The South African view on Open Source

Over the course of the four years spent developing the national OSS policy, not only has OSS been recognised widely as a viable choice strictly on technical merits, but it has also been recognised around the world that OSS is inherently different in its potential to have broader beneficial effects, particularly for developing nations, including South African society.

What makes open source different

In recent years a wide range of organisation across the world have started to make use of 'open' ICT's in the form of Free and Open Source Software and Open Content (FOSS/OC). These open technologies differ from proprietary information and communications technologies and proprietary content, and do so in significant ways:

- They are developed through a process of public collaboration
- They are available to anyone at no or little financial cost
- Their use does not require paying licensing fees or adhering to restrictive licensing conditions
- Access is allowed – even encouraged - to the inner workings of the technology or content (e.g., the source code or the complete electronic text) in question, which allows for modification, customisation and further improvement
- Free redistribution of the modified customised or improved technology or content is both permitted and encouraged

These are often referred to as the *5 Open Source Freedoms*… "you can get it, you can use it, you can see it, and you can change it, but those changes belong to everyone".

The characteristics of open source

These differences give rise to the following chracteristics of open source software and open content, which have technological benefits in their own right. These characteristics are:

Open source technologies and open content are generally **accessible** in multiple ways, including download using the internet from web sites, or IT companies specialising in supporting and customising open source software. No licensing costs are incurred. Further, *redistribution* by individual users is encouraged. In contrast, proprietary technologies and content are only available from specific vendors who limit the use and distribution of their products by licensing and charging fees for use whilst specifically prohibiting redistribution.

Transparency means that a product or system is 'open', which means its workings are exposed to the public and can potentially be modified or improved by anyone. The alternative, which is a system whose workings are closed to the public, and modifiable by the owner only, is a proprietary[1] product or system.

Open content - coined by analogy with open source - describes any kind of creative work (e.g., text, pictures, audio, video, etc.) that is published under an open license and format that

[1] The term "proprietary" means "privately owned and controlled". Wikipedia, http://en.wikipedia.org/wiki/Proprietary

explicitly allows the copying of the information (e.g. GNU Free Documentation License[2], is used by Wikipedia where this definition was developed). A number of variations on open content licenses are in common use, and the term 'open content' typically refers to the general principles of copying, re-use, and redistribution without charge, even though there may be other provisos (e.g., attribution of authorship).

Open standards are specifications, formats or protocols that any interested party can use, as well as contibute to their the further development. Open standards are published rather than kept confidential. This promotes *interoperability* between systems; information held in a system which makes use of an open standard can be accessed by anyone by following the standard. Note that this does not mean that confidential information cannot be protected or secured from unauthorised access.

Open standards also apply to content by defining commonly accepted metadata, structures and formats that allow content to be exchanged by interoperable systems, and allowing wider distribution.

Interoperability describes the capability of different programs to read and write the same file formats and utilise the same protocols. Two systems can be interoperable if the owners of those systems agree to share file formats and protocols. Those that observe *open standards* will automatically be interoperable.

Interoperability does not, however, imply that systems are simply open to one another, without security, privacy or business rules that govern their interaction. Interoperability provides the potential for whatever level of information exchange between systems might be appropriate and desirable. The decisions as to whether, when and to what extent to do so remain strategic and management decisions.

Customisability means that open source software code and technology specifications can be altered and modified to meet the specific needs of users. Whilst specific instances of many software applications can be customised by the user by selecting from a menu of options, FOSS/OC applications can be modified and redistributed in their modified form. This characteristic especially promotes the creation of locally relevant applications and content, especially with regard to language.

The principle of **contribution** underpins the FOSS/OC development method which ususlly takes place through collaborative (voluntary[3]) effort.[4]. The requirement to contibute improvements to the community of users and developers is often a part of the license conditions.

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[2] The GNU Free Documentation License (GFDL) is a copyleft license for free content, designed by the Free Software Foundation (FSF) for the GNU project. The official text of version 1.2 of the license text can be found at http://www.gnu.org/copyleft/fdl.html

[3] Like the many individuals that volunteer to work on Open Source Software projects, there are also a number of non-profit and various commercial organisations that volunteer to participate.

[4] Commercial mass-market software is a relatively modern phenomenon. Until about 1980 almost all software was created by hobbyists and distributed freely. With the commercialisation of software came the notion that the source code needed to be kept secret in order that the software could not easily be modified and passed off as another's work.

Open licencing - in general, users do not own software; rather they obtain a license to use it. The licence defines the terms and conditions for use of the software. Intellectual property rights (IPR) have ensured that in all cases the user must accept the terms and conditions of the licence before use, whether explicitly by clicking acceptance or implicitly by breaking a seal on the box.

