing.com).

#### About the Author

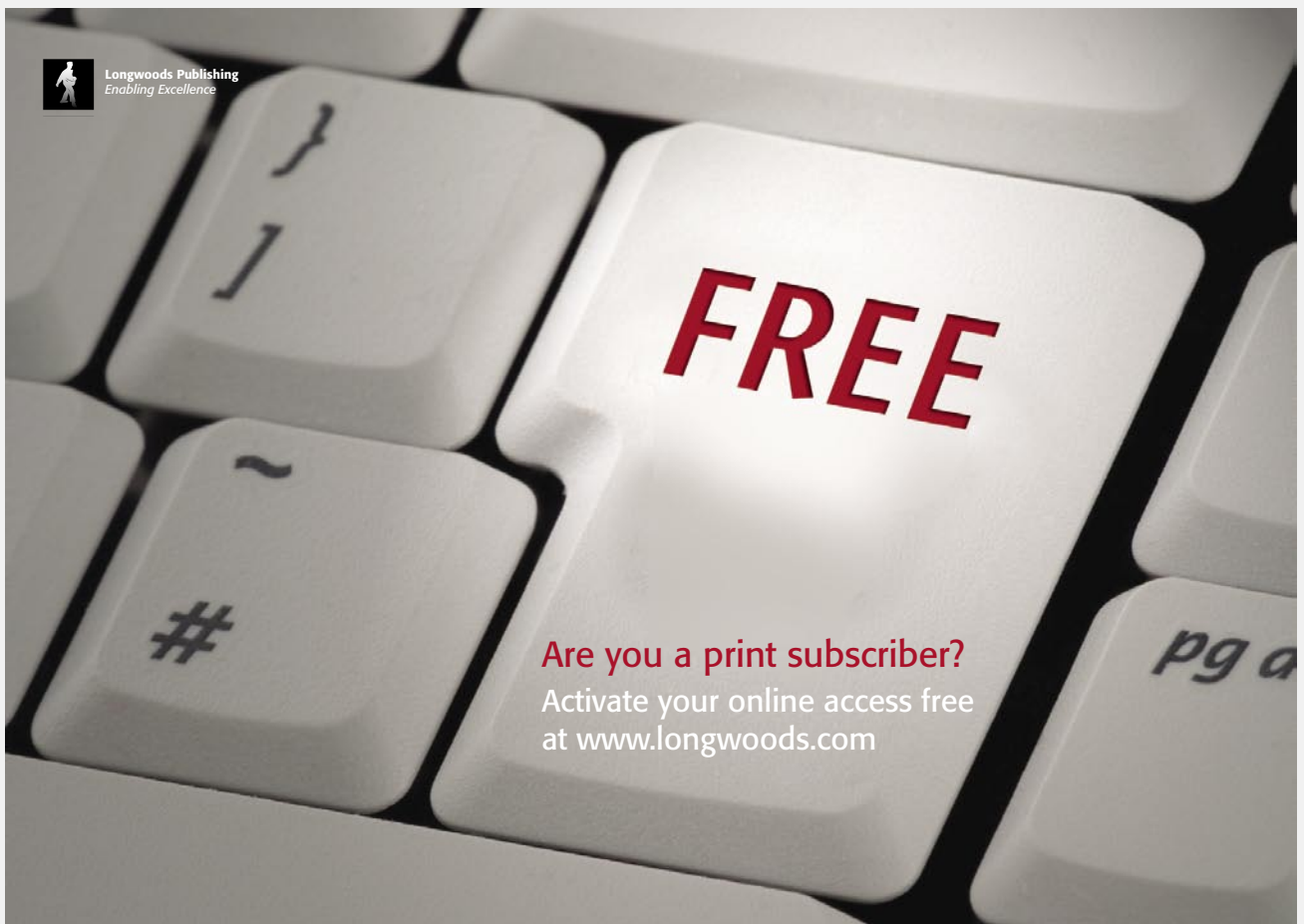
Jeremy Bikman is Director of Imaging and Advanced Technology at KLAS.


#### ABOUT KLAS

KLAS, founded in 1996, is the only research and consulting firm specializing in monitoring and reporting the performance of healthcare's information technology (HIT) vendors and products. Our senior management staff and advisory board average 25 years of healthcare information technology experience.

**How We Serve the Healthcare Industry:** KLAS, in concert with thousands of healthcare executives, CIOs, directors, managers and clinicians, has created a dynamic database of information about the performance of (HIT) vendors. The KLAS database represents the opinions of healthcare executives, managers and clinicians from over 4,500 hospitals and 2,500 clinics on more than 500 different products. The information is continually refreshed with new performance evaluations and interviews daily. The KLAS database is dynamically and effectively used by:

- Healthcare organizations, to align expectations with a vendor's actual performance, to assist in strategic planning and contract negotiations and to validate decision processes
- Vendors, to monitor their performance in comparison with competitors
- Consultants, for current performance information on a specific company or product
- Healthcare investment firms, to evaluate publicly traded HIT company performance and trends or the competition for a new entrant



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