Report:

The BridgeHead Software 2011 International Healthcare Data Management Survey

About the Survey

BridgeHead Software's second-annual Healthcare Data Management Survey, conducted online in late 2011, polled individuals from healthcare organisations all over the world about their ongoing strategies for managing their hospitals' data. The survey's aim was to examine how hospitals were responding to the deluge of electronic information being generated on both clinical and administrative information systems, including electronic patient records and medical images, among other data. As hospitals increasingly rely on information technology for the smooth running of operations and the delivery of quality patient care, the issues covered in BridgeHead's survey – such as disaster recovery, data archiving, cloud computing, and more – are pertinent to the delivery of IT-enabled healthcare everywhere.

The survey elicited responses from 158 individuals across several countries, but predominantly the UK and US. Participants represented healthcare facilities of all sizes, from the small (less than 100 beds) to the very large (more than 1,000 beds), with fairly even distribution throughout. Among all respondents, a majority (58.0%) represented public institutions such as state, county, National Health Service or government agencies.

A wide range of titles and responsibilities were included in the survey, with IT directors and managers accounting for the greatest number of respondents (34.3%), followed closely by senior IT executives and other IT staff (33.6%). Picture Archiving and Communication System (PACS) administrators (5.7%), backup and storage administrators (3.6%), and health IT professionals with a range of other clinical, technical and administrative functions also responded to the survey.

Content

Executive Summary

It would be impossible to accurately examine the state of healthcare IT without taking into account the enormous deluge of data hospitals are facing today. The global healthcare industry generates approximately 30% of the world's data[1] – a massive amount that increases day after day, driven partly by legislative mandates, partly by the emergence of more sophisticated healthcare technologies, and partly to the increase in files generated by hospital office and administration systems. 46.8% of respondents to BridgeHead Software's 2011 International Healthcare Data Management Survey reported an increase in data volume in 2010 of up to 25% on the year before, with another 12.7% indicating they had seen a rise between 25% and 50%. Overall, two-thirds of hospitals surveyed said their data volumes had increased over the previous year. A scant 4.8% said data volumes had decreased or stayed the same.

Data growth, the study revealed, played a key role in how hospital IT decision-makers allocated their budgets for the next year. Top of the list of spending priorities were backup and disaster recovery to ensure patient information was available to clinicians and hospital staff when and where it was needed, even in the aftermath of a disaster or system outage. Yet, in spite of these concerns, only 26.1% of respondents said their facilities had a tried-and-tested disaster recovery strategy in place — a figure that underscores the incredibly challenging nature of disaster recovery in healthcare.

According to BridgeHead's survey, health IT leaders viewed Picture Archiving and Communication Systems (PACS) as being responsible for the majority of healthcare data growth, followed by files held in the electronic patient record and scanned documents such as proof of identity, insurance documents etc. The growth in clinical content, particularly medical images, has prompted many healthcare organisations to take ownership of that data by investing in vendor neutral technologies that give them more control over the way their information is stored, protected and shared. BridgeHead's survey found that the majority of hospitals are actively investing in PACS applications that allow them to store data in a third-party, vendor neutral archive (VNA), rather than relying on the PACS vendor's built-in, proprietary VNA.

Cloud storage is still not ready for prime-time, according to health IT leaders who responded to the survey. Citing concerns about the security and availability of data stored in the cloud, the majority of respondents said they were unlikely to adopt public cloud storage in the near future, although they showed a slight preference for private cloud storage over public.

The survey also revealed that "green" or environmentally friendly IT initiatives are still not a top priority at most hospitals. Green IT ranked low on the list of healthcare IT spending priorities, and less than a third of respondents said their facilities had a firm strategy to reduce data centre energy consumption. However, green IT appeared to be of greater concern to providers in the United Kingdom, driven by a focused strategy within the National Health Service (NHS) to lower carbon emissions.

[1] *"Survey on the Government of Unstructured Data" 30 June 2008, Ponemon Institute*

Data Growth Drives Health IT Investment

For the second year running, BridgeHead Software's International Healthcare Data Management Survey asked hospital IT leaders where they planned to spend their budgets over the next 12 months — a key indicator of the challenges at the forefront of their agendas.

The survey found that disaster recovery (DR) was once again considered the top IT issue, with 54.6% of respondents choosing backup/DR as one of their top three IT investment priorities for the next year. This represented an increase of 11 points compared to last year's survey which saw 44% of healthcare IT professionals choose DR as one of their top three IT investment priorities. DR was closely followed by server virtualisation (53.7%) and digitising paper records (49.2%). The lowest-ranked IT priorities were green IT at 11.5% and cloud storage at 10.0% (the survey allowed respondents to choose more than one, hence the total exceeded 100%).