Proprietary software is generally protected by a patent and then licensed for a fee on a commercial basis, and imposes conditions which limit the the use of the software; importantly, the source code is kept secret. Proprietary content, by analogy, is protected by copyright law which limits the use of the content, and similarly may be licensed for a fee on a commercial basis.

Usually, open source software is not 'unlicensed' but is rather specifically licensed to allow and encourage wider use, broader distribution and further modification. A number of well-established open licensing conventions exist to facilitate this. Similarly open content is protected by copyright law but the law is used to lift some or all restrictions of the use of the content.

Open licensing therefore allows and encourages accessibility, transparency, interoperability, customisation and contribution.

Direct benefits of open source

Today, many industry leaders acknowledge that FOSS/OC is a viable choice, "both on the desk-top and in the back-end"[5].

These typically focus of cost, security and similar issues. Even so, when objective technical and financial analyses are conducted to calculate total cost of ownership, return on investment, technical performance levels and other measures, FOSS/OC typically proves highly competitive and frequently superior across many categories of ICT[6].

This is not to say that FOSS/OC solutions are available or appropriate in every situation or for every user.[7] FOSS/OC can have apparent disadvantages – not least that its use may require significant technical expertise, and that accountable support of the kind that is usually associated with proprietary software may be unavailable. Many of the benefits of wide ICT adoption have come about as a result of the *de facto* interoperability of documents and files produced by ubiquitous Microsoft applications. And there is an argument that intellectual property rights protecting proprietary software drives innovation by allowing developers to seek an economic return for their efforts – which, if true, mitigates against the promotion of FOSS/OC as a development tactic.

Various government sponsored investigations and reports have identified the following relative

[5] Brett Haggard "The top ten reasons why government should adopt open source" Electronic Government, Vol1 Issue 10 2005, p14

[6] See, for example "Open Source Software: Perspectives for Development", Dravis P World Bank, 2003

[7] This analysis drawn from Attar A et al "Framework to assist donors in endeavours to support free and open source software ('FOSS') in the developing world" CSIR October 2004

benefits of the wider use of FOSS/OC over and against proprietary software:[8]

1. Freedom to probe, modify, learn from and customise software to suit particular needs. From a government perspective, this has four consequent benefits:
    - Ensuing free access to public data by citizens (who are not forced to first invest in a proprietary software application in order to do so). This can only be guaranteed through the use of Open Content standards, which is best done through the use of compatible Open Source Software
    - Guaranteeing the permanence of public data, by ensuring that the usability and maintenance of the software does not depend on the goodwill of suppliers, or the monopoly conditions imposed by them. To do this the State needs to use systems whose development can be guaranteed due to the availability of the source code
    - Security of public and state information, by virtue of the fact that source code of the applications which allow public and state information to be stored and exchanged can be inspected by citizens, the state and independent experts. This transparency gives confidence that the code is free of critical bugs or potential security flaws. Several documents liken this to the benefits in the academic and research world of peer review
    - The ability to customise FOSS/OC makes it particularly appropriate in countries – such as South Africa – with a large number of local languages and dialects, into which applications can be translated
2. The facilitation of interoperability between systems, allowing them to readily exchange data. OSS generally conforms to and respects existing standards, and through its use reinforces them.
3. Improved reliability, and less vulnerability to viruses (this is related to the security issue described under the third sub-bullet above).
4. The absence of a requirement to pay license fees to the originators, as is almost always the case with proprietary software – usually to foreign corporations. This reduces cost (not least by removing the need for policing), and decreases dependency on imported technology and skills.
5. The ability to make productive use of older – yet still functionally adequate - hardware, without the continual pressure to upgrade, with associated capital, licensing and training costs. This is also referred to as the benefit of "non-obsolescence".

[8] Adapted from Levin, Alan *et al;* and derived from Thomas E Pogue, Adi Attar, Bob Day, Nhlanhla Mabaso, Sibusiso Sibisi and others. "Open Software & Open Standards in South Africa. A Critical Issue for Addressing the Digital Divide", National Advisory Council on Innovation Open Software Working Group (NACI), Version 2.3, November 2003; OSS Working Group. "Using Open Source Software in the South African government." Government IT Officers Council, Version 3.3, 16 January 2003. <http://www.oss.gov.za/docs/OSS_Strategy_v3.pdf> (15 November 2003); "Handbook on Minimum Information Interoperability Standards (MIOS)", *Department of Public Service and Administration,* 16 April 2002, <http://www.dpsa.gov.za/e-gov/2002docs/MIOS-Handbook16April'02.pdf (10 November 2003); "MIOS Implementation Initiative". Department of Public Service and Administration. 25 May 2002. <http://www.dpsa.gov.za/e-gov/2002docs/ImplementationSupportMIOS.pdf>; Blume, Roy, Natalie Bryden, Brian Neilson and Mark Rotter. "Designing and managing a framework for assessing results of use to OSS in South Africa: Phase 1." BMI TechKnowledge Group report, No. BMI-T No. SITA2003A, May 2003.

