

# Report: The BridgeHead Software International 2010 Data Management Healthcheck Survey

July 2010

## Executive Summary

Driven by emerging technologies and legislative mandates, the healthcare industry worldwide is experiencing an explosive growth in data volumes – whether generated by sophisticated imaging systems, robust electronic health records or captured scanned documents. 41% of respondents to BridgeHead Software’s International 2010 Data Management Healthcheck survey anticipate annual increases in data volume of up to 25%; another 18.1% indicating they could see a rise between 25% and 50% per year.

This reality, the study reveals, has become a key consideration as healthcare IT decision-makers set spending priorities over the next 12-24 months. Top of the list are data backup/business continuity/disaster recovery to ensure that healthcare information is available to clinicians when and where they need it.

The growth in data prompts healthcare organizations to assess the effectiveness of their storage and archiving strategies. Currently, nearly 66% of respondents who archive data do so via disk, 32.8% use optical media and 29.9% rely on tape [the survey allowed respondents to choose more than one, hence the total exceeded 100%]. However, only a few organizations – 26% – reported they have implemented a migration strategy that transfers older data that is rarely accessed from primary storage to more appropriate and less costly storage tiers. ▶

## About the Survey:

Conducted online in early 2010, BridgeHead Software’s 2010 Data Management Healthcheck survey polled individuals from healthcare organizations worldwide. The aim was to assess the industry’s overall preparedness to handle the massive influx of data volume generated by electronic patient records and medical images, among other data.

The survey elicited responses from 133 individuals across several countries, but predominantly USA and UK. Participants represented 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 [51.9%] represented public institutions such as state, county, NHS or government agencies.

A wide range of titles and responsibilities were indicated in the survey, with IT directors and managers accounting for the greatest number of respondents [25%]. About 17% of participants were senior IT executives, followed by non-IT directors and managers at 16.4%. Others represented a host of clinical, technical or administrative positions within their healthcare organizations.

The survey also discovered that initiatives such as “green” IT and cloud storage utilization have not been embraced at the levels conventional wisdom implies. 70% of respondents to the Healthcheck survey said they are currently not using cloud storage, with 26.4% saying it is “not likely at all” they will adopt it within the next two years, compared to only 27.6% indicating it is “somewhat likely.” The main reason? Concern about the security of data [65% of respondents].

Green issues ranked similarly low among healthcare IT’s spending priorities. According to the survey, 28.7% of respondents said they have no existing CO2 reduction plan, while 17.2% said they are “thinking about it.” Only 25.2% indicated they have a specific CO2 target to decrease their carbon emissions. However, green IT appears to be of greater concern to providers in the United Kingdom, driven by a focused strategy within the NHS [National Health Service] to lower carbon emissions.

## Data Growth is a Driving Factor for Healthcare IT Investments

Ask 10 healthcare executives what IT problem keeps them up at night and you’ll likely get an equal number of answers. Perhaps the better determination of hospital priorities lies in the question, “Where do you plan to spend your IT budget?” The answer to this and other vital healthcare IT questions were recently revealed in BridgeHead Software’s International 2010 Data Management Healthcheck survey.

According to 44.3% of respondents from hospitals and healthcare organizations worldwide, data backup/business continuity/disaster recovery were among their top IT investment priorities, followed by PACS at 37.7% and server virtualization at 31.1% [see Figure 1].

“More than simply an analysis of anticipated IT spend, the Healthcheck survey speaks volumes about healthcare providers’ greatest needs,” says Tony Cotterill, President and CEO of BridgeHead Software. “The dual pressures of the conversion from paper medical records to electronic, as well as the upsurge in the number of medical imaging and other healthcare related files, are forcing hospitals to take a closer look at their current data and storage management strategies with an eye towards potential solutions that enable effective access, availability and protection of critical electronic patient information.”