Jim Beagle, CEO of BridgeHead Software, said, "These survey results confirm what we expected: disaster recovery is becoming more of a priority, not less. This is largely due to the fact that hospitals continue to generate massive amounts of different types of data via a variety of information systems, from PACS and Radiology Information Systems to accounting and administration applications. Amid this technological complexity and unstoppable data growth, the first step towards a robust DR strategy is not an easy one to define. At BridgeHead, we believe the foundation for effective DR in hospitals is to understand the amounts and types of data you are managing. If you don't know these answers, it will be incredibly difficult – if not impossible – to implement an effective DR strategy that can reliably protect vital data in the case of a system outage, loss, corruption or disaster."

Data Growth Presents Challenges for Disaster Recovery

The one possibility that seems to worry health IT professionals more than any other is that important patient information could be irretrievably lost or damaged, whether because of negligence, a malicious hacking attack, a system outage, or disaster. In spite of increased compliance with the HITECH Act and other federal regulations, a recent study by The Ponemon Institute[2] found that 96% of US healthcare providers surveyed had experienced at least one data breach in the last two years. Significantly, a third of those breaches were caused by technical systems glitches.

Most hospitals do not have a tested and workable DR strategy in place, found BridgeHead's survey. Just over two-thirds of respondents (64.4%) said their organisations had a DR strategy of some kind, but only 26.1% of those strategies were deemed "robust" and had been tried and tested.

Jim Beagle explained that this low figure may be attributed in part to the unique complexity of DR in healthcare. "Backup and disaster recovery is a complex landscape for healthcare. With the enormous amounts of digital information that hospitals have to manage, it is increasingly difficult to ensure backups are completed in the available time windows and that the appropriate copies are made to the appropriate storage media to enable the execution of a comprehensive DR strategy. This challenge becomes more complex, time consuming and expensive as data continues to grow," he said.

Unfortunately, according to healthcare providers who responded to BridgeHead's survey, backup and restore solutions are not fully accomplishing their intended objectives, either. Only 23.5% of respondents to their survey said their facilities met their Service Level Agreements (SLAs) for both backup and restore.

[2] "Second Annual Benchmark Study on Patient Privacy and Data Security" December 2011, The Ponemon Institute http://www2.idexpertscorp.com/assets/uploads/PDFs/2011_Ponemon_ID_Experts_Study.pdf

Where Is the Data Stored?

Disk remains the most popular destination for healthcare data, according to survey results. 67.5% of respondents who archive data do so via disk, 50.0% use tape, 27.5% use optical media and 7.5% use cloud storage (most use a combination of options - the survey allowed respondents to choose more than one, hence the total exceeded 100%). The data reveals healthcare's tendency to apply expensive disk storage to address its growing data volumes – a strategy that cannot be sustained over the long-term.

The survey showed that most hospitals do not archive data holistically based on its age and value. For instance, only a few organisations (15.8%) reported they had implemented an archiving strategy to migrate older data that was rarely accessed from primary storage to more appropriate and less costly storage tiers. The majority (54.4%) said they used the built-in archives in some of their applications such as PACS and document imaging technologies, which often include a basic archiving functionality.

"In healthcare, there are enormous volumes of static, unchanging data that is never, or very rarely, accessed. In fact, BridgeHead estimates that over 80% of a hospital's data becomes static within 90 days after its creation and is never changed or accessed again. Data that never changes or is rarely accessed does not require the same storage priority as highly dynamic data generated during a patient's treatment. Static data can, and most certainly should, be stored on more cost-effective media as opposed to the default position of expensive disk. However, when 'siloed' data archives are built into applications such as PACS, and are not integrated into hospital-wide IT strategies, it becomes more and more difficult for hospitals to manage their storage infrastructures efficiently and cost effectively," said Jim Beagle.

Medical Imaging Studies Responsible for Majority of Data Growth

Of particular note in this year's survey was that medical imaging studies, such as X-rays, MRIs and ultrasounds, were cited as being responsible for the upsurge in healthcare data. 63.1% of respondents listed PACS as the number-one cause of data growth, followed by files held in the electronic patient record (54.1%) and scanned documents such as proof of identification and insurance documents (50.5%) (the survey allowed respondents to choose more than one, hence the total exceeded 100%). These figures echo the results from BridgeHead's 2010 data management survey, where 65.3% of respondents cited PACS as a main cause of data growth.

"Medical image workflow applications such as PACS, which were initially focused primarily on radiology, are increasingly being applied to other hospital departments," noted Jim Beagle. "Because of the ever-widening scope of medical image technologies, and the frequency and size of the images that modalities are now able to produce, the rate of data growth in imaging outside of radiology is actually much faster than in radiology itself, particularly in areas such as digital pathology. As healthcare organisations take advantage of newer imaging technologies, so the upsurge in medical image data continues."

Hospitals Investing in Vendor Neutral Archives

Given that medical image technologies such as PACS are credited with being responsible for the majority of healthcare data growth, it should perhaps come as no surprise that this year's survey indicates hospitals are actively taking steps to take control of the storage and management of their medical image data. According to the survey results, 51.4% of respondents said their organisations would likely require their next PACS

application to be compatible with a third-party, vendor neutral archive (VNA) for the storage of medical images, as opposed to relying on the PACS provider's proprietary archive. 15.9% said their organisations would not even consider purchasing a PACS application that was incompatible with a third-party VNA, and 35.8% said their facilities already had such an archive or planned to deploy one.