6. The potential for a local ICT development industry to flourish, with associated societal benefits.

Developmental benefits of open source

The benefits of open source software and standards are not just the *relative* benefits of open source technologies when compared with their proprietary alternatives, as listed above. The characteristics of open source and standards mean that their use also has benefits beyond the technical and financial, including important broader social and economic benefits that are not conveyed by the use of conventional proprietary ICTs. These socio-economic benefits are an important consideration when evaluating the proper place of FOSS/OC in the developing world.

The social and economic benefits of wider use of open souce software and open technologies are, in summary:[9]

1. **Open source supports the local IT industry and digital self-sufficiency**: FOSS/OC supports ICT spending with local companies, keeping that money 'onshore' and thereby encouraging a valued, employable skills base to flourish domestically, which in turn keeps educated and skilled workers at home and encourages other educated and skilled workers to immigrate, drawing in talent.
2. **Open source supports entrepreneurship and business formation**: FOSS/OC, by recognising participation in software development at the level of the individual and not the corporation, and by shifting the value capture within the ICT industries from proprietary software development or packaged software sales to customisation and integration of existing OSS, also furthers the success of small, medium and micro-enterprises (SMMEs), which can create opportunities for entrepreneurial success of SMMEs, and drive job creation as well as grassroots economic empowerment.
3. **Open source supports innovation, local solutions and learning**: FOSS/OC encourages hands-on, self-directed and experimental learning of 'primary source' material (i.e., source code) with peer-based support mechanisms for guidance and feedback, an empowering way of learning that is particularly important in an information society[10]. And the result is software solutions that are particularly suited to local needs.
4. **Open source promotes collaboration and open standards**: FOSS/OC also provides, encourages and self-regulates a set of rigorous and broadly applicable standards and mechanisms for collaboration, quality assurance and distribution of ICT product (i.e., software), an empowering and team-oriented way of producing products, particularly well suited for the products highly valued in a knowledge economy, and proven across a range

[9] Levin, Alan *et al* 'Open Source Software and the Information Society: Policy and Strategy Recommendations to the Presidential National Commission of the Republic of South Africa', Pretoria: Presidential National Commission, 5 January 2004. Other publications list similar benefits, worded or grouped with slight variations, for example see Wong, Kenneth 'Free/Open Source Software: Government Policy', New Delhi:United Nations Development Programme – Asia Pacific Development information Programme, 2004, or Brett Haggard "The top ten reasons why government should adopt open source" Electronic Government, Vol1 Issue 10 2005.

[10] An 'information society' is one which the creation, distribution and manipulation of information has become a significant economic and cultural activity. The 'knowledge economy' is its economic counterpart wherby wealth is created through the economic exploitation of knowledge.

of industry sectors[11].

5. **Open source supports local content creation and consumption**: Existing FOSS/OC can readily be adapted for local languages, reducing barriers to access and to the mastery of skills while helping eliminate the marginalisation of those from cultures not ordinarily possessing a high level of fluency in one of the world's major languages[12].
6. **Open source reduces vendor dependence and lock-in**: Each of these five benefits above also help counter a psychology of dependence on developed countries and corporations to provide the innovations and solutions to problems faced domestically, even as FOSS/OC helps reduce that dependence in practical terms.
7. **Open source allows market entry for firms that would otherwise be unable to withstand corporate competition:** Supporting the collaborative and communal culture of FOSS/OC development also helps to balance the bare-knuckled culture of market competition in the ICT industries, supporting both social and economic upliftment.
8. **Open source raises the profile of South Africa in the global economy, and narrows the digital divide**: Participating in the FOSS/OC community raises the profile of the developing world, helps to demonstrate its capabilities and its desirability as a progressive, technologically literate and knowledge-savvy nation, and provides a greater degree of participation in and access to the global 'quick response' teams addressing criminal hacker and virus threats. Ultimately this participation should lead to peer based relations, thus narrowing the digital divide.
9. **Open source puts user needs first**: FOSS/OC shifts the competitive advantage among ICT companies to value creation for the customer, removing recurring revenue streams such as licensing upgrades and ancillary software purchases (e.g., for interoperability within a proprietary operating system or application suite) that benefit firms having longevity in an industry and that subsidise those existing firms to the disadvantage of SMMEs and start-ups who cannot compete on equal footing. The latter situation promotes a lock-in of economic winners in a global industry, thereby reducing market competitiveness as well as global economic transformation.
10. **Open source promotes transparency and accountable government**: The nature of open technologies can help move forward a culture of openness and transparency in government as well as society, promoting public access to government by facilitating information sharing and interoperability of ICT systems among stakeholders, and enabling government to be accountable to the people without instead being beholden to the proprietary software and standards of a private corporation.