### What are your top three IT investment priorities for the next 12 months?

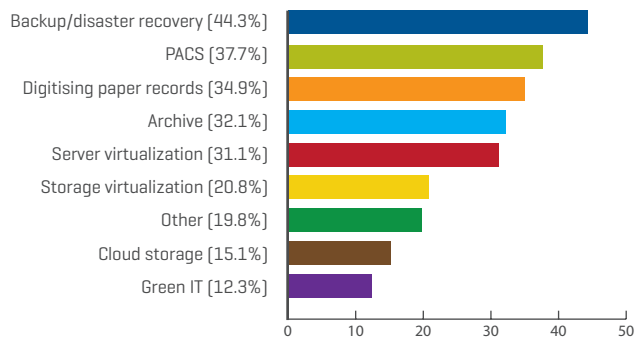


Figure 1

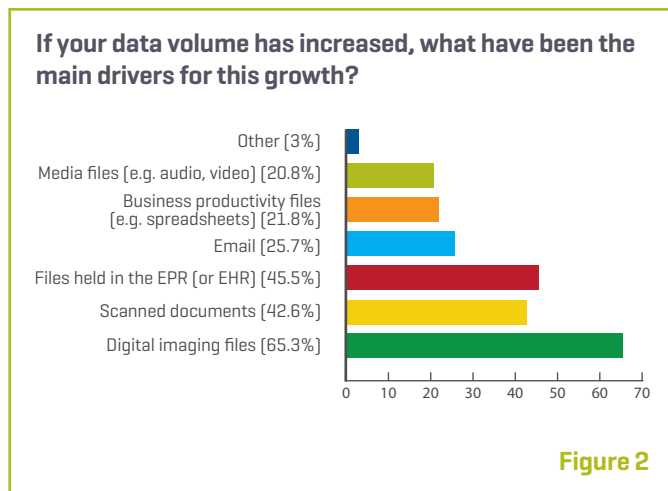
Cotterill goes on to detail how healthcare providers are also paying greater attention to the bottom line. “As healthcare emerges from the global recession, hospitals are largely enacting strict cost-cutting measures to help protect their financial positions,” he says. “It’s become more important than ever to deploy a cost effective technology solution that can handle the greater data loads without derailing the budget.”

## Growth in Data Volume Spurs IT Priorities

Healthcare data is worth nothing if it’s not available to those who need it, when they need it. Unfortunately, a general lack of standards and regulations means the approaches to the backup and protection of healthcare data are as varied as the organizations that employ them. The United States’ Health Insurance Portability and Accountability Act [HIPAA], for instance, requires healthcare organizations to adopt a contingency/business continuity plan [Security Rule 164.308(a)(7)(i)], including data backup and disaster recovery provisions. However, enforcement of these rules has been notoriously lax, practically guaranteeing that many providers have not made strict adherence a priority. Nor is this lack of standards constrained to North America. The NHS National Programme for IT has likewise come under fire for inadequate attention to security and patient privacy. In the UK for example, the NHS reported a larger number of data breaches than any other sector – 305 over two-and-a-half years. Comparatively, the private sector noted 288 breaches, the local government 132 and central government 18.

Additionally, the constant threat of disaster looms ever larger in healthcare’s collective mind. Hurricane Katrina, which struck the United States’ Gulf Coast in 2005, emphasized how difficult it can be for hospitals to not just restore service following a catastrophic event, but also ensure that vital patient information is available to those who require it, even if the primary data center has been disabled. Similar natural disasters like the 2007 flooding in Yorkshire, UK, or even “The Big Freeze” of 2009-2010 drove home the point that the business of healthcare can become significantly disrupted with little notice.

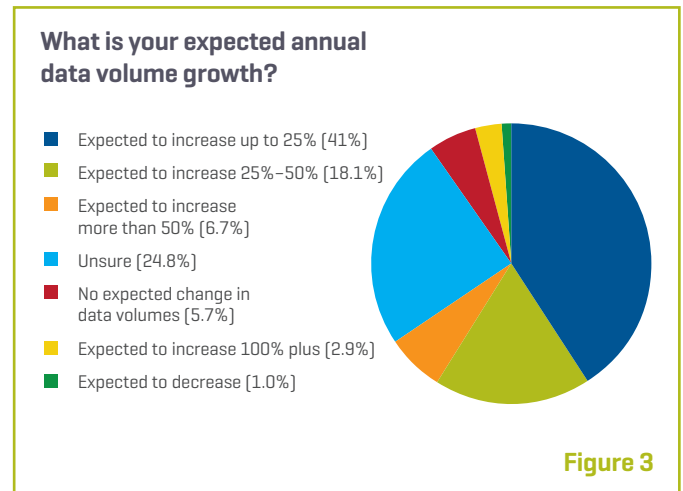
More common but no less devastating are routine threats to healthcare data’s integrity, such as viruses, hackers, or outright equipment failures – servers, routers, storage mediums, for example – that occur when power is lost or a device simply breaks. “While most providers dismiss their chances of being affected by a catastrophic event such as a natural disaster or terrorist act, none can overlook the more mundane but similarly significant loss or corruption of data due to any number of dangers,” says Charles Mallio, BridgeHead’s Vice President of Business Development. “More importantly, new threats are always lurking, ensuring that backup/disaster recovery will remain a leading priority well into the future.”



