OSS Watch
Supporting open source in education and research

▶ **http://www.oss-watch.ac.uk**

IN THIS ISSUE:

- Open source and research infrastructure
- Can open source reduce costs?
- Dev8D - where collaboration happens and skills are learnt
- Opportunities for scientific research in open source projects
- TransferSummit 2010

Online newsletter available at
▶ http://www.oss-watch.ac.uk/ newsletters/march2010.pdf

Are you going to the JISC conference in London on 12-13 April? OSS Watch will be there in not one but two of the exhibition lounges. To find out about maximising investment in software development through open innovation/open source development come and visit our stand in Lounge 2 and if you want to improve research software sustainability to enable better research come along to our surgery in the JISC Corporate Lounge. In preparation for the conference we thought we'd reflect on both these topics so this month Gabriel Hanganu provides our featured article looking at 'Open source and research infrastructure' and Ross Gardler, Steve Lee and Sander van der Waal have been busily blogging on issues affecting software development in a research context.

We are also pleased to bring you some details on TransferSummit 2010, the open source conference that we mentioned in the last newsletter, so turn to the back page for the low down. We hope that you'll put the date in your diary today.

Elena Blanco, Content Editor, OSS Watch ▶ info@oss-watch.ac.uk
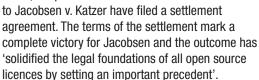
News from OSS Watch

Learning and Teaching Innovation Grants
JISC invites institutions to submit funding proposals for one-year projects and activities that fit with the vision, outcomes and principles of the JISC e-Learning programme and support innovative approaches to learning and teaching. This is an open call, and projects dealing with any aspect of e-learning are welcomed.

▶ http://www.jisc.ac.uk/fundingopportunities/funding_calls/2010/02/ltig5. aspx

Jacobsen v. Katzer is settled
After a five-year legal battle, the parties to Jacobsen v. Katzer have filed a settlement agreement. The terms of the settlement mark a complete victory for Jacobsen and the outcome has 'solidified the legal foundations of all open source licences by setting an important precedent'.

▶ http://itmanagement.earthweb.com/osrc/article.php/3866316/Bruce-Perens-Inside-Open-Sources-Historic-Victory.htm

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▶ OSS Watch news feed
▶ http://www.oss-watch.ac.uk/rss/osswatchnews.rss

Open source and research infrastructure
The UK features an impressive set of online systems and services aimed at helping researchers develop new ways of conducting research. However, there is some reserve among researchers in adopting these technologies to their full potential. Gabriel Hanganu argues that the main issues are social and organisational rather than technological, and suggests that one way to improve the current situation is to take stock of some key lessons from open source development practice.

▶ http://www.oss-watch.ac.uk/resources/researchinfrastructure.xml

RIM switching to open source WebKit
At the Mobile World Congress in Barcelona, Research In Motion announced an overhaul of its Blackberry phone web browser. Like the iPhone and Android systems, the new browser is WebKit-based and is expected to be available on Blackberry devices later this year.

▶ http://www.h-online.com/open/news/item/RIM-switching-to-open-source-WebKit-932717.html

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Open source and research infrastructure

Full article can be found at http://www.oss-watch.ac.uk/resources/researchinfrastructure.xml

The UK features an impressive set of online systems and services aimed at helping researchers develop new ways of conducting research. However, there is some reserve among researchers in adopting these technologies to their full potential. This document argues that the main issues are social and organisational rather than technological, and suggests that one way to improve the current situation is to take stock of some key lessons from open source development practice.

Let's start with an overview of conclusions drawn from recent studies and interviews with researchers and service providers in the academic sector.

1. Research infrastructure background

In recent years, academic research has been challenged by expanding access to online resources and the increased potential for distributed collaboration among researchers. Members of these research communities, supported by a technical framework that allows access regardless of geographic location, can now share, federate and exploit the collective power of global facilities. In this context, 'e-Research' can be defined as research performed in virtual communities across the academic and industrial sectors using specially designed online facilities and services.

This network of tools, resources and services that allow globally distributed researchers to collaborate on producing research outputs is known as research e-Infrastructure, or simply e-Infrastructure.

In the UK, e-Infrastructure consists of a number of loosely connected or separate projects, tools and services. Some are general in scope and address the needs of various researchers. Others are quite specific and serve small groups of specialists. In both cases, e-Infrastructure is designed to foster new ways of conducting research and improving cross-subject collaboration. It is meant to provide an innovation space where the specific interests of scientists are met and cross-subject solutions for distributed research are provided.