These benefits start to be felt once the use of FOSS/OC has reached a critical mass or a tipping point within the nation. Government, as the largest user and purchaser of ICT, can play the key role in bringing South Africa to that tipping point.

OSS supports South African developmental goals

Because of these developmental benefits, the adoption, support and promotion of FOSS/OC

[11] For examples, see ThinkCycle www.thinkcycle.com, Creative Commons www.creativecommons.org, Cambia (Center for the Application of Molecular Biology to International Agriculture) www.cambia.org, Wikipedia www.wikipedia.org, and Public Library of Science www.plos.org.

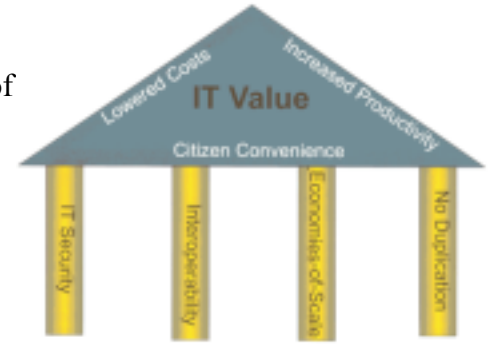
[12] See, for example, www.translate.org.za

helps support the government's developmental goals in ways that conventional proprietary ICTs cannot. These developmental goals, the national strategic socio-economic development objectives, are listed below, followed by a brief description of how FOSS/OC supports it:

Goal 1: Improve the efficiency and reach of government service delivery

The 'e-Government House of Value' recognises the ability of ICTs to enable the following:

- The lowering costs through workflow automation and improved communication;
- Increasing productivity by cutting the cost of administration and channeling more benefits to citizens and businesses – especially those in most need; and
- Improving the convenience of access to services by citizens and businesses



The supporting pillars of IT security, interoperability, delivering economies of scale and avoiding un-necessary duplication are better served by the preferential use of FOSS/OC.

Goal 2: Improve national competitiveness

A vibrant and innovative ICT industry is a necessary requirement for a modern, competitive knowledge based economy. The local ICT industry must be encouraged to develop the skills and competence to develop locally relevant applications and solutions – rather than just supply and support products developed by overseas corporations. Mandating the wider use of FOSS/OC will have this direct effect.

Goal 3: Support local innovation and investment

Local innovation cannot happen in an environment where ICT firms are simply resellers of proprietary software or where users cannot customize and build on existing technologies to better suit them to local conditions and needs. Support for FOSS/OC by government will have ripple effects throughout the economy that will result in more opportunities for innovative products, and investment in developing and promoting them in new market segments and expanding markets in southern Africa and beyond. Additionally, local content and local languages will stimulate local economic as well as social (e.g., cultural, artistic) activity.

Goal 4: Broaden BEE participation in the economy

Opportunities to customize, supply and support FOSS/OC are open to smaller companies, who may often in fact have advantages over larger corporates or branches of multinationals. As the level of development skills improves, black owned and managed firms will find it easier to enter markets or create new ones, thus injecting BEE equity into the ICT industry and broadening participation in the economy.

Goal 5: Build a better world

Government and other organisations need to make use of ICTs anyway; making preferential use of FOSS/OC will expand and strengthen the local economy by keeping spending at home

and building skills and capacity. The ripple effects on investment and job creation into increased demand in other sectors of the economy will contribute towards building a better life for all in South Africa, and allowing African technology and firms to better compete in the region and the world. Additionally, the culture of 'open' communities and the collaborative models they engender are resonant with South African and African societal values and traditions. To encourage them to flourish internationally is to help the world better understand us.

Conclusion

The pursuit of the national strategic socio-economic development objectives by the normal functioning of Government departments, agencies and partners could be supported by the use of any appropriate technology, in that ICTs can help improve efficiency and service delivery. If considered on strictly technical grounds, open source software and standards may have a relative advantage over conventional proprietary ICTs in any given instance. However, given the developmental benefits of FOSS/OC, its use is generally preferred unless there are specific and significant reasons why not.

National Open Source Policy

The national policy on Free and Open Source Software and Open Content has developed over several years' time[13] from primary and secondary research, the input of experts within and outside Government as well as internationally, consultation over several years with a wide range of stakeholders in various forums, and publication and circulation of several drafts with comments from the public. Over the last two years, the primary facilitators of the policy development have been the Government IT Officer's Council (GITOC) under DPSA's guidance as a body of Government ICT experts, and by a Presidential National Commission which gave direction to a diverse team of experts from outside government to consider broader information society factors and develop any appropriate enhancements to the GITOC OSS policy.