The survey also identified the types of content that hospitals are storing. According to 23.9% of survey respondents, more than half of their data content is tied up in medical images, while 21.7% indicated they account for less than 10% of their data. Scanned documents such as driver’s licenses or other forms of identification cards and files

held in the electronic medical record followed close behind. Respondents were split between digital imaging and scanned documents as the main drivers of data volume growth [see Figure 2].

41% of respondents anticipate annual increases in data volume of up to 25%, with 18.1% indicating they could see data volume rise between 25% and 50% per year. By all accounts, however, it appears that healthcare organizations are underestimating how much data they are generating. “I find the responses surprising given the anticipated growth from digitized patient records and medical imaging technologies such as PACS,” Cotterill says. “From our experience, these factors are contributing far more volume than providers often realize.” [see Figure 3].



Consider that a modest 100-bed hospital will generate approximately 60GB of new digital content per-bed per-year, requiring an additional six terabytes of storage space annually. This does not even include storage-intensive medical images generated by PACS, pathology and other systems, which, at 300MB per average record, account for approximately 30% of the world’s storage, according to the Ponemon Institute’s report titled “Survey on the Government of Unstructured Data.” It is also the largest projected growth area as indicated in the Healthcheck survey [see Figure 4]. ▶

### How much of your data is represented by medical image files?

- More than 50% [23.9%]
- 41%–50% [10.9%]
- 31%–40% [16.3%]
- 21% – 30% [17.4%]
- 11% – 20% [9.8%]
- Less than 10% [21.7%]

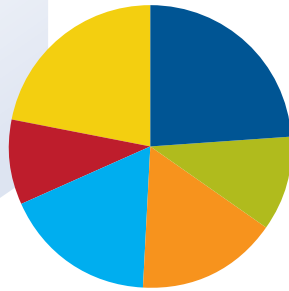


Figure 4

## Where Does the Data Reside?

Disk remains as the most popular destination for healthcare data, according to survey results. Nearly 66% of respondents who archive data do so via disk, 32.8% use optical media and 29.9% rely on tape (the survey allowed respondents to choose more than one, hence the total exceeded 100%) [see Figure 5]. 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.

### What destination media are used for your archived data?

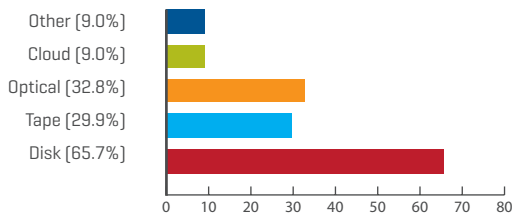


Figure 5

When asked whether or not their organization stores data according to its age or value, only 26% of respondents said they had a full migration policy that included archiving data to appropriate storage tiers. Most, 43.8%, indicated that some applications have archiving capabilities. Another 18.8% said they do not have a policy but intend to, while 11.5% admitted they have no plans to implement an age/ value data migration policy [see Figure 6].

Those organizations that have a migration policy for some applications clearly don’t approach their storage strategy holistically. For instance, PACS and document imaging technologies often include some basic archiving functionality. “Even top-of-the-line solutions are unlikely to be integrated into an enterprise-wide IT strategy,” Mallio says. “As such, they cannot become the foundation for information sharing, within the institution’s walls or externally with specialty partners or even other hospitals. This is notable given, for example, the US HITECH Act, and the global momentum behind ‘integrating the healthcare enterprise,’ both of which focus on interoperability.”

Even more intriguing is why an organization would choose to not have an archive policy for migrating data from their primary storage facilities, for example, onto to less expensive media based on its age or value. “Conservatively speaking, at least 80% of a healthcare organization’s data becomes static after 90 days and is never accessed again,” according to Mallio. “While data used to populate the patient record must be retained for policy and reporting purposes, it does not require the same storage priority as does highly dynamic data generated during a patient’s treatment.”

