

RECORD OF THE OFFICE OF THE E ENVOY/DTI DISCUSSION EVENT (11TH FEBRUARY 2003, DTI CONFERENCE CENTRE):

'OSS AS A POSSIBLE DEFAULT EXPLOITATION ROUTE FOR GOVERNMENT FUNDED SOFTWARE'

1. INTRODUCTION

Dr Andy Hopkirk (Head of Research and Development, NCC) set out the objective for the meeting, namely to establish participants' views on the discussion point 'Open Source Software as a possible default exploitation route for Government funded R&D'.

He presented a ranging discussion which examined the essential definitions of the key terms such as 'default', 'exploitation' and 'OSS'. His presentation slides are attached.

He then introduced Mr Jonathan Armstrong (Associate, Eversheds) who gave an overview of potential licensing/IPR issues (slides attached) and the issues associated with the protection of OSS rights:

- o The situation regarding software patents in the UK and European contexts is inconsistent with the USA and things are, at best, 'unstable' at present.
- o Patent protection and or patent capture of OSS products, concepts or methods of working are hot topics within interested communities. Where patents protect OSS IPR, it is not clear how infringements would be resisted and by whom unless there is a body that 'owns' the rights (and could therefore defend them) on behalf of the community of OSS developers and users. (This is the model followed by the Free Software Foundation and its community).
- o Copyright law can protect OSS source code as an 'expression of an idea'; software patents can protect software and are in wide use in the US which is impacting on the UK environment; branding can 'protect' the interests of commercial OSS suppliers as is demonstrated by the Netscape/Mozilla case, where the opening of the source code (Mozilla, the OSS project) built up the brand image and loyalty (Netscape, the company).
- o Communally held trade-marks are hard to exploit.
- o It is difficult to protect all the rights of an OSS development community. (See comment above, referring to the Free Software Foundation approach).
- o The law can protect OSS support services businesses which is key to the OSS distribution + support business model.
- o The law can protect OSS and can be used to impose contractual terms and oblige users to pass on those terms.
- o However there is a key issue regarding the liabilities associated with passing on and or picking up OSS. In particular the duty of care in chained contract situations could be unclear. The legal position may vary from jurisdiction to jurisdiction.
- o The option for Government of commissioning an alternate OSS licence, which would ensure that government was not liable in chained contract situations, was touched on.
- o OSS is more effectively, if not aggressively, protected by its licenses than public domain software which has no restrictions on use.

2. BREAK OUT DISCUSSIONS

Three break-out groups were held, facilitated by:

Vince Osgood, EPSRC – exploring the perspective of Funders of R&D
Dr Andrew Hopkirk, NCC – considering the views of Developers/Producers of government funded software
Dr Alicia Wise, JISC – exploring the perspective of Users of OSS.

0.1 FUNDING AGENTS DISCUSSION

PARTICIPANTS

Dr Vince Osgood, EPSRC (Chairman)
Mr Bas Kotterink, DFID
Mr Robert Bowerman, DTI
Mr Lee Vousden, DTI
Mr Jonathen Armstrong, Eversheds
Mrs Audrey Canning, Virkonnen Ltd (Rapporteur)

EXPERTISE

The group represented a number of government funding organisations including:

- o the EPSRC Information and Communications Technologies Programme which has the broad aims of stimulating UK competitiveness and Quality of Life principally through grant funding to academia
- o the DTI Innovation Group which funds grants for UK industrial and academic R&D
- o DTI website development for implementation of e-government
- o Department of International Development

It was recognised that only EPSRC and DTI had any direct interaction with the science base, and therefore some of the questions identified for discussion by the group could not be covered by the expertise available.

DISCUSSION

TECHNICAL AND QUALITY ISSUES

Economic Benefits

- o Use of OSS has achieved a faster time to market, not least by reducing the time involved in avoiding proprietary status related IPR issues. It can also deliver more rapid bug fixes and development of new features.