The South African policy is progressive but by no means radical, considered by the UNDP to 'give preference' to FOSS. A more radical policy would mandate FOSS in all cases for Government, and a more conservative policy would simply recognise the viability of OSS as an option for Government. Because of its maturity and the relatively open process of its development, South Africa's policy is increasingly well known and well regarded within the OSS community as well as among NGO's and development institutions.[14]

The five components of the policy as stated below are a synthesis of the GITOC OSS policy, revised in June 2005, and the PNC OSS policy, completed in January 2004.

1. Government must implement FOSS/OC on a mandatory basis unless proprietary software is demonstrated to be significantly superior. Whenever the advantages of FOSS/OC and proprietary software are comparable FOSS/OC must be implemented when choosing a software solution for a new project. Current proprietary software must be migrated to FOSS/OC whenever comparable software exists. When FOSS is not implemented, then reasons must be provided in order to justify the implementation of proprietary software.

2. An environment supportive of FOSS/OC must be created by creating knowledge, understanding and capacity nationally and within Government; developing broad FOSS/OC Research and Development initiatives; enforcing and giving preference to the use of FOSS in procurement processes; creating opportunities for trial use of FOSS/OC. Creation of such an environment will require partnerships with all sectors of society.

3. Government should utilise the opportunities presented by FOSS/OC to promote access to information for citizens by driving and embracing enhanced service delivery through electronic channels.

4. All content produced by Government or using Government resources must be Open Content, unless analysis on specific content shows that proprietary licensing or

[13]Formally since the recommendations of the Presidential Advisory Council on Information Society and Development in October 2001.

[14]For example, it has been referenced by the UNDP and the International Open Source Network in their e-Primer on FOSS Government Policy.

confidentiality is substantially beneficial. Open Content will be encouraged generally within South Africa.

5. The policy on FOSS/OC must be legislated to give it the full force of law and as an indicator of the seriousness with which Government views FOSS/OC.

Given this policy, the next step is to develop a sound strategy, supported by the resources and commitment to implement it.

National Open Source Strategy

The strategy outlined below builds on a previous draft strategy from the Presidential National Commission in 2004, which built on a GITOC strategy in 2003. It falls into three phases – initiation, enhancement, and mature – with the first two estimated to require a three year time frame for implementation.

Implementation will require a robust programme of projects. Some projects are included as proposals and examples.[15] This programme will need to be further developed and refined, prioritised, matched against resources and then implemented with appropriate oversight and accountability. The task of further developing the programme of projects will fall to an appropriately mandated body charged with finalising and implementing this strategy.

Strategy	***Project/s***
INITIATION PHASE (6 – 18 months)	
1. Disseminate information within Government a.) All government departments must be included in general learning, content development, consultations and communications functions. People outside the ICT environment must be included in briefings, especially communications and procurement staff. b.) The bridge between the MIOS, open content and OSS must be established through involvement of different spheres of government, communications and human resource development.	Create and conduct a robust programme of: • briefing sessions • information publication through appropriate media • OSS website updates, expansion and maintenance • presentations to relevant interest groups.
2. Initiate trial development and use a.) Encourage use of OSS on a trial basis. b.) Promote development of enhancements to software via the OSS model. c.) Establish OSS awards of a significant nature d.) Assess delivery of SITA against OSS budgetary commitments (R18m for 2004) and responsibilities that they committed to	Encourage and specially fund pilot projects across Government Establish annual 'OSS in Government' and 'National OSS' awards Audit SITA and other appropriate entities on their use and delivery of OSS solutions
3. Consult with partners and stakeholders a.) Create opportunities to consult with users, developers and researchers at an advanced level. Academics and ICT practitioners must be convinced to become involved. b.) Establish an OSS forum to involve all stakeholders, without duplicating functions of Linux User Groups (LUGs) or the Internet Society.	Establish or support and participate in an OSS stakeholder forum
4. Establish and execute a supporting research programme a.) Establish a research agenda based on the following objectives: • Develop a consistent picture of the needs and	Commission ongoing short research papers e.g. ICT systems use in government with a view to migrate to OSS, OSS for development, OSS related national policy analysis and others as required (e.g., software patents)

[15]These projects are taken from several of the input documents published by GITOC, SITA, DPSA and others.

