

## Medical Images in the Cloud: InSite One's Vendor-Neutral Archive Management Service Delivers Cost- Effective Image Storage, Sharing, and Disaster Recovery Solutions

Image management may not get the sexy headlines like electronic medical records, but it's an area of rapidly increasing importance. Provider organizations are being challenged both technically and financially to raise the bar on clinical data availability and sharing. Cloud-based services such as InSite One's InDex® free clinical providers from buying and maintaining the scalable infrastructure needed to meet ever-increasing storage and retrieval needs. The rise in Accountable Care Organizations is creating an urgent need for previously unconnected provider groups to share their collective patient information to better manage quality and cost. InSite One provides a cost-effective, pay-as-you-go infrastructure that prepares clinical providers for both known and unknown challenges. We spoke with Mitchell Goldburgh, Senior Marketing and Business Development Executive of InSite One, a Dell company.

### Tell me about InSite One.

InSite One is the leader in medical image archiving as a service in the cloud. Since 1999, we've provided local, on-site, on-premises storage as well as off-site cloud storage services for the active archiving of medical data, integrated with the major PACS players.

We have expanded beyond just medical imaging. We now store a wide-range of medical information conformant with the IHE standards of DICOM (Digital Imaging and Communications in Medicine) and now XDS (Cross-Enterprise Document Sharing).

### What types of content do you manage?

We manage images and reports, both reports sent to us into via HL7 and medical images sent from DICOM and non-DICOM devices. The InDex archive currently contains more than 55 million



### FAST FACTS

#### SERVICES

InDex OnSite, InDex Basic, InDex Web, InDex Recovery, InDex Offsite, Recovery Plus.

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In December 2010 Dell Inc, announced the acquisition of InSite One the cloud-based medical archiving leader to help healthcare organizations simplify retention of healthcare data. The Dell announcement cited how the InSite One solution helps customers reduce costs associated with long-term data storage and migration, provide off-site disaster recovery services and eliminate one of the biggest shortcomings in healthcare today—the sharing of images between medical professionals in the diagnosis and treatment of disease.

The combination of InSite One's cloud-based, vendor-neutral archive software and storage and disaster recovery services with Dell's Unified Clinical Archive (UCA) solution will simplify data retention and allow medical professionals access and share images regardless of the modality, Picture Archiving and Communication Systems (PACS) or end-point device.

DICOM exams and 3.7 billion objects in a single archive supported by cloud services.

### **What are the advantages of using a vendor-neutral enterprise archive management service?**

The technology used to store medical data changes more rapidly than the regulatory and clinical requirements for retaining that data. Total cost of ownership to a provider must consider having to repeatedly re-store existing data on new media and painfully migrate it to new platforms within the retention period for the data.

A one-time ingestion fee when storing that data within InDex services reduces this TCO, as we manage the ongoing technology. There are never any future costs for maintaining storage or accessing that data.

This business model provides two key benefits. It provides infrastructure simplification through consolidation and virtualization for the hospitals or even an imaging center. They don't have to manage the technology. Vendor neutrality of InDex Services provides the ability to keep pace with the ever-changing clinical applications that need access to their data in the future without any data migration required.

InDex services supports clinical transformation. Once we have information, we can allow institutions to share it, if they choose, through routing of the data along with dynamic morphing of metadata to ensure compatibility of old data with new clinical applications.

For example, numerous PACS and modalities that are no longer available on the market have stored data with us over the last 11 years that our clients continue to access demonstrating the power of our InDex services.

### **In the early days of PACS, providers were stuck with the vendor they chose since there was no easy mass retrieval or conversion of their images.**

In the early days of adoption, whether it was PACS or a clinical application creating the data, the use of that data was department specific. Going forward, it behooved the informaticists -- the CIOs, directors of IT, and clinical IT specialists -- to understand that the clinical application that created the data was no longer the sole user of that information.

Having it in a standards-based format becomes a critical strategic and operational decision as evidence-based medicine becomes ever more important.

### **The early business model was that vendors let you store images free, but you paid each time you viewed them. What is the customer benefit of your model?**

The business model has two elements. The first is that the model is pay on ingestion, which synchronizes storage payments concurrent with procedure reimbursement, instead of paying for access or retention beyond the reimbursement period.



