

SWAT Conference

Open Source Software and the Future of Hydroinformatics

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Outline

- Nature and emergence of OSS
- Emergence of hydroinformatics
- Software as a product vs software as a service
- Future of OSS and hydroinformatics

Open source movement

- Set of principles and practices
 - to promote access to the production and design process
 - for various goods, products, resources and technical conclusions or advice
- Dates from a Netscape release in 1998 of an open source version of their browser:
Mozilla

Open source movement

- Presents a challenge to the concept of intellectual property
- Can/should we restrict knowledge dissemination (especially in software) through patents?
- We are turning from a society of 'knowers' to one of consumers of knowledge

Open source software

- Made available to the general public
 - with relaxed intellectual property restrictions
- Allows users to create their own software content
 - through individual effort or collaboration

Open source software

- Free redistribution of software as a component
 - Open source distribution as well as compiled
 - Derived works through modification permitted
 - Integrity of author's source code
 - No discrimination against persons or groups
 - No discrimination against fields of endeavour
 - Distribution of licence
 - Licence must not be restricted to a particular product
 - Licence must not restrict other software
 - Licence must be technology and style of interface neutral
- (Ken Coar 2007)

Some key open source software

- Linux operating system
- Apache web server
- Sendmail email server
- Mozilla/Firefox web browsers
- OpenOffice office systems

(Dave Wheeler 2007)

Claims for OSS

- More reliable (peer reviewed)
- Better performance
- Improved scalability (with regard to platforms)
- Superior security
- Protection from risks of single supplier
- Greater flexibility
- Encourages innovation

(Dave Wheeler 2007)

Hydroinformatics

- Emerged in the early 1990s out of computational hydraulics, with its packaged, proprietary simulation modelling products
- Seeks an inclusive, socio-technical management of water resources through the innovative application of relevant information and communication technologies

Hydroinformatics

- 4th generation simulation modelling products generated by small group of suppliers and distribution restricted to limited set of 'knowing' (and paying) customers
- Need a different business model to circulate the knowledge encapsulated in the products and their use more widely
- Take advantage of Internet and World Wide Web

Open source movement

- Mutualism between participants
- Federalism between groups of participants
- Direct action in processes of society and nature

From software as a product to software as a service

- (Internet) Access to software, the associated encapsulated knowledge and the knowledge of the use of the software
- Opportunities for service providers
- Opens up possibility of comprehensive stakeholder participation

(Mike Abbott 2006)

New model requires

- Non-authoritarian (anarchistic) construct
- Self organising
- Emergent and transient structure
- The development and application of SWAT is an excellent example
- The challenge is: how to move from the academic environment to water sector practice

References

- Dave Wheeler (2007) Why Open Source Software/Free Software? Look at the numbers
- Mike Abbott (2006) From an open source to an open mind
- <http://www.opensource.org/>
- http://en.wikipedia.org/wiki/Open_source

Thank you for your attention