Strategy	***Project/s***
expectations of Government with regard to OSS. • Develop policies and legislation relevant to the use of OSS in Government. • Develop research and evaluation instruments to assist decision makers in the identification and evaluation of opportunities and areas for the appropriate use of OSS. • Develop a definition of the roles of the various sections of Government in the area of OSS, including the roles of SITA and ITAC. • Identify opportunities and identify pilot applications for the use of OSS in Government. • Define a clear longer-term research agenda to support the OSS strategy. b.) Research should prioritise E-government and migration to OSS with less emphasis on sophisticated applications development.	Establish an incentive program for well-documented OSS pilot projects that are of wider application and use. Ensure robust OSS legislation is passed (standalone or component of the emerging national e-strategy).
5. Consolidate support capacity Ensure proper mobilising of existing OSS support capacity, plan further expansion and build the necessary capacity where successful trial implementations can be replicated. Include governing bodies of key stakeholders, universities, education organisations and labour in this process, with areas of responsibility to be agreed upon.	Develop, maintain and publish a database of OSS and related services suppliers Consider various OSS certification or credentialing options for suppliers
6. Include OSS utilisation in short and medium-term plans a.) Audit ICT plans of national and provincial Government departments for clear plans to convert to OSS b.) Secure and assign resources to manage and monitor the ICT plans c.) Solicit critical responses to these plans and report achievements against plans to the community	Perform and publish on an ongoing basis rigourous audits of departmental ICT plans [as per current (since Nov 2003) public service legislation]
7. Level playing fields a.) Avoid any bias against OSS solutions in Government procurement procedures by: • Developing procedures and standards to ensure that tenders and contracts are free of any specifications that unjustifiably discriminate against OSS • Developing an OSS procurement communication strategy to remove any biased mindset that may exist among relevant users and decision makers • Train and equip tender evaluation teams to deal with the relevant OSS and PS options fairly • Establishing an external oversight committee made up of individuals (from all key stakeholder groups) b.) Wherever possible, avoid acquisition of hardware that does not support OSS c.) Procurement reporting must demonstrate progress against OSS growth targets	Commission research on sources, extent, and effects of bias in procurement of software. Develop and implement a communications strategy for neutralizing bias in procurement of ICT's. Develop and maintain a database of service providers of OSS and open standards systems and related services Enhance procurement processes to align with OSS policy and support OSS strategy

Strategy	***Project/s***
8. Develop and execute a supporting communications strategy a.) Develop a comprehensive OSS communication strategy that will ensure optimal knowledge and understanding of, and commitment to OSS. Target the political level, departmental management, IT professionals and computer users in general. b.) Regularly assess awareness and understanding among stakeholders. c.) Establish common communication standards through implementation of the MIOS and establishment of metadata frameworks (e-GMF) and standards (e-GMS).	Establish and implement communications strategy for promoting the use of OSS in government.
9. Develop and promulgate legislation and regulations on Open Content Initiate a process to amend the Copyright Act and related Acts (e.g., on patents, publications, trademarks and others) so as to facilitate open content in government.	Enhance intellectual property legislation and regulations
ENHANCEMENT PHASE (1 to 3 years)	
10. Implement projects defined during the previous phase a.) Implement, assess and extend or modify the projects developed during the introductory phase b.) Develop systems and procedures needed during the *mature phase*	Commission a review to assess completed and ongoing OSS strategy projects.
11. Standardise software selection processes Develop and implement a software selection process that more strongly favours OSS, building on increased support and development capacity as well as management experience and research data around OSS	Commission the development of a revised software selection process for SITA and government departments.
12. Ensure best practice software development processes a.) Assist all government institutions with software development plans to ensure the advantages of using the OSS model and using OSS platforms are considered, justifying any selection of PS over OSS b.) Audit application and systems development plans and tenders to insure adherence to the MIOS (for minimum interoperability) and proven open standards	Establish a software registry for government. Co-ordinate ICT plans with software registry using audits, reviews and analysis of departmental use of systems.
13. Aggressively pursue FOSS/OC capacity development a.) Develop capacity within Government with a certain minimum level of training for all prospective users across all Departments at all levels, with more intensive and specialised training for 'champions' and 'experts' in every Department. Expert skills will be prioritised in service provider organisations such as SITA b.) Balance skills development through formal training with real OSS use wherever possible c.) Focus ICT capacity development on open systems,	Establish an incentive programme for OSS champions in government, to include communication on the training opportunities. Engage Higher Education Institutions in a strategic planning process on FOSS/OC skills and education Implement a roadshow for HR and training providers to government communicating the importance of training on non-proprietary technologies.

Strategy	***Project/s***
interoperability, policy and software engineering principles d.) Initiate transversal projects that include a number of different government organisations from different spheres e.) Establish generic principles on the appropriate use of ICT	Produce and distribute training content for OSS.
14. Establish and maintain strategic partnerships a.) As Government, seek partnerships with all sectors in South Africa, with the rest of Africa and the world, for promoting development, implementation and support of OSS b.) Assign structures and frameworks for governing partnerships and responsibilities. Transparency is essential to drive greater accountability.	Establish a multi-stakeholder association for the development of OSS in SA
MATURE PHASE (3+ years)	
15. Standardise and monitor content gateways Ensure that government content gateways conform to agreed open standards.	Establish a monitoring and reporting body for interoperability and standards; regularly publish reports and degrees of compliance.
16. Sustain and enhance systems and procedures on an ongoing basis a.) Persist with communication to maintain general confidence in the viability of OSS solutions b.) Maintain clusters and networks of support among stakeholders c.) Contribute to promotion of OSS development and use on the continent d.) Resources and plans must be in place to plan for the next wave of new technologies, (e.g., around convergence)	To be considered
17. Seek to expand and deepen levels of implementation A broad base of Open Source Software will be used across government, and other industries as measured in regular intervals against updated targets	To be considered