**MITCHELL GOLDBURGH, SENIOR MARKETING AND BUSINESS DEVELOPMENT EXECUTIVE OF INSITE ONE, A DELL COMPANY.**

In the didactic science of medical imaging, where you're comparing historical studies with new studies, it's hard to account for that cost of retrieval. When you're paying on ingestion, you have simultaneous revenue coming in from billing for that technical and professional service.

The model is a one-time fee based on exam or collected documents instead of paying per gigabyte or per image. With the InSite One model, we can walk into your hospital and ask, "How many radiology procedures did you do last year?" You may not know how many CTs or MRs or ultrasounds, but you know that you billed about 100,000 procedures.

The simplicity of InSite One's business model is that we could give you a price based on this procedure volume. Our census from nearly 800 sites gives us the ability to offer a bulk price based volume.

The per-gigabyte model creates future liabilities for your operational budget. What you've stored this month may be small, but if your operating volumes go down, you still have to pay for that storage every month.

Our model tracks with your billing volumes since you're paying on ingestion. If your volumes go down, such as with some imaging centers that are suffering, there is no outlay of money based on presumed storage, you pay as you go.

### **Your model also carries no additional cost for the customer to more fully utilize the information they've stored.**

That's exactly right. We store our data in a patient-centric way. Key images associated with the medical imaging exam or any key object(s) associated with any of the documentation can be accessed beyond the clinical applications originating the data if that is supported.

That collective perspective of the patient, rather than a specific exam, is another value of the InDex service, especially as we move to Accountable Care Organization business models where everyone needs to be using the same information to control the costs of delivering quality patient care.

**Before Meaningful Use came along, CIOs were worried about the growing volume of data and their ability to manage the required infrastructure. Is that still the case?**

The amount of information that's coming out continues to increase. The average size of data sets and the volume of documentation – digital documentation – also continues to grow.

There is no DICOM command for delete. It's the purging of digital data versus keeping the digital data that's now a management issue. Those paying per-gigabyte, per-month fees or managing a growing disk farm, or those moving their data on newer and more dense technologies, have a real problem.

**Providers moving to electronic medical records suddenly find that they have interesting opportunities to use the digital data they're creating. Are you seeing that?**

That's a very true observation. We have a separate SQL database against which people can run reports. We're certainly moving into a realm where people will be looking to do analytics on that data.

We have about six percent of the US population in a single database in our InDex archive. That makes our collective platform unique in its ability to provide general market perspectives. It also supports a future vision of letting people understand how they compare to others in the InDex universe. This will be a useful tool as they optimize their operations.

**Some were disappointed that imaging wasn't a greater part of Meaningful Use. Do you think that will change as the requirements mature?**

It's hard to predict what will happen with healthcare. The medical imaging community -- whether it's radiology, cardiology, or any of the imaging sciences – were disappointed that imaging wasn't included. It's a service that comes along with their professional expertise and diagnostic services.

Will it become necessary? There are business models for radiology practices that might emerge for their eligibility. For the hospital some are hinting that it may in 2015. I think it's more likely that image sharing will become a clinical requirement instead, the more we get into personal health and groups of people managing a specific pathology or symptom.

**Speaking of that, your marketing piece on HIEs suggests that "HIEs of need" may form around clinical disciplines**

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**or other group collaboration that are not bound to specific provider organizations. How do you see HIEs evolving over the next five years?**

Total health is a form of health information exchange. Trauma centers need access to prior studies, transplant centers require rapid data collection, and cancer centers need information to provide consultation. I think these HIEs that are based on clinical need are going to become more and more integrated with imaging.

That could also drive the development of HIEs from a business standpoint. Within the members of an HIE, you have a concentric business model that matches what may become the emerging business model for reimbursement. You want to be able to keep patients within the Accountable Care Organization to control your costs.

**Interoperability is often touted on the basis of saving money by avoiding duplicate lab tests. Lab tests are cheap, but imaging isn't. I would think that having images more available would allow faster treatment decisions and avoid expensive re-takes.**

That's important to note. I also think the appropriateness of imaging will grow as the radiologists become part of this health information exchange, especially radiology. Appropriateness criteria have always been an issue driving the perception of the overuse of medical imaging, such as, "As long as you're in my office, I'll just do an X-ray."

