Royal Marsden's Trial of an Open-Source Finance System is Deemed to be a Success

This paper is published by Bramble Hub, and was written by:

- *Patrick Highland, Programme Manager for Technology and Innovation at Royal Marsden Hospital*

- *Elliott Jones, Technical Author at OpusVL*

- *Jerry Barnett, Digital Marketing Manager at Bramble Hub*

Any enquiries about this document should be directed to Jerry Barnett via email *or* LinkedIn*. Enquiries about OpusVL and their Open Approach for the NHS should be directed to* OpusVL*.*

Part 1: The Case for an Open-Source Approach in the NHS
INTRODUCTION

It will come as no surprise to most UK citizens that the NHS is struggling to maintain a safe and effective service with its limited resources. Faced with a sustained increase in demand for services, rising inflation and the costs of tackling the Covid-19 pandemic the NHS is likely to see the recently formed Integrated Care Boards (ICBs) struggling to balance their budgets in the coming years. So concluded a recent report by the Kings Fund, a view which is reinforced by evidence that some ICBs were already forecasting a deficit after only seven months into the financial year 2022/23[1].

Fortunately, the NHS is a resilient body staffed by committed individuals for whom work is more than just a job; but goodwill can only fill the gaps in resources for so long, and in the absence of unlimited funding, the NHS must innovate if it is to flourish. Therefore, this paper focuses on the role that technology can have in helping the NHS to balance its books and to continue to deliver the best in patient-centred care.

Technology has been a part of the workplace fabric for decades, assisting employees in executing their roles and supporting an organisation's strategic goals. But of late, technology's role has begun to change from delivering functional effectiveness to delivering strategic change. No longer simply a tool deployed to support a business's operational strategy and deliver bottom line efficiencies, IT is used to deliver additional business competencies that enable new strategies which are increasingly vital to the success of any enterprise[2].

However, despite the overwhelming evidence that technology can be used to realise operational efficiencies and achieve strategic effectiveness - something that could alleviate

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1 Kings Fund, 2022, NHS trusts in deficit. Available at:
https://www.kingsfund.org.uk/projects/nhs-in-a-nutshell/trusts-deficit, (Accessed 12 December 2022).

2 James D. McKeen and Heather A. Smith (2015) IT Strategy: Issues and Practices, 3rd Global Edition, Harlow: Pearson Education Limited.

the financial stress placed on the NHS - a review by the Nuffield trust found that the organisation was nevertheless slow to adopt well-evidenced technology innovations[3].

In response to the financial pressures faced by the NHS and flying contrary to the cautious approach to technology adoption by other NHS organisations, this paper will explore the decision by the Royal Marsden NHS Foundation Trust to pursue a technology-led approach to strategic change by deploying an Open-Source solution and what that decision could mean for the NHS as a whole.

WHAT IS OPEN SOURCE, AND WHY USE IT?

Unlike traditional proprietary software development that takes place behind closed doors - where the only way to access this IP (Intellectual Property) is to pay a license fee - Open-Source software is developed collaboratively 'in the open.' The Open approach allows developers world-wide to have at their disposal a tool kit of software that can be used and re-used to resolve problems in any environment or industry, with the added benefit that it can be acquired and consumed in perpetuity without any financial investment.

More significantly, the Open-Source approach also allows organisations to download and customise the underlying source-code to meet bespoke requirements and achieve outcomes that might not be possible via traditional means. This 'freedom to modify, share and re-share' philosophy has significant implications for the NHS. By allowing digital solutions to be shared without additional cost, Open-Source allows NHS investment to be maximised because a financial investment made by one can benefit all: shared problems can be solved by shared solutions.

A further consequence is that free-to-share solutions lower the financial barrier preventing organisations from accessing technology at scale. As trusts seek to achieve HIMMS maturity and ICBs attempt to increase interoperability across their patches while government seeks increased accountability and value-for-money from public investment, pursuing a technology strategy that champions free to share solutions should resonate across an NHS with limited resources.

As Patrick describes: "At its heart the NHS is an altruistic entity that democratises healthcare for all, and one can see these core principles mirrored in the Open-Source approach to delivering technology solutions. We invested in a functional system that can be freely downloaded by other organisations in the domain, to use and develop as they see fit."

Part 2: How Open Source was used at the Royal Marsden
THE ROYAL MARSDEN'S OPEN-SOURCE JOURNEY

In 2020, the Royal Marsden's existing third-party pharmacy delivery arrangement ended. This operational change led the Trust executives to establish a wholly owned subsidiary to run pharmacy services going forward. The decision to bring the service back under the Trust's

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3 Nuffield Trust, 2017, Falling short: Why the NHS is still struggling to make the most of new innovations. Available at: https://www.nuffieldtrust.org.uk/research/falling-short-why-the-nhs-is-still-struggling-to-make-the-most-of-new-innovations (Accessed, 12 December 2022).

control brought with it a significant obstacle, namely the requirement to speedily implement within a three-month window a back-office solution capable of running the operation's financial activities.

