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Diagnosing the big-data opportunity for the public sector

The need to improve services while cutting costs is a major challenge for NHS organisations. In the commercial world, many firms have successfully used big data analytics to achieve the same goals through improved decision-making and tightly targeted investments. NHS organisations certainly have the necessary data, but they are typically constrained by the size, age and complexity of their data estates. This brief outlines the challenges and opportunities, and presents a potential solution.

Focusing on data

Data has long been seen as a key source of competitive advantage in the commercial world. The public sector is equally aware that data – when properly exploited – can transform operations and boost efficiency. However, public bodies typically face greater barriers in moving from awareness to action.

Clearly, public bodies possess huge volumes of valuable data on services, assets, citizens, finances and more besides. For NHS organisations, the data also extends to encompass a wealth of personal information about healthcare. If this data could be made accessible – with the appropriate level of security – to employees and other stakeholders, the benefits in terms of cost savings and service improvements would potentially be enormous. In an age of austerity, the promise of unlocking the value of data to improve efficiency and enable new capabilities is naturally very attractive.

The House of Commons Science and Technology Committee has estimated that the NHS could achieve anything from £16 billion to £66 billion in cost savings through big data analytics.

Wealth of opportunities

There are significant benefits in giving decision-makers access to big data and the tools to analyse it. In financial management and reporting, big data analytics can make it much easier to demonstrate the all-important Value for Money, as well as simplifying financial transparency and compliance initiatives. The ability to base decisions about services and staffing on evidence rather than gut feel can significantly improve service quality and efficiency. And being able to understand what services citizens and patients want is invaluable in planning where and how to invest in future capabilities.

Obtaining these insights depends on bringing together in an enterprise-wide view data that is currently split across multiple silos, and layering self-service business intelligence and analytics tools on top.

Barriers to change

For NHS organisations making the transition to a data-driven, “Digital First” approach, there are a number of potential obstacles to overcome before the expected cost savings and service improvements can be achieved. The most significant of these is likely to be the complexity of the existing data estate.

In many organisations – public and commercial alike – the data estate has grown over the years in a largely uncontrolled manner as new requirements and technologies have emerged. The lack of a coherent strategy over the years will have contributed to a sprawling mix of different systems, each in its own silo and potentially with its own unique technology stack.

> *Northdoor helped us to clearly understand what our migration options are from a SQL Server environment design and licensing perspective. Their work has helped us to minimise costs and enabled us to make the right decisions with regard to selecting the most appropriate SQL Server licensing model and environment migration path for the future.*
>
> Garry Tatton, Assistant Director of Operations, Royal Bournemouth and Poole NHS Trust

The software and hardware present in the data estate may be outdated, and potentially unknown dependencies between critical applications may contribute to the sense that the problem is too risky to fix. There may be a lack of clarity over software licensing, and the perceived effort and skills required to understand the costs and benefits of upgrading increase the temptation to keep things as they are.

For today's operations, these challenges imply higher support and management costs, lower efficiency, potential compliance and data-security issues, and ongoing difficulty in delivering actionable insights to the business. They also imply that the data estate will not have the necessary integration, performance, scalability and security to meet the needs of tomorrow's data-driven organisation – particularly as the age of personalised medicine dawns.

Of course, recognising that the data estate is no longer fit for purpose is just the first step. Setting out to transform it highlights another potential barrier for public sector organisations: the skills gap.

Data estate modernisation is far from simple – it demands careful assessment, planning, design, architecting, and execution. Internal NHS IT personnel may well have deep and well-developed skills in managing and maintaining the existing data estate, but this does not necessarily mean they have the skills to migrate to a new one.

Breaking through

Given budgetary limitations, NHS organisations are unlikely to have the luxury of a "big bang" transformation. Rather than being able to start from a blank sheet of paper and build a best-of-breed data estate, they will need to assess the resources they already have in place and determine how best to knit them into a fit-for-purpose solution for the future.

In many cases, targeted upgrades of critical software can have an immediate transformative effect, particularly where the software in question is out-dated. A carefully planned upgrade programme could therefore enable significantly higher workload density on existing infrastructure, cutting licensing, management and maintenance costs. More important, it could provide the performance and availability boost required to deliver more effective decision-support tools to the business.

As previously noted, adapting the existing data estate and making the best possible use of past investments may require skills that are not readily available internally. Equally, engaging an external consultancy to perform a full transformation exercise is potentially risky and almost certainly unacceptable from a budgetary standpoint.

Bridging the skills gap in an economically viable way, the Northdoor SQL Server Advisory Service is designed to help public sector organisations understand the migration options and make the best decisions. Starting from a full review of the existing data estate, the Northdoor solution provides a comprehensive analysis of the gaps and what needs to be done to close them. Armed with clear recommendations, the internal team can then start the transition process in a controlled and efficient way.

For more information

To find out how the Northdoor SQL Server Advisory Service can help your organisation modernise its data estate and unlock the benefits of big data, contact Northdoor.

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