

NHS Digital Services, the challenge ahead

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The challenge

Digital technology as a medium

Openness and digital

- Open governance

- Open source

- Why openness matters

Benefits of Openness

- Clinical

- Commercial for the NHS

- Safety

- Commercial in the UK

- Research

Meeting the challenge

Questions and discussion

The challenge

- ▶ Technology is changing the world, and our expectations
- ▶ Corporate IT is lagging behind personal IT
- ▶ The NHS, and UK PLC, can't afford to lag behind

The medium is the message

- ▶ The world is becoming more digital and so is health
- ▶ The medium used to support, and deliver health, matters
- ▶ The medium should be digital but we must do it right

Openness = Open governance + Open source

- ▶ In project governance terms openness in digital services is characterized by:
 - ▶ Access: availability of the latest source code, developer support mechanisms, public roadmap, and transparency of decision-making
 - ▶ Development: the ability of developers to influence the content and direction of the project
 - ▶ Derivatives: the ability for developers to create and distribute derivatives of the source code in the form of spin-off projects, handsets or applications.
 - ▶ Community: a community structure that does not discriminate between developers

Openness = Open governance + Open source

- ▶ Open projects use open source software. Open source software refers to software which comes with rights that proprietary software doesn't such as the right to study, change, improve, and distribute the software. This has particular advantage in healthcare digital services because it lowers costs, promotes interoperability, and makes open standards possible.

Openness is strategically important

- ▶ Being open allows social collaboration (co-production) and gives a competitive advantage (lower costs, more innovation, higher quality)
- ▶ Openness is now standard to the technology industry and some parts of government (Cabinet Office)
- ▶ Openness in technology fits with the openness found in medical and academic culture (no room for black boxes)

Open standards and Open source

- ▶ The general purpose network (the internet), the general purpose computer, and openness lead to new methodologies, technologies, and possibilities.
- ▶ Standard setting is complex and highly political because of the strategic importance it holds for industry.
- ▶ As health care professionals, patients, and policy makers, it is our duty to act to reduce costs, improve interoperability, and foster choice and innovation, in a critical and evidence-based fashion.

Why have standards?

- ▶ Why have standards (the good)
 - ▶ Interoperability (avoiding fragmentation, but sadly not guaranteed e.g SQL)
 - ▶ Lower costs (healthier market, more choice, lock-in prevented, greater flexibility, more players because lower barrier to entry inc smaller vendors)
 - ▶ Diffusion of innovation
- ▶ Why not have standards (the bad)?
 - ▶ Standards can be subverted by large corporations to create fragmentation and higher costs
 - ▶ Can be resource intensive (to establish and maintain)
 - ▶ Poorly described standards inhibit the ability of talented software developers to come to the party

What's needed to have a successful standard?

- ▶ A successful standard:
 - ▶ Balances not allowing extension, which may prevent evolution of the standard and stifle innovation, with allowing proprietary extensions, which can lead to the subversion of a standard.
 - ▶ Achieves and maintains the aim of having competing implementations of the same standard, making the substitution of alternative components possible in reality, not just theory.
- ▶ What's needed to have a successful standard?
 - ▶ Voluntary adoption or the ability to enforce standard (ensures interoperability)
 - ▶ Community/Government/Business resource to manage standard (permits innovation)

Open source vs Open standards

- ▶ Much more likely where an open source implementation exists because
 - ▶ an open source implementation acts as a reference implementation, revealing standard specifications that are unnecessarily hard to implement or contain specification flaws
 - ▶ OSS tends to enjoy wide diffusion and dissemination, facilitating adoption of the standard.

Benefits of Openness

- ▶ Clinical:
 - ▶ It makes work easier for doctors, nurses, ward managers, hospital managers and paramedical staff
 - ▶ It reduces the chances of important info being overlooked
- ▶ Commercial for NHS:
 - ▶ It will reduce procurement cost, new systems and updates
 - ▶ It makes process audits easier
- ▶ Safety: It makes safety audits easier
- ▶ Commercial for UK:
 - ▶ It encourages innovation of interoperable systems that will be desirable for export markets, brings sales and service contracts
 - ▶ It allows SMEs to compete on a more equal footing
- ▶ Research: It facilitates research through linked data, easier exports

Through leadership that understands technology and is bold enough to modernize digital services delivery by embracing openness (open governance and open source)

- ▶ Policy: Open Standards Consultation, Procurement Policy Notes, NHS Information Strategy
- ▶ Pilot centre(s) Foundation Trusts, Academic Health Science Centres?
- ▶ NHS Hack Day

Questions and discussion

- ▶ Any questions?
- ▶ Collaboration?
- ▶ Comments?
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www.nhshackday.com

Credits and References

- ▶ I am grateful to Jeremy Wyatt, Tom Taylor, and Ben Goldacre for providing some of the ideas and material presented in this presentation.
- ▶ A new way of measuring openness, from Android to Webkit: The Open Governance Index
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- ▶ Reynolds CJ, Wyatt JC. Open Source, Open Standards, and Health Care Information Systems. J Med Internet Res 2011;13(1):e24. doi:10.2196/jmir.1521.
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