Security Benefits

- o Existing OSS infrastructures (operating systems, web services) generally have had lower security vulnerability for the following reasons:
 - the underlying architecture is much better suited to provide high security
 - the interest of the community ensures it has been subjected to a high level of peer review
 - the user base is smaller and vulnerabilities are not widely advertised
 - because of wide participation from a diversity of inputs, OSS, quality is less likely to be subject to purely profit-oriented considerations – external peer review will reveal any limitations imposed by profit making considerations

Concern over Openness to Malicious Activity

- o Although in principle there may be malicious attacks on OSS that exploit weaknesses, the likelihood is counterbalanced by the ongoing peer review by the rest of the community that is more likely to reveal weakness and fix it before malicious exploitation can occur.

EXPLOITATION, IPR AND COMMERCIAL ISSUES

Crown Copyright

- o The automatic default for purchasing contracts is Crown Copyright. This can be an inhibitor to exploitation since it prevents wide publication and use. It can also inhibit improvements to purchased software since modifications could infringe the copyright. In the wider international community Crown Copyright is generally not understood. The position of Crown Copyright vis a vis OSS needs to be explored.
- o Many contractors (particularly those working to ISO9000) default to assuming everything produced under any contract is to be marked and considered "restricted - commercial" or equivalent. For their part many Government contracts state that all publications and related materials are "crown copyright". The resolution may well be to review standard Ts&Cs and procedures to be consistent with OSS if it were to become a default.

Value Added E-Government

- o To fully implement e-government by 2005 websites must be scalable, reliable and secure. Current levels of interoperability will need to be scaled 100 fold. The cost (time and money) of integrating estates of heterogeneous, closed standards platforms is a major barrier. OSS offers a means to progress more quickly towards open standards based interoperable systems.
- o Given that the private sector (for example, IBM, SUN, HP) has already invested £millions in OSS, public sector movement in this direction is unlikely to undermine current business models. They have demonstrated that OSS can provide suitable levels of interoperability.
- o Many commercial organisations already use OSS as part of their products. Government organisations should be aware that they may be buying OSS through a third party and should beware of gaining little 'added value' from the purchase.

Stimulating External Markets

- o As a supplier of OSS and in being compatible with OSS standards the UK could benefit through the opening up of new markets for UK-based services.

Contract Type: Grant versus Direct Purchasing

- o The means of exploitation is not necessarily the concern of grant funders who may only be interested in ensuring exploitation of some kind takes place. There may be differences in the mechanisms required for grants versus direct government purchasing contracts. The most important aspect is that the means of exploitation for grants is defined.
- o It was noted that in many cases software is a spin-off benefit from the main purpose of the grant – e.g. in cancer research. In many cases the principal IPR generated by the grant could remain proprietary whilst the spin-off software could become OSS.

Affects on Business Models, SMEs and Academic Exploitation

- o Concern was expressed that OSS may be inconsistent with the current policies to achieve commercial exploitation through SMEs and university spin-offs working in niche markets. This was likely to be especially true in the ICT domain. However, this was countered by a suggestion that value added comes from systems integration rather than the underlying tools hence there should still be opportunity for exploitation through the current approaches. It is also useful to note here that dual licensing arrangements can be set in place to allow both proprietary and non-proprietary exploitation channels.

- o A further concern was raised as to whether SMEs etc could retain the IPR they created , i.e. their ‘added value’ – or whether they would be obliged to donate all of this back to the community. It was felt that this would depend on the particular circumstances: software fully funded by government should be returned to the community - or at least bug fixes should be returned - while, in other cases, the developer may be able to exploit the whole independently (for example, where a dual licensing model has been established).
- o OSS would be particularly appropriate for business models where the specific tool is given away but where ‘value added’ comes from the provision of consultancy to exploit the “know-how”.
- o Three current routes for exploitation of academic IPR were considered:
 - the Institution holds the IPR – in general this deters innovative and entrepreneurial people since they will not gain personal benefit
 - use of commercial spin-offs with shared benefits to the Institution – widely used but so far has not shown the anticipated level of success and wealth creation
 - allowing academics to hold IPR – generally very successful (especially in the USA, less so in the UK) and not incompatible OSS
- o If all the IPR resides in code produced by academics then the value comes from the reputation gained by the academic in achieving high use of their research findings. Royalties may be an appropriate vehicle for financial re-imburement.