The Way Forward

Responsibilities

In order to ensure delivery against the strategy, responsibilities must be identified, delegated and accepted. These include the following:

1. Finalisation, approval and publication of the Strategy
2. Oversight of programme of projects
3. Evaluation and reporting of programme results as progress against goals and of overall effectiveness of the strategy
4. Managing relationships with partners
5. Communicating with stakeholders

National Task Force

A National Task Force on Free and Open Source Software and Open Content would be an appropriate body to take on these responsibilities, supported by a Cabinet mandate and fully resourced.

Its members should be drawn from Government, the private sector, labour, civil society and the global Open Source community, having a balance of expertise in technology, research, economics, law, administration, communications and business, with representation of the interests of proprietary software to be included. Government representatives would need to be sufficiently senior to ensure the Task Force can achieve its policy and legislation goals.

It should have a three year mandate, with that mandate to expire, be modified or renewed as appropriate following the Declaration of a second national Open Source Strategy Conference in 2008 to be convened by Government.

Key Role Players

While the National Task Force engages in its work, a range of key role players can begin to consider the effects of the policy on their organisations and begin to take actions in the short term. These key role players include

Organisation	***Suggested Actions***
GITOC	for workgroup discussion and proposal
MINMEC	for workgroup discussion and proposal
DPSA	for workgroup discussion and proposal
DTI	for workgroup discussion and proposal
Meraka Institute, CSIR	for workgroup discussion and proposal
The Shuttleworth Foundation	for workgroup discussion and proposal
Organised Labour	for workgroup discussion and proposal

Organisation	***Suggested Actions***
Private sector ICT companies	for workgroup discussion and proposal
Private sector generally	for workgroup discussion and proposal
LUG's, the Internet Society and other user groups	for workgroup discussion and proposal
Foundations supporting FOSS/OC (e.g., Open Society Institute, Google Foundation, Markle Foundation, Wikipedia Foundation, etc.	for workgroup discussion and proposal
NEDLAC	for workgroup discussion and proposal
FOSSFA	for workgroup discussion and proposal
DFID, IDRC	for workgroup discussion and proposal
United Nations, World Bank, African Union, NEPAD	for workgroup discussion and proposal
Creative Commons	for workgroup discussion and proposal

Metrics

Measuring the results attributable to the policy and strategy will be essential to understanding the value of the strategy and to encouraging stakeholders to increase their participation. Detailed metrics should be developed by the National Task Force on Open Source, to understand the following:

Area of measure	***Recommended Targets for end 2006***
Economic and financial impacts	• 10% of all Government ICT expenditure is on OSS
Implementation	• 20% of school labs have OSS installed • 60% of web servers use OSS • 30% of office infrastructure (e-mail, DNS, proxy) use OSS • 30% of desktop applications use OSS
Changing skills and skill levels in and out of ICT specialties	• 60% of IT personnel are OSS trained • 10% of IT personnel are OSS certified • 20% of teachers responsible for school ICT labs are OSS trained • 40% of HEI institutions utilise OSS education and teaching tools
Awareness and perceptions in all sectors and internationally	• 100% of all CIOs and IT personnel are OSS literate
Levels of local content and in local	• 20% of Government produced

Area of measure	***Recommended Targets for end 2006***
languages including sources of contribution and use	information available in more than 2 official languages • 50% of published Government content available electronically in an open standards format
Changes in the marketplace of service providers	• 30% of all new systems are able to run in an OSS environment
Government procurement changes	• 60% of servers are able to run OSS

Challenges

A number of challenges will be faced in implementing the policy and strategy. Some of the more significant ones have been identified along with possible solutions

Challenge	Proposed Solution
Awareness and understanding by ICT professionals of OSS	for workgroup discussion and proposal
Awareness and understanding by managers of OSS/OC	for workgroup discussion and proposal
Industry bias toward PS	for workgroup discussion and proposal
Volatility of current OSS support marketplace	for workgroup discussion and proposal
Experience with migration and implementation of OSS projects	for workgroup discussion and proposal
Availability of funding	for workgroup discussion and proposal

Draft Declaration

Declaration on the South African National Strategy on Free and Open Source Software and Open Content ("National Open Source Strategy")

1. We, the delegates assembled in Johannesburg from 22-23 August 2005 for the Go Open Source Task Team Conference on the National Open Source Strategy, declare our common desire and commitment to the strategic use of information and communications technologies in order to further socio-economic development and affirm the central place that Free and Open Source Software and Open Content (FOSS/OC) have in realising this goal.