2. Embedding human and technical infrastructures

The technical deployment of a complex e-Infrastructure is only one step towards fostering new ways of conducting research. An equally important step is encouraging researchers to use this technical framework to its full potential. Addressing this issue, a number of reports mention the need to embed the technical research framework in a 'human infrastructure'. In this context, 'human infrastructure' refers to the social and organisational arrangements enabling technologies to be used effectively. The AVROSS report, for example, states that uptake of e-Infrastructure is as often hindered by human and organisational issues as it is by technical ones. Focusing on the UK, it recommends continued technical innovation in e-Research. At the same time, it suggests, the social framework that would allow research communities to better exploit these technical assets should be improved.

The vital role community development can play in the success of e-Research is beginning to be acknowledged on a global scale. For instance, the US National Science Foundation funds a program on 'Virtual Organizations as Sociotechnical Systems'. The European Commission has a strand on Virtual Research Communities in its current FP7 call. In the UK, however, building communities around

> ## "The vital role community development can play in the success of e-Research is beginning to be acknowledged on a global scale.

products and processes related to e-Research is not yet seen as a priority. A recent e-Research Community Engagement report suggests that UK funding bodies should also include future community engagement calls, similar to the EU and US programs (recommendation 15).

3. Lessons from open source development

Building a 'human infrastructure', as these reports suggest, is not an easy job. In fact, it can be more challenging than building and making available the current array of technical infrastructure tools. Human nature is more complex than technology and affected by a host of factors rarely taken into account by software engineers. However, projects need not start from scratch in this process, as a fair amount of experience in building communities around technical systems already exists in the area of open source software development. Some of this experience applies to web-based collaboration in general; some is particularly relevant to building and maintaining software.

The next two sections highlight how lessons learned from open development, particularly in the areas of community building and sustainability, could help to increase the uptake of e-Infrastructure by UK researchers.

OSS Watch is funded by the Joint Information Systems Committee

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Can open source reduce costs?

Published by Ross Gardler on March 1, 2010

It is often said that open source software will reduce costs.

Those with little or no experience of implementing computer systems assume these savings come from the fact the free and open source software does not carry a license fee. However, this is not usually the case.

Anyone who has rolled out an software solution, even in a small organisation, will tell you that there are hidden costs. These include training, support, customisation and maintenance.

In 2005 BECTA published "A study of the spectrum of use and related ICT infrastructure costs" which concluded that training and support costs accounted for 60% of total cost for any software solution. The report also found that open source software reduced these costs by 40-50%.

Further to reducing training and support costs, open source can reduce the cost of customisation for specific environments.

It is extremely rare for a back-office software solution to be a perfect fit for any specific organisation straight out of the box. Consequently, the software needs to be customised to suit specific needs. In a closed source environment there is a single provider, or a limited set of approved providers, who can make these modifications. However, in an open source environment anyone with the appropriate skills can make these modifications,

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including internal staff.

As a result of this competition, market forces can often result in a lower cost for a tailored product. Just how much can be saved here depends on the customisations you need to make.

Finally, the open source culture of code sharing results in lower development costs for the software in the first instance. That is, once one user has commissioned a specific feature or configuration option the results of that work is available to all. As a result, the more a product is used and developed within any given domain, the more widely the development costs are

shared. In addition to a reduction of costs open development can significantly increase the rate of innovation as it brings together great minds to collaborate on shared solutions.

Where there is no pre-existing solution to match ones needs the open development model can be an extremely cost effective way of reducing cost. This process is examined in more detail in our document "Meritocrats, cluebats and the open development method: an interview with Justin Erenkrantz."

▸ Blog article continues at http://osswatch.jiscinvolve.org/2010/03/01/can-open-source-reduce-costs/

Dev8D - where collaboration happens and skills are learnt

Published by Steve Lee on March 3, 2010

One of the most satisfying aspects of working for OSS Watch has been observing the outcomes from introducing people and encouraging them to collaborate on new ideas. Outcomes such as personal development and new or improved projects. The recent Dev8D event was a real high point in several strands of OSS Watch activity and I was inspired to have been able to see what happened there. Dev8D is about developers getting together and seeding new project ideas, something that is an important aspect of open development and so is important to OSS Watch. Mahendra, the core team and everyone who participated over the 4 days all made Dev8D a fantastic event. Much developer happiness was expressed both during and after the activities, not to mention the many new project ideas that were hatched.