Liability

- o The Peruvian Government requires all software to be OSS since it is accountable for damages caused by its software. OSS is seen as a means to demonstrate best practice in review/integrity. The Peruvian Government does not have sufficient resources to be able to assure proprietary software to the same level.
- o In the UK, data protection law requires that adequate protection mechanisms are in place to secure personal data. If a government website were successfully attacked, then the owner would be liable to the persons compromised if the owner did not take adequate precautions.
- o It was noted that in the UK liability and tax (VAT) issues might depend on whether traded OSS is perceived as a product or a service. The current Government policy is to purchase services as a means to minimise risk. OSS considered as a service may be more compatible with this approach than proprietary software. If OSS is regarded as a service it is unclear how liabilities would eventually be allocated.

SOCIAL AND POLITICAL ISSUES

International Responsibility

- o OSS can be a means of overcoming inhibitors to accelerating technological development in the developing world and hence in addressing social issues related to relatively slow economic development. It can reduce the technology divide between the established and emerging communities. It can also provide a low cost means of access to electronically distributed information, knowledge and learning.

Redistribution of Wealth

- o In response to a question as to who should have the greatest influence on the exploitation of project outputs, it was agreed that this should be the funding bodies.
- o It was noted that in the past the Government often gave away commercial exploitation rights at low/no cost to those acquiring the rights. In future Government should negotiate

on a more directly commercial basis, to ensure that, where large returns are foreseeable, at least part of the returns are redistributed to the general public benefit. In the specific case of exploitation of software IP, this will require new mechanisms to manage IPR returns in the time period after the (currently conventional) end of a research project (when the grant/contract ends).

Immunity to Vested Interests

- o OSS may be a means to overcome political issues associated with the use of propriety software, such as refusals to use products from certain countries.
- o OSS may also be a means to overcome strong political and commercial lobbies – for example to prevent proposed open standards being undermined as a result of commercial interests enforcing defacto proprietary standards.

Moral Responsibility Accruing from Government Involvement in OSS

- o Currently, Government regards itself as a ‘taker’ from the OSS community. If it intends to profit from this community in future it should also ‘donate’ value back into the OSS community. The discussion proposal is consistent with such an aspiration.

CONCLUSION

- o It was agreed that the default exploitation route for both grant and contract situations should be OSS in place of Crown Copyright. Individual contracts should be negotiated with a view to exiting via the the most favourable alternative exploitation approach (to both contracting parties) if the default is not to be applied.

2.2 DEVELOPERS/PRODUCERS DISCUSSION

PARTICIPANTS

Dr Andy Hopkirk, NCC (Chairman)
Mike Holcombe, University of Sheffield
Keith Jeffery, CCLRC – Rutherford Appleton Laboratory
John Laws, DSTL, Malvern
Gill Ross, Met Office
Philippe Aigrain, European Commission
Michael Andrews, Office of e-Envoy
Michela Ledwidge, thequality.com
Bob Griffith, SOCITM
Graham Taylor, Open Forum Europe
Paul Watry, Cheshire Project, Liverpool University
Robin Barker, NMS Software Support for Metrology Programme, National Physical Laboratory
Kathryn Thornton, Dept Computer Science, University of Durham
Andrew Adams, School of Systems Engineering, University of Reading

DISCUSSION

Role of a Default Policy

- o Concerns were raised over the potential for excessive bureaucracy and expenditure of effort in determining the license issues.
- o It was thought that a default OSS policy would encourage people to consider IPR as part of both the project definition and exit strategy. On the other hand, software is often a side product of a research project and potential software outputs are not well defined at the outset. It was suggested that the project final report could be the mechanism whereby exploitation is addressed, with the default of a OSS license unless something else is put in place. Leaving the detail of the exit strategy to the final report stage would avoid applying effort at the start of the project, and ameliorate some of the academic concerns about excessive bureaucracy, but some would argue that this is too late to leave an important aspect of a whole project lifecycle unaddressed.
- o It was felt that it was incumbent on the Research Councils/Government to provide advice on post-grant/contract licencing to the HEIs to facilitate the process.
- o A default OSS policy would give a public partner a stronger negotiating position when negotiating IPR in public/private projects.
- o French guidelines on licensing required the developer to choose from a list of possible licences.
- o The use of standard licences would stop fragmentation of licences and help to ensure that software can be incorporated/sold as part of a package.