It is believed that VNAs bring a host of technological benefits for several important areas of healthcare IT including interoperability, data access, IT efficiency, reducing IT costs and disaster recovery. However, there is still much confusion as to what a VNA actually is – something BridgeHead Software has tried to address in its recent white paper, "Is a Vendor Neutral Archive the Answer?".

"It's not just about managing medical images," said Jim Beagle, "VNAs also help healthcare organisations to improve data access and interoperability across all of their systems, including non-DICOM images, email, scanned patient documents, and more. VNAs allow hospitals to take back ownership of their data, enabling them to optimise use of their existing storage infrastructure and systems investments, reducing redundancy and often delaying expensive storage refreshes until they are truly needed."

In BridgeHead's survey, VNAs were viewed as being particularly important in the UK, where NHS Trusts are facing the 2013/2015 expiration of PACS contracts under the National Programme for IT in the NHS. Under time pressure to re-evaluate their medical imaging and IT infrastructures, 65.7% of UK respondents said they would likely invest in a third-party, PACS-neutral medical image archive of their own choosing, as compared to 45.5% in the US. A quarter of UK respondents said IT providers not meeting this requirement would be eliminated from consideration, compared to only 9.1% in the US.

Healthcare Leaders Not Convinced by Cloud Storage

This year's survey revealed that healthcare leaders are still not convinced that cloud storage is the safest and most efficient way to store healthcare data. Only 10% of respondents listed cloud storage among their top three IT investment priorities, in spite of the recent buzz around cloud computing. In particular, the survey highlighted hospitals' concerns about the security and availability of patient data in the cloud: 47.9% of respondents cited this as a reason for not adopting cloud storage. However, it appears that hospitals are slightly more likely to use private cloud storage than public cloud storage. Only 17.0% of respondents said they were at least somewhat likely to use public cloud storage, whereas 27.6% said they were likely to use private cloud storage.

"Green" Health IT: Still Not a Priority

According to the healthcare IT leaders who responded to BridgeHead's survey, most hospitals are still not making green IT a top priority. Only 31.2% of respondents said their facilities had a strategy to reduce energy consumption from the data centre. Green IT did not rank high on list of IT investment priorities, either; in fact, globally it fell slightly to 11.5% compared to last year's 12.3%.

Green IT received the most attention in the UK, where NHS Trusts are facing pressure to reduce energy consumption in accordance with the NHS Carbon Reduction Strategy. In the UK, 40.6% of respondents said their organisations had a carbon reduction strategy, compared with only 29.1% in the US.

Jim Beagle noted that moving to more energy-efficient data centres also brings other benefits such as improving IT efficiency and reducing storage overheads.

"Data centre carbon emissions may comprise a relatively small proportion of the healthcare industry's total carbon footprint, but given that energy-efficient data centres are also more cost-effective, hospitals everywhere should be taking every possible step to create more environmentally friendly IT environments," said Beagle. "A simple step is to develop a multi-tiered holistic archiving strategy that moves data onto the most appropriate storage tiers. In essence, static, unchanging data is automatically removed from expensive spinning disk and placed onto more cost-effective storage media, whether it be tape, optical or less expensive disk. In addition to reducing hospital overheads, such as energy, maintenance and cooling, effective data management can also help increase organisational efficiency and decrease the hospital's energy carbon footprint."

With 20 years' experience in data and storage management, and 10 years in healthcare, BridgeHead Software is trusted by over 1,000 hospitals worldwide.

Today, BridgeHead Software helps healthcare facilities overcome challenges stemming from rising data volumes and increasing storage costs while delivering peace of mind around how to **STORE**, **PROTECT** and **SHARE** clinical and administrative information.

BridgeHead's Healthcare Data Management (HDM) solutions are designed to work with any hospital's chosen applications and storage hardware, regardless of vendor, providing greater choice, flexibility and control over the way data is managed, now and in the future.

Learn more about BridgeHead Software at **www.bridgeheadsoftware.com**

Follow BridgeHead Software on Twitter at **www.twitter.com/bridgeheadhdm**

BridgeHead

UK
BridgeHead Software Ltd.
BridgeHead House
215 Barnett Wood Lane
Ashtead, Surrey, KT21 2DF

+44 (0) 1372 221 950
+44 (0) 1372 221 977 fax

USA
BridgeHead Software, Inc.
400 West Cummings Park
Suite 6050
Woburn, MA 01801

+1 781 939 0780
+1 781 939 5607 fax

GERMANY
BridgeHead Software Ltd.
Kaiserwerther Strasse 215
D-40880 Düsseldorf - Ratingen
Deutschland

+49 (0) 700 9729 0000
+49 (0) 210 2420 62 fax