Case Study: OpenEHR, The UK in 2024 Phase Three "Open Source and Market Shaping"

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Rachel Dunscombe is the CEO of OpenEHR International. Until August 2022 Rachel spent over five years as the CEO of the NHS Digital Academy. She has provided advisory services to the Secretary of State for Health, been a member of the UK government AI council and through her academic work Rachel has received a Visiting Professorship at Imperial College, London. Rachel is formerly the Director of Digital/CIO for Salford/NCA Group (NHS Hospital Group) which under her leadership was the NHS's most digitally mature organisation. Rachel also sits on the Digital Health Society Board of Directors and is an editor at BMJ Leader.

Case Study: OpenEHR

OpenEHR is redefining the healthcare data landscape by leveraging open source software to create a standardised, interoperable data model that addresses one of the health industry's most pressing issues: data inconsistency.

The company's mission, as with the King's College project in our last report, is to combat the fragmentation of clinical data, which has historically impeded effective healthcare analytics and AI applications, by making clinical data more accessible and interoperable. OpenEHR's commitment to open source principles has not only solved critical data challenges but also reshaped the healthcare market, enabling global collaboration and innovation.

The Role of Open Source in Healthcare Innovation

An open source approach is central to OpenEHR's success and impact. By licensing its data model under a Creative Commons licence and its software platform under an Apache 2.0 open source software licence, they have empowered a global community of clinicians, engineers, and researchers to contribute to and benefit from their standardised data framework. This collective effort has enabled the creation of a robust, peer reviewed system that can adapt to the complex and evolving needs of the healthcare sector.

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OpenEHR's open source platform coupled with open data supports interoperability across various healthcare systems, making it possible for different providers to access and share patient data seamlessly. This is vital in a sector where data is often siloed and unnecessarily hindering patient care and research.

Market Impact

OpenEHR's open innovations are beginning to have a transformative impact on the healthcare market. Traditionally, healthcare data has been fragmented, stored in disparate systems, and recorded in inconsistent formats, making it difficult to use for research, analytics and patient care. OpenEHR's standardised data model has the potential to address these problems, reducing dependency on proprietary systems that often lock data in inaccessible formats if widely adopted. Additionally, it allows smaller healthcare providers to adopt high quality data standards without the prohibitive costs associated with commercial solutions.For example, the adoption of OpenEHR's model in Catalonia has led to fully integrated national healthcare records, significantly improving the efficiency and quality of care.

In the UK, OpenEHR's data model underpins parts of the NHS, providing a consistent framework for patient data across different regions and systems. This widespread adoption illustrates the scalability and versatility of OpenEHR's open source solution, which can be customised to meet the specific needs of diverse healthcare environments is a critical factor in the shaping of the software and data markets in the NHS and a broad adoption will be essential in shaping the NHS and healthcare market in the UK.

Enabling Global Collaboration and Research

One of the biggest impacts of OpenEHR's open source model is its facilitation of global research and collaboration. By creating a standardised framework and thereby more consistent data, OpenEHR have made it easier to conduct large-scale studies and share findings, and have enabled more accurate and reliable AI models, which are crucial for research in areas like rare diseases and personalised medicine.

OpenEHR is currently involved in a collaborative study in Germany to analyse the impact of data quality on AI performance in healthcare. This research aims to provide empirical evidence of how standardised data improves AI accuracy and safety, potentially setting new benchmarks for the industry.

Challenges and Future Directions

Despite OpenEHR's successes, their work is not without challenges. The company relies heavily on in-kind support from tech companies and universities, which poses sustainability risks in terms of maintenance and management - curation - of its outputs. To address this, OpenEHR are implementing a conformance testing program that will certify organisations for compliance with its standards, generating a new revenue stream, enabling them to pay for their own excellence and future maintenance and ensuring that organisations claiming compliance with their standards are genuinely adhering to them.

Despite facing resistance from traditional standards bodies, which are often sceptical of community led initiatives, OpenEHR have made significant strides, gaining membership in key international organisations. While this shows that open source, community developed standards can be just as rigorous and effective as those developed through more conventional means, it is yet to be seen to what extent this has been realised within the UK.

Conclusion

OpenEHR's open source software and open data have revolutionised the healthcare market by providing an accessible, scalable solution to the complex problem of data fragmentation. Through global collaboration and a commitment to open standards, OpenEHR is not only improving patient care but also setting the stage for the future of healthcare innovation. As the sector continues to evolve, the company's open source approach will remain a critical driver of change, enabling a more interconnected and effective global healthcare system.

While OpenEHR has made significant strides in addressing healthcare data inconsistency worldwide, there is still a long way to go for the UK. Data fragmentation remains a persistent challenge, with different NHS Trusts and regions continuing to use a variety of legacy systems that often fail to fully integrate with modern open source frameworks. Until these gaps are bridged, the true potential of open source platforms such as this will not be fully realised. But with important steps being made by organisations like OpenEHR, the future of healthcare data management is hopeful.