Several coding challenges where made and our very own Sander won 2 of them with an interesting Google map mash-up of library data. OSS Watch have provided continuing support services to the Apache Wookie (Incubating) project from the University of Bolton. Sander recently organised a Wookie Training day at OSS Watch which Scott Wilson, project lead, and Ross, OSS Watch manager, led. Scott was with us at Dev8D so it was no surprise that Sander's winning entry was a Wookie served W3C widget, and so can be readily deployed in a range of contexts.

The other winning entry that OSS Watch had a connection with was Mark Johnson and Dan Hagon's Moodle course featuring the newly developed Twirlymol and CollabMCE widgets. These 2 widgets use the widget loading and collaboration facilities of Wookie to provide a shared 3D interactive view of a molecule model and shared

WYSIWYG editing. Several threads came together to make this happen. It's not surprising to note how many of these have been made possible through open development and collaborative work.

Since we spotted Mark's announcement of his first small contribution to Moodle and invited him to present it at an OSS Watch workshop, he has gone from strength to strength. At the Dev8D awards dinner Mark deservedly won 'Best newcomer'. An award that provided him with a small Lego car kit, which we knocked up during the meal, and a rather handmade certificate. The point is that Mark's enthusiasm for learning about and contributing to open development has been noticed and is sending ripples through the HE and FE communities. Mark attended the previously mentioned OSS Watch Wookie training day, which stood him in good stead for the challenge and meeting up with Dan. Since the Dev8D fun, Mark has pledged on the Wookie lists to re-implement his editing widget without the current LGPL licensed code dependency and to contribute it to the project. Further evidence of Mark's personal development and its wide reaching effects comes from his recent blog post and this comment that he made to us.

"My manager appreciates the opportunities that open development provide to us as a department and an institution, both internally and externally. By letting me go to events like Dev8D even though the things I did there don't relate directly to my current job, she gave me the opportunity to develop new skills which will allow me to provide new facilities to the staff and students in our institution. We've just started an ILT working group with our teaching staff, so hopefully I'll be able to apply some of my new skills and knowledge to the ideas that come from that."

Dan was the first person I met at Dev8D, and like Mark you can't help but notice his friendly enthusiasm. When I discovered that he had created an interesting Google Wave widget I steered him towards Scott and Mark, and watched the magic. Scott explain how easy it is to port to Wookie, and once they'd decided on the LTI challenge Scott added BasicLTI interfaces to Wookie to support them. These are now part of the Wookie project code. More great collaboration followed and someone gave them a Amazon cloud server to install Moodle on. I observed them working together discussing ideas, fixing bugs and working on their judgement presentation. I tried to muscle in on the action with another widget idea but got rather distracted and bogged down in practicalities. Still I do have some ideas to add to Wookie at some point.

I also attended their pitch to the judges as moral support and I'm glad I did. Chuck Severance from Sakia and Steve Vickers where in the judging team. A soon as the pitch was over Chuck and Steve rushed off to add the widget to Sakai, Blackboard, WebCT. Chuck made the point that by using Wookie and LTI it is now possible to have something running in all these platforms in a matter of minutes. He then distributed screen shots around various lists.

While many other collaborative ventures were seeded or strengthened at Dev8D, new skills learnt and I contacts made, I'd like to mention GNOME who were running an overlapping event in London. Willie Walker and Brian Cameron came over and presented and were both interested in Ben O'Sheen's demonstration of software to talk to wiimotes. A representative from Dev8D went over the to GNOME usability hackfest and I expect we will see fruitful cross pollination developing from this mutual interest.

▸ Blog article continues at http://osswatch.jiscinvolve.org/2010/03/03/dev8d-where-collaboration-happens-and-skills-are-learnt/

Opportunities for scientific research in open source projects

Published by Sander van der Waal on March 3, 2010

There are many interesting open source projects that can be beneficial to academic research. As OSS Watch's recent article on e-Research by Gabriel Hanganu shows there are social and organisational problems in adopting open source for e-Research, but there are many open source software projects there to be joined. Some projects are suited very well to be used in scientific research and I feel that this is especially true in the realm of big data databases.