### Do you currently store data on a storage system based on its age/value?

- Yes, we have a full archiving policy and migrate content to the appropriate storage tiers [26.0%]
- Some applications have archiving capabilities [43.8%]
- We don’t do this but are planning to [18.8%]
- We don’t do this and have no plans to [11.5%]

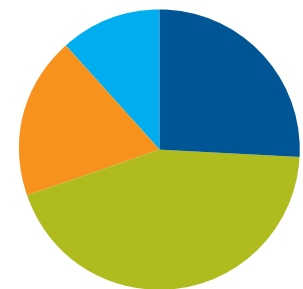
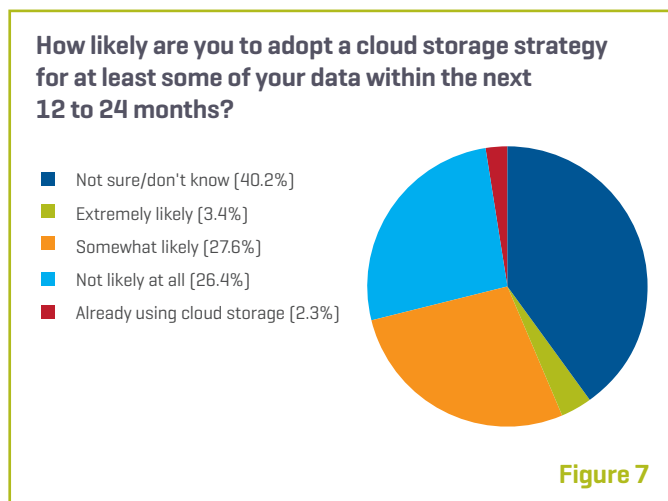


Figure 6

## Healthcare Not Ready for the Cloud

Cloud storage, an Internet-based architecture that involves storing data on multiple virtual servers that are typically hosted by a third party, is not ready for prime-time, according to healthcare leaders. 70% of respondents to the Healthcheck survey said they are currently not using cloud storage, with 26.4% saying it is “not likely at all” they will adopt it within the next two years, compared to only 27.6% indicating it is “somewhat likely.” Hospitals that are onboard with cloud use the technology primarily for backup and/or archiving of data [see Figure 7].



The results largely indicate hospitals' concerns about the security and availability of healthcare data given the great number of threats, including privacy breaches and identity theft. More than 65% of respondents said it was a reason for not adopting cloud computing. “Unfortunately, this data points to a difficult perception to overcome in this industry that healthcare data will be more at risk in the cloud environment,” says Cotterill. “Interestingly, the security of medical records today, especially paper-based, is far from perfect. Robust cloud technologies do exist to ensure a greatly improved level of security and the protection regarding healthcare data compared with the status quo of many hospitals.”

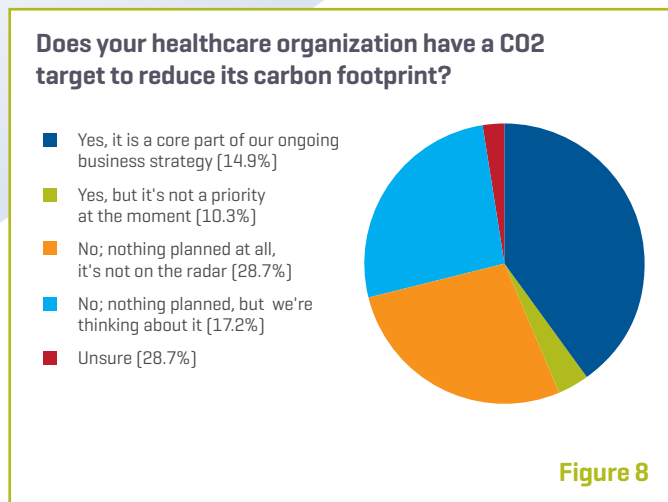
And while questions remain about the cloud's ability to protect data, it is far from the only factor that weighs on the minds of healthcare providers. Other objections include cost [26.1%] and a lack of conviction that cloud offers greater benefits than local storage media [26.1%]. These results further emphasize the uneasiness among healthcare

providers to deploy technologies in which ROI is not assured. “Considering that healthcare providers are tightening their IT budgets, they are realizing there is greater value in the more efficient use of the storage assets they currently have,” Cotterill says.

“From the BridgeHead survey, as well as the general tone of indifference among healthcare organizations, it's very difficult to gauge where the industry is headed in terms of cloud adoption,” Cotterill says. “However, one area for cloud computing to gain initial traction is in hosting backup copies of information that's already available somewhere else, as opposed to archived data that exists in only one place. Hospitals that understand this have a much better chance of putting their trust in this environment.”