Liability and Warranty Issues

- o The impact of liability for OSS picked up and used by parties other than its authors was discussed. There are different legal interpretations in Europe and the USA to the UK which need to be understood. There was concern that a GPL is not enforceable in UK law since there is no consideration, and thus no contract. GPL was considered to be designed for the US legal system. There is little or no Case Law in the UK to act as guidance. In principle, the USA-originated GPL is very straight forward. It sets out to establish no residual liability to the USA provider.
- o In the UK, customers are likely to consider that it is the responsibility of an integrator who uses OSS code to be the party who performs any necessary checks/tests and adopts liability with respect to the service/product supplied on to the customer. Whether this is legally a realistic consideration on the part of the customers is unclear.
- o It was thought that if any residual liability was to attach to the Universities, then they would rather shred the software rather than contribute it to the wider community. It is worth noting that this (residual liability situation) may, in fact, already actually be the case right now, i.e. when outputs are simply left in the public domain instead of being otherwise protected/licensed away from potentially harmful consequences to second, third,...parties. (In the UK, liability is not lost when gifts are made).
- o A major concern in using OSS products is the copyright issue. It was considered that some form of public insurance may be necessary to allay fears over litigation.
- o A potential issue to be addressed in the coming years is the changing scope of patent law. Europe and the UK software patent law is presently inconsistent with USA law - USA allows patenting of computer software, Europe formally does not but there is a growing grey area. There is pressure at both ends to either normalise to the USA position or, from others, to normalise back to the formal European position.

Developer Issues

- o If the purpose of OSS release is simply to make the software available, then it is not necessary for the original developers to be concerned about ongoing maintenance and further development – that is left to the discretion, interest and capacities of others.

- o However, the best OSS projects are those that have active user-developer communities and (by definition) where the software changes over time. Projects which envisage continuing engagement beyond the grant/contract finish will need to consider the resources they will commit and build this into their planning from the outset. The mechanism by which post-project development is managed also need to be considered (e.g. ad hoc repository or some form of centralised repository(ies)).
- o Given the above two points, adopting OSS needs a **strategy** as well as the **licence**.
- o Various examples of attempts at shareware groups were cited, and generally these have not been a success, in large part due to uncertainties about legal and support issues. If OSS had been used, then some of the legal problems may have disappeared.
- o The example of local authorities' potential use of OSS was discussed. In general they want 'support' for the software, so 'free' (shareware) is not attractive. The possibility of OSS allows the potential for a company to offer support on a commercial basis.

Publication Issues

- o There was concern that any OSS produced from Research programmes may not have visibility and thus not be taken up. It was suggested that perhaps the Research Councils should act as a repository (e.g. an academic version of SourceForge). It was noted that there are several repositories in existence, for example the National E-Science Centre provides one for GRID software.

Conclusions

A straw poll (personal views) of the representatives at the discussion concluded that a default OSS policy was to be supported if the liability issues can be resolved/clarified. It would avoid a chaotic licensing situation and could be a benefit to the UK.

2.3 USERS DISCUSSION

PARTICIPANTS

Dr Alicia Wise, JISC (Chair)
 Dr Andy Powell, UKOLN, University of Bath.
 Mr Michael Wild, Fujitsu
 Mr Michael Sawdon-Smith, Sedgemoor District Council
 Ms Emma Fryer, EURIM
 Mr Mike Gordon, Northern Ireland Civil Service
 Professor Nigel Allinson, UMIST
 Dr Matthew Addis, IT Innovation Centre, Southampton University
 Dr Julia Chruszcz, MIMAS, University of Manchester
 Mr Nick Siegle, Virkonnen Ltd (Rapporteur)

EXPERTISE

Many of the participants indicated that they were both OSS and proprietary software users. They were in some cases both developers and users. University research departments, University Service departments, exploiters of research, commercial suppliers, local government and the devolved administrations were represented.