2. We recognise that FOSS/OC include both technological and environmental elements, that FOSS/OC are characterised by accessibility, interoperability, open standards, transparency, customisability, contribution, and open licensing, and that FOSS/OC involve those who use, modify, enhance and create such technology and content.

3. We recognise the South African national strategic objectives for socio-economic development are to improve competitiveness, increase local investment, broaden participation, build a better world, improve service delivery and in doing so reduce poverty and redress imbalances of the past.

4. We affirm that FOSS/OC help achieve these objectives by contributing to socio-economic development in significant ways that other technologies and forms of content do not.

5. [Statement on effects of FOSS/OC regarding Economic Impact – to be drafted during the Conference]

6. [Statement on effects of FOSS/OC regarding Infrastructure and Facility Provision – to be drafted during the Conference]

7. [Statement on effects of FOSS/OC regarding Social Impact – to be drafted during the Conference]

8. [Statement on effects of FOSS/OC regarding Service Delivery – to be drafted during the Conference]

9. [Statement on effects of FOSS/OC regarding Policy Formulation – to be drafted during the Conference]

10. It is strongly in the interest of Government to adopt, support and promote the use of FOSS/OC

POLICY

11. The basic foundation of policy is for government to implement FOSS/OC on a mandatory basis unless proprietary software is demonstrated to be significantly superior.

Whenever the advantages of FOSS/OC and proprietary software are comparable FOSS/OC must be implemented when choosing a software solution for a new project. Current proprietary software must be migrated to FOSS/OC whenever comparable software exists. When FOSS is not implemented, then reasons must be provided in order to justify the implementation of proprietary software.

12. An environment supportive of FOSS/OC must be created by creating knowledge, understanding and capacity nationally and within Government; developing broad FOSS/OC Research and Development initiatives; enforcing and giving preference to the use of FOSS in procurement processes; creating opportunities for trial use of FOSS/OC. Creation of such an environment will require partnerships with all sectors of society.

13. Government should utilise the opportunities presented by the OSS movement to promote access to information for citizens by driving and embracing enhanced service delivery through electronic channels.

14. All content produced by Government or using Government resources must be Open Content, unless analysis on specific content shows that proprietary licensing or confidentiality is substantially beneficial. Open Content will be encouraged generally within South Africa.

15. The policy on FOSS/OC must be legislated to give it the full force of law and as an indicator of the seriousness with which Government views FOSS/OC. Related policies must be evaluated and replaced by FOSS/OC legislation.

NATIONAL TASK FORCE

16. A National Task Force on Free and Open Source Software and Open Content ("National Task Force on Open Source") should be established and funded by Government with the responsibility of finalising the draft Strategy produced by the Go Open Source Conference, and seeing that it is approved and published

17. Further responsibilities should include oversight of a programme of projects for implementing the Strategy; evaluation and reporting of programme results and of overall effectiveness of the strategy; managing relationships with partners; and communicating with stakeholders

18. The members of the National Task Force on Open Source should be drawn from Government, the private sector, labour, civil society and the global Open Source community, having a balance of expertise in technology, research, economics, law, administration, communications and business, with representation of the interests of proprietary software to be included. Government representatives should be sufficiently senior to ensure the Task Force can achieve its policy and legislation goals.

19. In order to share the benefits of the National Open Source Strategy and for alignment with other ICT-related African development strategies, relationships with African organisations should be given special attention, including NEPAD's e-Africa Commission and Information Society Partnership for Africa's Development (ISPAD), among others.

20. The National Task Force on Open Source should have a three year mandate, with that mandate to expire, be modified or renewed as appropriate following the Declaration of a second national Open Source Strategy Conference in 2008 to be convened by Government.

21. Measuring the results attributable to the policy and strategy will be essential to understanding the value of the strategy and to encouraging stakeholders to increase their participation. Detailed metrics should be developed by the National Task Force on Open Source, to understand economic and financial impacts, technical performance, changing skills and skill levels in and out of ICT specialties, awareness and perceptions in all sectors and internationally, levels of local content and in local languages including sources of contribution and use, changes in the marketplace of service providers, among others

22. We are committed to helping address the many challenges that will be faced by the National Task Force on Open Sources as the National Open Source Strategy is pursued. These are likely to include lack of awareness and understanding of FOSS/OC, budgetary and resource constraints, lack of experience working with and implementing FOSS/OC, pervasive bias away from FOSS/OC, the small marketplace of FOSS/OC service providers, active resistance from commercial interests opposed to FOSS/OC, among others.