Analysis of the costs for adding the pharmacy solution to the Trust's incumbent financial software supplier was deemed to be prohibitively expensive. Therefore, under the guidance and leadership of Patrick Highland, Royal Marsden's Programme Manager for Technology and Innovation, the Trust took a step away from traditional proprietary software towards using Open-Source technology because of its potential to deliver a solution without recurrent annual licensing costs.

THE REQUIREMENTS

Royal Marsden required an efficacious finance system that delivered an intuitive user experience to reduce the challenge of user adoption and one that provided scope to develop new functionality to deliver continuous improvement. It was also critical that any solution was robust, secure and capable of adapting to emerging cyber-threats which continue to pose an ever-increasing threat to the NHS. From a functional perspective the system was required to integrate with existing systems and improve user's working lives through task automation and provision of real-time financial reporting and transactional drill-down capabilities to facilitate forensic analysis of accounts.

THE OBJECTIVES

The project had two primary objectives: the first was the successful delivery of a system for the Royal Marsden's pharmacy subsidiary that met the requirements laid out by the Trust. Secondly, but perhaps more fundamentally, was the creation of a new digital product that was immediately shareable with other organisations that could exponentially increase savings across the NHS.

THE SOLUTION

Based on the Enterprise Resource Planning (ERP) software, Odoo, the Royal Marsden worked with OpusVL, in partnership with Bramble Hub, to develop Odoo Open Source ERP: NHS Finance Edition.

Configured to meet Royal Marsden's functional needs, the solution integrates with existing pharmacy dispensing and banking systems and is fully compliant with HMRC's Making Tax Digital requirements. The system also delivers operational efficiencies with automated back-end data integration while delivering real-time financial analysis and reporting capabilities via its built-in Business Intelligence tool. The platform also has access to Odoo's application marketplace, which contains thousands of pre-developed applications that can be acquired at either zero or minimal cost. With active threat horizon scanning, the system provides a cyber-resilient environment through daily security updates.

By opting to implement an Open-Source solution, the Trust saved itself £200,000 in software license fees over 5 years. There are other, less tangible benefits, such as flexibility, self-determination and a sense of control. As Patrick Highland points out, "Without vendor lock-

in, I can own and run the system myself or approach any third-party of my choosing to support the system and develop additional functionality."

Already in use at Royal Marsden for over two years, the solution's source code is freely available for use by other NHS organisations.

Earlier this year, the Odoo Open-Source ERP: NHS Finance Edition was recognised by NHS England's One NHS Finance Innovation Forum as part of its first cohort of NHS finance innovations, with the corresponding case study entitled 'Embracing open source technologies.'

Part 3: About Odoo and Opus VL
WHAT IS ODOO?

Odoo is a comprehensive Open-Source ERP solution from Belgian Company Odoo SA. Delivering functionality beyond core finance with modules covering CRM, Inventory, HR and Marketing to name but a few, Odoo has over 7 million customers across the globe

Odoo's ERP has been created using an Open-Source development model and is backed by private investment which recently valued the company at over $3 Billion[4]. Although the full version of the Odoo ERP is only available on a commercial basis, their Open-Source philosophy means that they are committed to releasing a 'Community' Open-Source version containing the core solution that can be freely downloaded, developed and modified as desired. It is this core platform that underpins the Odoo Open-Source ERP: NHS Finance Edition deployed by the Royal Marsden.

OPUSVL

Open-Source software specialist OpusVL is a Bramble Hub partner and passionate advocate of the Open Approach. The company has successfully delivered several mission-critical Open-Source solutions to NHS organisations in recent years; these include NHS Digital, South London and Maudsley NHS Foundation Trust and of course, Royal Marsden.

Whilst Odoo provided the core code upon which Royal Marsden's ERP solution was based, OpusVL's development capabilities enabled them to develop additional functionality such as Role Based Access and Making Tax Digital modules to meet all the Trust's requirements.

NHS Trusts that are interested in learning more about the platform and what Open Source can do for them, please contact OpusVL for information.

OpusVL's products and services are available through procurement frameworks via Bramble Hub.

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[4] Tech.eu, 2022, Belgian open source business software scale-up Odoo hits €3.2 billion valuation. Available at: https://tech.eu/2022/06/08/odoo-a-leader-in-open-source-business-software/ (Accessed 20 December 2022).

HOW TO ACCESS ODOO

The Odoo Open-Source ERP: NHS Finance Edition can be acquired free-of-charge from the online software repository, [GitHub](#).

The source code for Odoo's Community Edition can be freely [downloaded](#) directly from Odoo's website.

CONCLUSION

In choosing to implement an Open-Source software solution, as opposed to using traditional proprietary software, Royal Marsden's journey to meeting their functional and fiscal needs has created an IT value proposition that focuses not just on delivering an improved bottom line but on delivering top-line business value for the entire NHS.

Making clear cost savings, meeting unique requirements and delivering an innovative solution recognised by national NHS bodies that can be freely shared with other organisations is a notable achievement for Royal Marsden and is an exemplar of what can be achieved if the NHS is to flourish in a challenging economic environment.

Hopefully, this success story will help other organisations to recognise the potential of taking an Open approach to healthcare systems, focused on using Open-Source technology and promoting open standards for interoperability and data sharing.