## Going Green...Or Not

Green issues also ranked low among healthcare's IT spending priorities. According to the survey, 28.7% of respondents said they have no existing CO2 reduction plan, while 17.2% said they are "thinking about it." Only 25.2% indicated they have a specific CO2 target to decrease their carbon emissions [see Figure 8].



Green IT appears to be of greater concern to providers in the United Kingdom, driven by a focused strategy within the NHS (National Health Service) to lower carbon emissions. Announced in 2008, the NHS is aiming to reduce emissions by 26% by the year 2020 and 60% by 2050. It's an activity not to be taken lightly; the organization's 2010 budget calls for a £60-million (about \$90-million) reduction in energy bills that is expected to trim its carbon footprint by 10%.

While efforts to lower carbon emissions are less organized in other regions of the world, that is not to say healthcare providers are skirting the issue. Providers and technology vendors alike have a collective mission to ensure their systems operate at peak efficiency, not necessarily as good environmental stewards, but because of the cost savings they can achieve. And with so many competing priorities such as demonstrating meaningful use in the US and the global need to establish a business continuity plan, an all-encompassing strategy built around environmental issues may simply not be practical from an expense perspective, according to Mallio.

## A Solution Found in HSV

The easiest – and most common – solution to healthcare's storage management problems is to simply throw more disk at it. This has become a less defensible response, however, due to the costs to acquire, maintain, back up and protect the ever-increasing amounts of information. "When you consider that, for every dollar or pound spent on disk, it will cost an additional 15x just to manage it, the cost of placing all your data on more expensive mediums will soon become a major problem for your organization," Cotterill says. "Hospitals require more innovative storage solutions that help lower the cost of storing, managing and making the data available for use."

For one, healthcare organizations are drawing a line in the sand between the level of service clinician's desire and what is realistic for the organization to provide. The downstream effect in settings where real-time data isn't critical will likely be a bit more lag time between the request and when the data is delivered.

A multi-tier healthcare storage virtualization strategy that calls for data to be transferred from primary storage systems after a certain period of time, enabling the organization to keep multiple copies of the document in different media types, in different locations, has great value. A solution built upon vendor-agnostic technologies will allow healthcare providers to get the most out of their current storage assets while migrating to new solutions. "This will not only assist a healthcare organization in controlling costs, but it will also inject efficiency into their storage management efforts," Cotterill says.

"The 2010 Healthcheck survey is not intended to draw attention away from ever-critical front-end technologies that facilitate better healthcare delivery," Mallio says. "It does, however, highlight the need to develop enterprise-level storage management strategies that enable healthcare organizations to access the right data at the right time. Without it, hospitals risk spending money needlessly...funds that can be repurposed to upgrade clinical systems."

## About Healthcare Storage Virtualization (HSV):

Healthcare Storage Virtualization is a technology platform that decouples software applications from the allocation and management of the physical storage hardware on which the application data resides. By separating these applications from the storage devices, healthcare organizations have greater choice, flexibility and control over the way data is accessed, protected and managed. The net effect: better utilization of hardware resources and, more importantly, the efficient access and use of critical electronic patient data.

HSV allows healthcare organizations to take ownership of their data even though it may reside on disparate software and hardware systems. Being vendor-agnostic, BridgeHead HSV has the ability to interface with any storage platform intelligently, creating better and broader availability of content as well as prohibiting unwanted access and providing comprehensive disaster recovery capability.

In addition, BridgeHead HSV technology offers powerful connectivity to all storage media types. As part of its advanced data protection and archiving features, HSV allows files to be transformed (e.g. compressed and de-duplicated) invisibly in the background, irrespective of media type and functionality, vastly reducing the capacity required across the storage real estate and often delaying the need for hardware upgrades.

Finally, BridgeHead's focus on healthcare lies at the heart of HSV. Consequently, all of the common native standards found within healthcare IT are supported (e.g. HL7, DICOM, and XDS style interfaces). This support allows speedy integration of the HSV solution resulting in a more rapid return on investment.

For more information about HSV and to learn how your hospital can capitalize on this powerful technology, please visit BridgeHead Software at [www.bridgeheadsoftware.com](http://www.bridgeheadsoftware.com) or contact us at [info@bridgeheadsoftware.com](mailto:info@bridgeheadsoftware.com).



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