Google showed the way, really, with the MapReduce paper in 2004. They published their programming model for processing large amounts of data in parallel and although publishing it, they did not neglect to apply for a patent as well, which was recently granted. Hadoop, which originates from a project at Yahoo! , also implements the MapReduce pattern, but is completely open source being a project of the Apache Software Foundation. And now recently

Apache Cassandra has joined the mix. Cassandra originates from Facebook, but has become open source in July 2008. It recently promoted from the Apache Incubator and is now an official top-level Apache project. Work has been initiated to facilitate integration between Cassandra and Hadoop, which simplified means the Hadoop database HBase is replaced with Cassandra. There has been discussion of this on the list and a feature has recently been implemented. So there's Yahoo! working on Hadoop and Facebook working on Cassandra, and recently also Twitter has announced that it is working towards using Cassandra for their backend. Also worth mentioning is the open source implementation of Amazon's Dynamo database which is named Voldemort. This project is used and actively developed by LinkedIn and is therefore another example of how you can benefit from the work this large company is investing by engaging with this project.

To me, this all shows that there will be large investments in NoSQL databases from major companies in the coming years, and it will all be in open source software. This means that there is a lot of opportunity for anybody who has to deal with big data to profit from this investment.

All you have to do is try out the software and engage with these projects. Researchers also have to cope with more and more data, so I think they have good reason to follow these developments closely and step in to benefit.

▸ Blog article continues at http://osswatch.jiscinvolve.org/2010/03/03/opportunities-for-scientific-research-in-open-source-projects/

Events

Mar 10-11

Collaborations Workshop 2010, 10-11 March 2010, Edinburgh
The Collaborations Workshop is organised by OMII-UK and aims to generate successful collaborative e-Research partnerships. This year's workshop will take place on 10-11 March 2010 at the e-Science Institute, 15 South College Street, Edinburgh. The focus of the Collaborations Workshop 2010 is e-Research: the harnessing of computer technology for research. Registration is now open.

▸ http://www.omii.ac.uk/wiki/CW10

Mar 23-25

UKUUG Spring 2010 Conference, Manchester, 23-25 March 2010
UKUUG's annual Large Installation Systems Administration (LISA) conference and tutorials will be held in Manchester on 23-25 March 2010 at the Manchester Conference Centre. The call for papers is now open and submissions are invited for tutorials and conference talks.

▸ http://www.ukuug.org/events/spring2010/

Apr 12-13

JISC Conference 2010, London, 12-13 April 2010
JISC's 8th annual conference will take place at the Queen Elizabeth II Conference Centre in London starting on the evening of 12 April followed by a full day on 13 April 2010. The event will showcase JISC's expertise and knowledge on technology in education to over 750 academics, IT experts, library professionals, policy makers, research staff, senior managers, students and teachers from across education within the UK and internationally. OSS Watch will be there with two different exhibition stands so please do drop in and say hello.

▸ http://www.jisc.ac.uk/jisc10

Apr 13-14

MoodleMoot UK, London, 13-14 April 2010
The University of London will be hosting the next MoodleMoot UK to take place 13-14 April 2009 at Senate House, University of London. The conference will be of interest to anyone using or planning to use Moodle for delivering e-learning and training. It will provide a forum to share experiences and sessions will range from something for those just starting out as well as those who have been using Moodle for years.

▸ http://moodlemootuk2010.org.uk/

Apr 14-16

Linux Foundation Collaboration Summit, San Francisco, California, 14-16 April 2010
The Linux Foundation's 4th Annual Linux Foundation Collaboration Summit is taking place in San Francisco, California on 14-16 April 2010. This event is for key stakeholders spanning the developer, end user and vendor communities to come together to collaborate and advance the Linux platform. Registration is now open.

▸ http://events.linuxfoundation.org/events/collaboration-summit/cfp

TransferSummit 2010

Conference, Oxford, 24-26 June 2010
More than 90% of all organisations use open source software today. Understanding its development, contribution, and communities is paramount to its successful adoption within any organisation or institution. TransferSummit educates, advises, and analyses an array of issues at the core of open technology, including: governance, assessment, procurement, policy setting, acquisition, contribution, and investment. The TransferSummit programme connects top researchers and academics with business leaders and cutting-edge technologies, giving attendees unique insight into community-led methodologies, best practices, and processes. Only TransferSummit provides strategic solutions that improve collaboration between commercial and academic concerns, offers access to valuable research, and transfers creative ideas to meet business challenges through the use of new technologies. From quick-start sessions and real world case studies to emerging technology showcases and funding opportunities, TransferSummit is the must-attend event of the year. Participant numbers are limited to promote dialogue amongst attendees in an intimate setting. This year's event takes place 24-25 June 2010 at Keble College, where the traditions and customs unique to Oxford and its 38 historic colleges will be celebrated.
For more information, visit http://www.transfersummit.com

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For more answers to your questions visit: http://www.oss-watch.ac.uk/about/faq.xml