DISCUSSION

Desktop OSS

- o It was agreed that OSS desktop applications were not central to this discussion which was focused on software under development as part of government funded R&D software.
- o However, a growing number of public sector organisations were piloting OSS on their desktops (e.g. Bristol City).

Arguments in support of OSS

- o Putting software in the public domain is giving away ownership; making it available as OSS retains clarity about ownership.
- o The branding of OSS software can be leveraged for support and services.
- o OSS software can be developed and donated e.g. to Apache Foundation, but there is no requirement for the developers to continue to support it.
- o The initial costs of using OSS are attractive and seem to offer VFM, although it is the whole life-cycle of use which needs to be considered in VFM assessments.
- o When problems arise with software, OSS has advantages as the community of developers respond quickly with fixes. The user groups for proprietary software are less helpful.
- o If liability for OSS is an issue, remedies for OSS problems are quick to be supplied.
- o Government is an important source of funding of OSS.
- o With OSS, users can modify or have code modified to suit their needs and this can give a better quality of service than with proprietary software whose code is fixed.
- o Sometimes developers do not make the best support service providers, and OSS means these 2 roles can be uncoupled.

Arguments against OSS use

- o The seeming complexity of OSS is off-putting to users.
- o Liability for OSS use should be explored further – which developer would one sue? However, the difficulty of taking any major proprietary code vendor to court is also a significant counterbalancing issue (proprietary licences can also attempt to leave no residual liability with the vendor).
- o IP that is algorithmic in nature could be reverse engineered out of OSS. In such cases the chosen licensing regime is unlikely to be an open one.

User perspectives

- o Commercial organisations might have different software needs from academic users.
- o Different OSS licences bring different benefits. Clarity about licenses is essential for users.
- o Are end users better served by software which has been developed by OSS or proprietary means? It was agreed this decision must be taken on a case by case basis.
- o User should conduct risk analyses to determine the risks/benefits of OSS/proprietary software. Risk factors to be considered by users include:
 - Total cost of ownership
 - Ability to customise software
 - Maturity of software
 - Lock-in
 - Quality
 - Fitness of purpose
 - Warranty
 - Support tools for OSS
 - Procurement and implementation guidance and tools.

Procurement decisions

- o Often, it seems that procurement decision about whether to use OSS or proprietary solutions, are made for political reasons, rather than technical ones. This suggests that guidance and tools may be needed to enable procurement officers and managers to fairly assess both OSS and proprietary options.

Value for money/TCO

- o It was suggested that OSS surely provides best value for money with its cheap licensing when compared to proprietary products, even given a TCO model which encompasses the whole procurement lifecycle. It was agreed that the latter point was debateable with cheaper licenses meaning cheaper overall solutions not proven.
- o It is important to differentiate between low cost and value for money, OSS can offer both.

Collaborative development

- o Collaborative development does not necessarily mean using OSS. However OSS can make collaborative development more effective.
- o The decision to undertake collaborative development and the development itself happens at an earlier stage in the project lifecycle than the decision to exploit the software using OSS licensing.

