

Open Source Healthcare

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(/index.php?id=66)**Open Source in healthcare**

The more you look at it, the more sense it makes to deploy open source software in healthcare. Open source software is customer- and user-centric, it evolves bottom-up. Moreover, open source software can add maximum value, even on relatively short term.

DUTCH version (/index.php?id=65)

Open Source Software

Wikipedia (http://en.wikipedia.org/wiki/Open-source_software): "OSS can be defined as computer software (http://en.wikipedia.org/wiki/Computer_software) for which the human-readable source code (http://en.wikipedia.org/wiki/Source_code) is made available under a copyright (<http://en.wikipedia.org/wiki/Copyright>) license (<http://en.wikipedia.org/wiki/License>) (or arrangement such as the public domain (http://en.wikipedia.org/wiki/Public_domain)) that meets the Open Source Definition (http://en.wikipedia.org/wiki/Open_Source_Definition). This permits users to use, change, and improve the software, and to redistribute it in modified or unmodified form. It is often developed in a public, collaborative manner. Open source software is the most prominent example of open source (http://en.wikipedia.org/wiki/Open_source) development and often compared to user generated content (http://en.wikipedia.org/wiki/User_generated_content)."

Don't make yourselves any illusions, free availability is **NOT equal to free!** The use of open source software may be free, but adaptation, implementation, installation, configuration of parameters and maintenance are **not** free. I will omit the calculation of total cost of ownership of open source software, and concentrate on the added value, because this added value unveils the **real** potential of open source software in healthcare.

Open source software key factors of success

From Open Source Values - Meritocracy, Transparency, and Legitimacy (<http://crossoverhealth.wordpress.com/2006/12/06/part-2-open-source-values-meritocracy-transparency-and-legitimacy/>):

Transparency

Open source forces you to stand naked before the world. As the ultimate peer review process, your code is out there for the world to see, touch, and judge. But within the scope of business, it goes beyond just source code. Your business practices are also transparent to the world.

Meritocracy

In an open source world, you are judged by what you DO. You either produce code, close customers, build value, or you die. End of conversation.

Legitimacy

Achieving either of the above, enables you to gain influence with your customers and within your community. And it can't be a one hit wonder either, as legitimacy implies a proven track record over time. In Open Source, it is all about trusted voices (branding).

Transparency, meritocracy and legitimacy guarantee quality software.

If the source is closed, how can you be sure if the product is safe? If the source is closed, how can you be sure what you buy *exactly*?

Necessities for software in healthcare?

1. User-Friendliness

Healthworkers should not lose time with long dull boring courses to understand complex software, no more -button overloaded- interfaces, no more restrictions to the number of users, no more (cost-)restrictions regarding adjustability and creativity, no more propriety difficulties regarding integration and migration, no more loss of employee cost and time due to complicated software, ...

2. Interoperability

Software product X should communicate easily with software products Y, Z, F3μ, 15J7, ... **Open standards are an absolute must** in a chained healthcare system where processes should be tuned in to one another. It is essential that it should be child's play to couple, link, filter, mix, trim, ... different data-streams to one another, internally as externally. User friendly open standards **facilitate communication** between different user-groups, in the first place between between the directly involved people, namely customers and caregivers. In second place filtered data can be opened up to third parties: MD, family, supplier, pharmacist, logistics, ..., and this by any means (letter, browser, email, SMS (http://www.cio.com/article/371714?source=nlt_cioinsider), Twitter (<http://pulseandsignal.com/2008/05/22/healthy-possibilities-with-twitter/>), ...). Interoperability gives the possibility to rearrange data from a variety of different data-streams or mashups ([http://en.wikipedia.org/wiki/Mashup_\(web_application_hybrid\)](http://en.wikipedia.org/wiki/Mashup_(web_application_hybrid))), in such a way that the end-result enables quality decision-making. In healthcare decisions should not be hindered for propriety reasons.

3. Customisation and Simplicity

This third factor comes forth from the first two. Open source allows easy altering of software in accordance with the **demands and wishes of the end-users**. If one is allowed to alter layout, parameters and connections, it is quite obvious that the final product will be tailor made and trimmed down to it's beautiful simple essence.

4. Speed

Development velocity of open source is very high. Main cause is the large number of developers that is actively involved worldwide. Chances are fairly high that someone, somewhere is working on a similar solution or connection, and will be happy to share his or hers knowledge on the subject. Open source encourages creativity and the development of all kinds of extra functionalities (add-ons, widgets, modules, ...) and connections. This results in extreme flexibility; not only in swift reactions to rapid changing legislations, but also in coping with fast evolving customer expectations (paradigm shifts).

From Open Innovation (http://en.wikipedia.org/wiki/Open_Innovation) (Henry Chesbrough): Over time, organizations that learn faster will outperform even quite capable organizations, if those latter organizations are slow to adapt to a changing environment. As business environments become more complex and more turbulent, it becomes increasingly important to be adaptive. Playing poker becomes more and more useful, whereas playing chess in such environments is less and less effective.

