No more on-prem? How quickly is the NHS imaging moving to public cloud?

With cloud-first policies in place for years, the NHS has become a cloud pioneer on the world stage. Barriers to translating policy into practice for diagnostic imaging technology are now being overcome, and on-premise enterprise imaging installations could very quickly become a thing of the past, writes Sectra's Guilherme Carvalho.

A tipping point is being reached for medical imaging. Internet-first and cloud-first strategies have been part of NHS digital policy for many years. Now they are beginning to be put into practice for diagnostic disciplines, with a rapid acceleration of public cloud enterprise imaging set to follow early exemplars.

For NHS technology more widely, public cloud isn't new. Heavily text-based systems such as electronic patient records, for example, have already been able to leverage the many advantages that public cloud brings.

But with individual diagnostic studies sometimes containing hundreds or even thousands of high-resolution pictures, imaging disciplines have faced obstacles in doing the same. The NHS produces millions of large files daily, and this has until recently made public cloud prohibitively expensive as a means to store and retrieve many petabytes of data.

Cloud cost viability – no longer an issue for NHS imaging?

The cost barriers associated with the vast amounts of storage required for diagnostic imaging are however now being overcome, partly due to advances in public cloud technology.

Economies of public cloud are consequently now reaching financial parity with on-premise delivery, bridging what has, until recently, been a very disparate gap when it comes to the 'sticker price' of hardware.

Arguments that reduced requirements for hospitals to manage their own datacentres, and associated staffing and power requirements, have suggested that the total cost of ownership has been lower for cloud for some time. But new business cases are also now starting to show that public cloud is more cost-effective than on-premise hardware, before any 'hidden' savings are considered – creating compelling arguments for finance teams.

Cloud native solutions are consequently increasingly being sought by customers, who want to reduce the burden of managing their own datacentres and applications, and who want to be able to leverage scalability in support of convergence strategies across NHS imaging networks and integrated care systems.

A spike in demand for public cloud is not only the case for radiology, but for digital pathology, an even larger producer of data that can take advantage of tiered storage, where archives can be created for slide images that do not require rapid access for immediate clinical decisions.

A significant milestone, preceding rapid momentum

Intent to move to public cloud is also now translating into signed agreements. An increasing number of large enterprise imaging contracts are being awarded on the basis of public cloud provision – even one [national contract for Scotland](#) signed towards the end of 2023.

An important milestone was also announced in February 2024, when Homerton Healthcare NHS Foundation Trust reported that its radiologists had demonstrated the benefits of deploying its enterprise imaging solution using a fully managed Software as a Service model in the public cloud.

The first NHS site to do this, during the summer of 2023, the trust has overcome any doubts that might have existed around performance, with radiologists efficiently accessing patient imaging from a secure public cloud, just as quickly as accessing data stored on-premise.

Using a SaaS public cloud model, also means security benefits, multiple layers of resiliency, timely access to the latest functionality, and the ability to only pay for what is needed now. It is very difficult for trusts to accurately predict storage requirements that might be needed ten years into a contract. Regional services models evolve, organisational boundaries change, and the resolution of modalities improve – meaning that storage requirements also change. But investment in a set amount of tin isn't necessary in public cloud agreements that can be easily expanded to account for the integration of more diagnostic disciplines, or to easily bring more NHS sites into the same agreement.

Public cloud can also mean that deployments can be standardised, substantially reducing duplication of work and the cost and time needed for future implementations.

How quickly will public cloud be ubiquitous?

Cloud has now become part of almost every contractual conversation we have with NHS customers and prospects.

Even those part way through existing on-premise agreements are exploring mid-contract public cloud capabilities. Rather than procuring additional on-premise storage during a hardware refresh, many customers are investing in public cloud storage to support any additional storage needs – a stepping stone to their eventual intention to move to fully native public cloud solutions.

Tenders that specify the need for on-prem deployments are also increasingly rare in the NHS. And while not all tenders actively detail the need for public cloud, many are receptive to supplier proposals that deliver this.

It is now six years since NHS Digital implemented an Internet First policy in March 2018, in which it specified the need to move beyond on-premise services. This was in line with wider government cloud first strategic direction, dating back as far as 2013.

One might understandably conclude that as it has taken so much time to achieve the first SaaS public cloud implementations for NHS enterprise imaging, that it might continue to take many more years for this approach to become widespread.

But given momentum in the market, the removal of major cost obstacles, and the benefits that can be delivered, a rapid acceleration of public cloud adoption is more likely.

I would suggest more progress will be seen within months, and that in the next three years the overwhelming majority of new deployments will be public cloud, with more progressing their plans to follow.

Achieving this would be a good news story for diagnostics that could help to break down discipline and organisational silos, enhance collaboration, get important tools into the hands of healthcare professionals sooner, and support innovation in diagnostic pathways that could enhance patient care.