Exploitation

- o A good area of discussion for exploring the policy point was afforded by the 'video codecs' work. UMIST researchers are keen to commercially exploit the results of their research and do not feel that OSS licensing models would be supportive of their exploitation goals. These could include spinning out into companies developing applications from research findings. In such circumstances it is unlikely the developers would choose the default OSS exploitation route.
- o Researchers and University departments are increasingly endeavouring to recover costs and the requirement to exploit research is within the terms and conditions of funding bodies. The argument of what constitutes best public good is a complex one.
- o OSS might be good for the dissemination of results but not necessarily for exploitation.
- o How early in a R&D project involving software development does one consider the exploitation approach for end products? One could consider licensing at the point when the software is released to the community and/or commercially exploited.
- o R&D jointly funded by government and industry bears on exploitation decisions.
- o There is a continuum of 'openness' – the nearer software gets to hardware the more proprietary it is likely to be.
- o OSS allows better continuity of development and maintenance of research, after project completion. OSS code can continue to be developed into the future if a community of developers becomes interested in a product.

e-Science

- o e-Science communities supported by government funding are using collaborative development models and releasing OSS into development communities. The e-Science initiative is significantly supported by this approach.
- o e-Science is supportive of OSS use, regarding the OSS approach as supporting reinvestment and enabling developers to work collaboratively and exploit discoveries more effectively.
- o OSS is used throughout the bioinformatics and physical sciences research community to enable effective collective development and to share results at all stages of development. It maximises the opportunities for collaborative and shared research.
- o Linux is heavily used in academic establishments.

OSS and open standards

- o There needs to be a clear distinction between open standards and Open Source Software.
- o The case for Open Standards is strongly supported by government, particularly by the e-GIF initiative which mandates open standards and specifications as a means to achieve systems interoperability in the public sector.

- o The OSS Policy published in July 2002, clearly sets out the need to support open standards.
- o It was decided that the use of open standards is of higher strategic importance to users than the availability of Open Source Software in an overall context.

Key conclusions

- o It was generally agreed that OSS could provide benefits for users.
- o Decisions about whether to use OSS or a proprietary product must be taken on case by case basis.
- o Some applications might be so innovative that OSS development trajectories were the only option i.e. The GRID.
- o Producers may opt for OSS because they want to engage in collaborative development.
- o From the user's perspective, it doesn't matter how the product becomes OSS.
- o Transparency of OSS licences is essential for users.
- o It was decided that the use of open standards is of higher strategic importance than the use of Open Source Software in an overall context.

Ways forward

Developers

- o A clear default would be welcomed by users. 'Default' could be defined either as 'commercial exploitation' or 'OSS exploitation' with the condition that if a case is made for a particular exploitation route, the default does not apply. A clear default approach should be defined for implementation if a particular exploitation case is not specified.
- o A flexible approach was discussed to exploitation which entailed the use of OSS instead of the public domain following a period in which commercial exploitation was sought. This could be summed up as 'use it or lose it' concept.
- o Research organisations should be encouraged to develop exploitation plans at the appropriate stages of their projects.
- o It would be useful for the appropriate government organisation to define the range of exploitation routes available to research teams with guidance on the implications, benefits and disadvantages for each.

Users

- o For users of OSS in academia, guidelines defining OSS and comparing the benefits of OSS with other software licence approaches would be useful. Any guidance provided should cover all aspects of licensing and users should carry out their own risk analysis and cost benefit research.
- o User should explore risk assessment and other techniques that will empower them to make good decisions.
- o There is a need for users to be better guided on procurement with the option of appropriate tools to assist decision-making. Guidance is needed on: issues of 'lock-in', VFM and TCO with models available; multiple licensing schemes for a specified product; and establishing the maturity of a product.

3. REPORT BACK

The results of each breakout group were presented as above. The groups were invited to comment on and agree the findings from their respective group sessions. The summaries of the sessions were agreed.

4. NEXT STEPS

Caroline Halcrow, Senior Policy Advisor, Office of the e-Envoy, outlined the next steps for exploring 'OSS as a possible default exploitation route for government funded R&D':

- o The record of the discussion event and interim conclusions will be circulated for comment to invitees
- o The record/conclusions will be revised in the light of comments received
- o The revised record/conclusions will be circulated to industry for comment
- o Second discussion event with industry and academia to consider and approve findings
- o OeE and DTI will meet with OST and other relevant bodies to discuss findings.

5. CLOSE

Dr Andrew Hopkirk, Head R&D, NCC, thanked everybody for their participation and expert contributions to the ranging and complex discussions. He then brought the event to a close.