Microsoft Azure –
Secure Cloud for Healthcare

How cloud-based apps are transforming the landscape

After a slow start, the healthcare industry has begun to invest in cloud technology to extend the services it offers, having largely overcome historical concerns with regard to security.

According to the 2014 Cloud Survey by global healthcare advisor HIMSS Analytics, 83% of IT healthcare organisations are currently using cloud services while 92% of healthcare providers see the value of cloud services for their organisation.

The MoD’s main “customer” is the soldier in the field and its office staff, wherever they happen to be. Adoption of Office 365 in the cloud has been a first step and has been received largely positively.

There are three types of cloud application coming to prominence in the healthcare field, with 67% of IT healthcare organisations running Software as a Service (SaaS) based applications, 15.9% running on an Infrastructure-as-a-Service (IaaS) platform, and 2.4% using Platform-as-a-Service (PaaS) applications. What’s more, this rush to the cloud is showing no signs of slowing. A recent global market study, by Persistence Market Research, predicts that healthcare organisations will increase their spending on cloud computing services by 20% a year until 2020 – bringing the total value of these investments to over £8 billion.

This level of spend is perhaps unsurprising given the almost limitless potential applications for cloud-based services in the healthcare industry, including managing electronic medical records, picture archiving and communication systems, pharmacy information systems, radiology information systems and laboratory information systems.
Transforming patient care

According to American market research and analysis firm IDC – in their paper, FutureScape: Worldwide Healthcare 2016 Predictions – virtual medical care will become commonplace by at least 2018. The study estimates that within the next two years, 70% of routine doctor office visits will be managed via telemedicine while 80% of patient service interaction will make use of the Internet of Things (IoT) and big data to improve quality, value and timeliness. Another area of virtual care that is beginning to transform the healthcare landscape is mobile health (mHealth) – i.e. the use of wearable health monitoring technology and accompanying smartphone apps.

To deploy and manage these applications, healthcare providers need a scalable and flexible infrastructure – which is why one major reason the investment in cloud-apps within the industry to predicted to reach those astronomical levels I touched upon earlier.

Choosing the right cloud platform

At last year’s Healthcare Technology Forum in March 2015, Casey Watson, a Sr. Program Manager for Microsoft talked about the importance of cloud technology for healthcare companies. In particular, the forum looked at how platforms such as Microsoft Azure can offer healthcare providers integrated services for building, deploying and managing applications and services through a global network of managed datacenters.

Of course, Azure is not the only solution on the market, and it would be remiss to discuss the power of the cloud without mentioning Amazon’s AWS platform. According to the recent Gartner report, Key Services Differences Between AWS and Azure, the two platforms lead the way in the field, offering excellent networking capabilities by allowing applications to be deployed on a local or global level, relying on server load balancing components and direct network connectivity to link with on-premise systems.

In short, these cloud platforms provide both PaaS and IaaS services and support different programming languages, tools and frameworks, including provider-specific and third-party software and systems – allowing healthcare providers to deliver Core Customer Solutions via the Cloud. Naturally, there are pros and cons to each platform, while many see they sheer depth and breadth of AWS as a positive, for others it is simply too vast.
As for the Azure offering, its seamless integration with third-party applications along with the Microsoft stack that many are already familiar with, is seen as its biggest asset.

The use of these applications helps to streamline communication between doctors, patients and administrators by providing secure, real-time – and most importantly, centralised – access to patient information such as records, scans and reports.

Security in a data-intensive sector
Although adoption of cloud technologies is now accelerating, compared to the majority of industries the healthcare sector has been slow to introduce technical advancements in data storage, process management and connected data.

In 2013, CDW’s State of The Cloud Report found that just 35% of health IT professionals surveyed said their organisation was implementing or maintaining cloud computing in 2012, up slightly from 30% in 2011 – in comparison to 44% of leading business professionals in other industries who said the same.

Partly this is because the healthcare industry has traditionally been run on large, dispersed systems and infrastructure, causing it to be wary of the integration of new IT solutions.

What’s more, the healthcare industry has a historical scepticism toward the cloud when it comes to security, as IDC’s 2009 Cloud Computing Services Analysis – which found that 87% of those surveyed quoted security as the biggest blocker to cloud adoption – can testify.

However, with a recent cloud survey by HIMSS Analytics finding that only 6% of surveyed health organisations had no plans to use the cloud at all, it is safe to say that these traditional fears are nowhere near as pressing.

Cloud services achieve cost efficiencies
IDC Health Insights Predictions estimates that by 2020, 80% of healthcare data will pass through the cloud at some point in its lifetime, as providers seek to leverage cloud-based technologies and infrastructure for data collection, aggregation, analytics, and decision-making.
According to MarketsandMarkets, 73.4% of healthcare providers use the cloud to:

- Support financial, operational and HR applications
- Achieve cost efficiencies
- Free-up internal cycles for care critical applications

Modern healthcare organisations know that to grow they must be able to execute faster and scale easily while spending less money. The cloud’s resiliency and availability make it a cost-effective alternative to on-premise storage, enabling a fragmented industry to improve collaboration and services.

Secure storage and sharing
Cloud computing has enabled the sharing of electronic health records among healthcare practitioners and hospitals in different locations. By placing this information in the cloud, healthcare providers are able to reduce silos and allow their doctors to collaborate quickly and easily to decide on the best course of treatment for their patients.

Among many other benefits, this ease of access to data can eliminate the need for retesting and allow healthcare practitioners to:

- Access to vast storage capacities not achievable by conventional computing models
- Agility to collaborate while meeting changing security regulations and delivering better patient services
- Allowing personalised care anywhere in the world through secure data sharing

In conclusion
In a bid to catch up, healthcare organisations are moving fast to incorporate cloud into their IT strategies. Previously, the healthcare industry utilised cloud-based technologies for managing business applications to bring down costs rather than improve services. In future, cloud-based apps will form an integral part of accessible consumer healthcare such as telemedicine, mobile health and the remote monitoring of patient trends.

With security concerns abating, healthcare providers are increasingly exploring the wider benefits of the cloud. Encouraged by the success of cloud-based solutions for electronic health records, patient care management, and the delivery of patient services, they are now extending the cloud’s reach to encompass personal wellness monitoring.
As the NHS invests in new clinical strategies and additional nursing, technology is helping them to cost-effectively achieve improvements in patient outcomes, case management, data for public health, and tools that encourage healthier lifestyles.

The immense scale and reactive communications of cloud computing are enabling the delivery of better patient care at a lower cost. Healthcare organisations are seeing how cloud-based platforms such as Microsoft Azure can be rapidly adopted to allow them to shift the emphasis of healthcare from the hospital or clinic to the home.

Additional Sources:

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