About Health 2.0

Health 2.0 (from Health20 Wiki (http://www.health20.org/wiki/Main_Page)): Expansive definition "*New concept of healthcare wherein all the constituents (patients, physicians, providers, and payers) focus on healthcare value (outcomes/price) and use competition at the medical condition level over the full cycle of care as the catalyst for improving the safety, efficiency, and quality of health care*"

Traditional definition--"*The use of social software and light-weight tools to promote collaboration between patients, their caregivers, medical professionals, and other stakeholders in health*" Source: Adapted from Jane Sarasohn-Kahn's ["Wisdom of Patients" report <http://www.chcf.org/documents/chronicdisease/HealthCareSocialMedia.pdf>] (<http://www.chcf.org/documents/chronicdisease/HealthCareSocialMedia.pdf>), by Matthew Holt

Identifying Health 2.0 Companies:"*Next generation health companies that leverage the principles of openness, standards, and transparency; utilize the technology tools of collaboration, information exchange, and knowledge transfer; and focuses on delivering value added services that empower health participants (patients, physicians, providers, and payers) with freedom, choice, and accountability for health outcomes.*"



From: The Pew Internet and American Life Project

(e-Patients White Paper .pdf 126 p. (http://www.e-patients.net/e-Patients_White_Paper.pdf))

- 93% of e-patients said it was important that the internet made it possible to get the medical information they needed when it was most convenient for them.
- 92% said that the medical information they found was useful
- 83% of e-patients said it was important they could get more health information online than they could get from other sources
- 81% said that they learned something new

- 80% of e-patients visited multiple medical sites. A few visited 20 sites or more
- 72% of e-patients searched for medical information just before or after a doctor's visit.
- 70% said that the information they found influenced their medical decisions

From: Healthcare and Emerging Rich Web Technologies (<http://www.obbec.com/specialreports/1828-healthcare-and-emerging-rich-web-technologies-the-web-20semantic-web-challenge-and-opportunity?showall=1>):

The interpretation of patient data is difficult and complicated, mainly because the required expert knowledge in each of many different medical fields is enormous and the information available for the individual patient is multi-disciplinary, imprecise and very often incomplete. As a result, there is an urgent need for tools that can aggregate information from multiple sources to improve health care decision making, enhance health management, and produce better patient outcomes. This is one of the main drivers for the use of the Internet in healthcare.

Who benefits from Open Source?

Patients or better: endusers

By openness and ease of use (http://www.linkedin.com/answers/technology/software-development/TCH_SFT/243401-5931120) of the system, decisions will be better based and analysed, and thus will be of better quality. At the same time the patients will be better informed and will be able to interact with the system.

In stead of a passive object, the patient evolves into a proactive customer (http://www.readwriteweb.com/archives/top_health_20_web_apps.php) and "consumer of health services". Open source can offer frameworks that allow to cope with such end-users and vastly improve upon their perception of these health services.

Health-workers

Efficient, interconnected and userfriendly software tools allow meaningful and swift registration of care, avoiding mistakes and assure an improved treatment (<http://blog.wired.com/wiredscience/2008/02/report-pushes-o.html>). Moreover they lower labour time, cost and stress. Probably they even heighten employee job satisfaction and lower absence rates!

Management

Efficient, userfriendly and open products simplify data-coupling, data-filtering and data-combination and thus allowing to build intelligent cockpits (http://en.wikipedia.org/wiki/Business_intelligence). This enhances and simplifies decision-making in healthcare, on whatever level in the organisation.

Gouvernement / policy

Better managed healthcare = less costly healthcare. Transparency leads to significant cost-reductions by eliminating double-work and confusion, improvement of cooperation between participators and avoiding errors which could lead to dangerous situations.

If amazon.com can remember what books you ordered over the last three years, why can't your doctor's computer remind him what drugs you're taking and determine if there is a potentially dangerous combination? From The Washington Post: Information tech for health care (<http://www.washingtontimes.com/news/2008/may/27/information-tech-for-health-care/>)

Summarizing: Why choose for Open Source in healthcare?

- Open systems and standards are the foundations (<http://www.fredtrotter.com/2008/05/23/in-all-fairness/>) of quality decision-making
- Open communication improves internal and external communication, without restrictions to numbers of users and without restrictions to connectivity (interoperability) with third-parties.
- Open source exceeds other approaches in user-friendliness: less bloatware (<http://en.wikipedia.org/wiki/Bloatware>), more flexibility, rapid development cycles, an abundance of techniques to make the end product look aesthetically pleasing, no restrictions towards creativity or towards innovations and completely cross-platform (http://en.wikipedia.org/wiki/Cross_platform).
- Open source gives us the opportunity to create added value by offering new functionalities and interconnectivity.
- Open source enhances healthcare services by improved decision-making and customer interaction.



Other developments seem egocentric and less capable of producing added value (<http://blogs.technet.com/neupertonhealth>)

/archive/2008/05/26/why-blog-on-health-and-software.aspx), not even on relatively short term (<http://e-caremanagement.com/cerner-disses-google-health-surprised/#>).

Who wants to be hostage of expensive licenses, slow development, closed standards, bloatware, inconnectivity and incompatibility? Healthcare clients do not ask for high prices and obstructed decision-making, solely caused by market-protection (http://www.healthleadersmedia.com/content/214174/topic/WS_HLM2_PHY/Disruptive-Innovation-Takes-Time.html) or greed or loud mouths.

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Reflections and reactions are welcome here (</index.php/component/fireboard/?Itemid=56&func=view&catid=3&id=256#256>) (write enabled after registration)