Image sharing will probably address that perception and also reduce the number of exams. I also think that radiology's ability to communicate more effectively around the treatment of care will increase its influence on the appropriateness of the recommended studies and the follow-up studies.

**How are customers integrating the images you store into their EMRs?**

Customers are integrating InDex's zero-footprint viewer into their portals and EMRs. Most of our installed base has been integrated into patient and referring physician portals. InDex's toolset has been validated with several EMRs.

Adoption within the hospital setting is trailing the external use of imaging. That's because within the hospital organization, many of the EMRs have integrated specifically to the PACS of that hospital. The universal viewer will ramp up with greater adoption as hospitals want cardiology, which might be one vendor, and radiology, which is another vendor, all integrated into the EMR.

The other thing that's hindering the adaption of EMR integration is that PACS vendors have a lot of workstations deployed throughout the hospital.

**Compared to the early days, open technologies are liberating images not just from the PACS vendor, but from the provider organization itself. Images are becoming as ubiquitous as a transcribed report.**

There's no question that imaging and its associated reports will be liberated from the clinical applications that created them through the vendor-neutral capabilities that IHE as defined. That includes orthopedic images, laparoscopic surgical images... I mean, it goes well beyond radiology.

At RSNA this year, InSite One demonstrated an imaging-specific personal health record. Instead of producing CDs, there's a personal health record for which the patient manages permissions of who can access their images.

I think that's an important element. When we look at the way information is exchanged today, hospitals and especially academic institutions have an onslaught of CDs. A digital exchange platform can eliminate that. Soon patients will have direct access to their data.

**The imaging world really changed with DICOM and IHE.**

When DICOM was created, it was intended to be a modality-to-PACS interface. It was a point-to-point interface, actually a plug they had defined to the physical level.

Since the early '80s when it was created, it has progressed from an interface standard to an archiving standard. It's plausible – I'm not saying it's probable, but it's certainly plausible – that IHE's XDS standard may go beyond the interfacing of information systems and where the information is stored and how you get it to defining how information is managed long term.

DICOM certainly has liberated imaging from the clinical application, but other standards, guidelines, profiles, and actors in XDS will liberate the data even further.

**Everybody's talking about cloud computing. What should providers understand about it?**

The term "cloud computing" is not well understood by the healthcare industry. Cloud delivery allows for dynamic scalability. Technology can be delivered at a lower cost per click or cost per gigabyte of whatever your metric is. It's not ubiquitous, however, and not all clouds are the same.

One of the benefits of InDex is that in this cloud -- it's our own cloud, by the way -- when you need the data back, you can not only access it during a disaster, but we rebuild and shuttle with a feature called rapid restore disk packs that will take the data back to your local facility. Not over the Internet, but physically send you those disks so that you can rebuild your system from local disk. Then we take those disk packs back at no extra cost as part of our service.

Many clouds have a gateway on the premises. Should that gateway go down, all the data in the cloud is in the proprietary

format. The only thing that knows what's on those disks is the clinical application that created them. With InSite One's InDex, our entire environment can be accessed via DICOM in a secure way.

**Any final thoughts?**

In the ten-year history of InSite One, other ventures focused on trying to provide managed services. The challenge has always been to understand the delivery model.

It's been the combination of our patented software technology and our ability to scale and therefore reduce the cost to our customers over time that has given us the credibility and the ability to survive entering our eleventh year. It's been a very exciting ride to now be managing in a single archive over 3.6 billion objects and over 54 million studies.

When I walk into a hospital today and someone is concerned about InSite One and our ability to handle their million studies a year, I can tell them we're doing a million studies a month. That economy of scale benefits even a small imaging center that needs to share information, like an outpatient surgical center or orthopedic practice that's feeding a hospital. We've been able to continue evolving our footprint that provides a common infrastructure that allows sharing patient-centric information without CDs.

## THE BOTTOM LINE

InSite One is the leading healthcare service provider of medical data archiving, storage, and disaster recovery.

The company's standards-based archive, storage, and recovery solutions are bulletproof, easily implemented, and infinitely scalable, protecting users from the risk of technical obsolescence and integration challenges.

The InDex per-study pricing model, with no upfront capital required, is affordable for virtually every healthcare facility.

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