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# The Desirability of FOSS Procurement

## Leon Louw

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**What is FOSS?**

1.      There is much confusion regarding the precise meaning of "FOSS" and related terms in the popular discourse, even amongst experts. This is a brief clarification of my understanding of these terms in the hope that all participants will agree.

2.      Instead of there being a binary option, as the discourse suggests, the position may be better understood by way of a simple matrix, with examples where one comes easily to mind. The purpose of the matrix is to establish a clear delineation between the concepts involved. If I am mistaken about the examples I've chosen, there are others that will suffice:

| Source code | Free | Semi-free | Commercial |
|---|---|---|---|
| Proprietary source | Acrobat/Java/iTunes | AVG antivirus | Mac/Symantec |
| Open source | FireFox browser | IBM | Oracle |
| Copyright-free source | ? | ? | ? |

3.      Regarding "Copyright" (last row above), not only is *all* software automatically protected by copyright law, but (apart from a few obscure inconsequential exceptions) it is jealously guarded by copyright holders, even where source code is "open". *Creative Commons* licences, for instance, specify strict limitations on what might be done with it. Code may not be used for commercial purposes, may be used only to adapting or enhancing the original software, may not be claimed to be the creation of another, may be used only with a link to the licence, or whatever. Other open source licences (there are many) specify usage rights that are more or less restrictive. I could not find any significant software in respect of which copyright has been waived or abandoned completely. For there to be no copyright, a copyright-holder would have to waive or abandon all their rights explicitly, or they would have to die after their rights had expired by effluxion of time many years later.

4.      A third dimension could be added to this two-dimensional matrix, namely whether or not the software is the subject of intellectual property rights. This is probably the aspect around which the greatest confusion prevails. It is generally assumed that FOSS is not protected by intellectual property rights (IPR - copyright, trade marks, patents etc). However, I could not find a single example of software where the IPR had been waived or abandoned by its creators or owners. On the contrary, the most common and best known examples of FOSS stress the centrality of their IPR by way of "licences" according to which, for instance, the code may not freely be used on other unauthorised software, and the software may not be commercially sold.

5.      Virtually none of these are clear cut in that almost every example of any combination has exceptions. Microsoft, for instance, provides some free-to-all-users software without it being open source (Internet Explorer), and some commercial software that is free to many users (Windows and Office for education, NGOs etc). It has also released some FOSS.

6.      Since clarity regarding the elements of the matrix is essential for constructive discourse, relevant terms are defined as follows:

   a. "Free" software or "freeware" is software that can be used, usually subject to specified conditions and limitations, at no direct monetary cost to users. Sometimes only specified users are authorised to use it at no monetary cost.
   b. Often what is called "freeware" is really only semi-free in that it is subject to diverse limitations and "licences". There are many limitations, , including:

i. Advertisements that are removed only if the software is paid for.
ii. Functionality may be limited, and full functionality occurs after payment or upgrading to full or more advanced versions. There may be several levels between the "free" and full cost version.
iii. The software may be "free" only if used in combination with commercial software or hardware, hence being free may be an illusion.

c. "Open source" means the source code is readily available. This means that users and others can make adaptations that suit them. This will seldom be a benefit to government, since it is unlikely to employ and pay programmers to do so, which would in any event defeat much of the cost-saving purpose of FOSS. Contrary to popular misconception, open source code is not freely usable. One of the licensing restrictions is that copyright would be breached if it is used in commercial software. This means that independent programmers needing to earn a living are usually not allowed to do so by using supposedly open source code to produce applications, add-ins and the like which they sell to users of the FOSS software concerned or otherwise. The point is that FOSS copyright is fully protected and enforced.

d. "Proprietary" code is kept secret by creators of the software.

e. "Commercial" software is software that is sold at a price. Despite assumptions to the contrary, this does not imply the absence of commercial interests in FOSS.

f. "Shareware" is software that falls somewhere between freeware and commercial ware. There is a complex range of shareware options, from pop-up ads to free trial periods, "lite" versions to "pro" versions, versions that are free for some users to ones that are charged for only if used for specified purposes, and so on.

7. It is often asserted mistakenly that virtually all free software is open source and virtually all open source software is free. Whilst the latter may be true, the former is by no means true. I do not know the actual numbers, but think it safe to say that much or most free software is not open source. This is especially true of thousands of "small" programmes disseminated by geeks and nerds. Many of them provide freeware as a loss-leader with a view to introducing people to their shareware or commercial ware. Many are trying to build a reputation, and many are simply enthusiasts using their proprietary code for what amounts to the delight of producing applications people want.

8. Free and open source software (both concepts) have recognised acronyms (OSS and FOSS). The "F" in FOSS is known as "freeware". The terms for what is regarded as the other side are "proprietary" and "shareware" (again, both distinctive concepts). The remaining category (commercial) does not appear to have a recognised term. I suggest juxtaposing "FOSS" with "CAPS" (commercial and proprietary software).

**FOSS policies in other jurisdictions**
The United Nations took up the FOSS cause by actively encouraging developing countries to adopt FOSS procurement. Unfortunately, much of what was done in the name of the UN seems to have ended up in the hands of ideologically motivated activists. They, in turn, worked with or converted locals to their cause. This led to crude versions of the idea being promoted as a binary choice in many countries, including, it seems, South Africa. In time, reality forced refinements and modifications, but the essential trust remained a belief that there should be a pro-FOSS bias. Lengthy policy documents and "Guidelines" appeared and went through various iterations in most countries. Some of these are available on the SITA website and websites of related government agencies and departments. They all reflect a trend towards realism, but not an acceptance of software procurement as not being a special case in need of distinctive policies and biases.

Having said that, progress (in all spheres) does entail constant re-evaluation, especially in areas evolving as quickly as IT. Old habits, such as using only one company's software, should not be cast in stone. There does not seem to be a need to anguish unduly about old habits dying hard. After all, the once mighty IBM was unseated by Microsoft at a time when it was needlessly being prosecuted – some would

say persecuted – by US and other competition authorities. Many once dominant programmes, such as Framework and WordStar, have been ousted by new-comers. The FOSS phenomenon is a spontaneous challenge to established commercial applications, and FOSS software enjoys a growing market share, albeit limited. The fact is that most users still prefer buying software for a range of perfectly legitimate reasons. No one knows whether current trends will accelerate, stagnate or abate.

The computer world is a splendidly dynamic, competitive and innovative world. The FOSS movement seems to think that, in this sphere as opposed to others, governments, especially third world governments, should be trend-setters. This seems to me to be a very ill-conceived notion. If ever there was a sphere in which governments should be followers, it may be in the credibly fast-moving dynamic and innovative world of IT. I am aware of no reason why governments should be trusted to know better in this context than "the market". This hypothesis seems to be supported by the international experience which started with a big FOSS bang and then backed-off somewhat as realism set in. Here are some examples:

**United Kingdom**
The UK Government's updated policy is that it "will consider OSS solutions alongside proprietary ones in IT procurements. Contracts will be awarded on a value for money basis." (10/04)

**Spain**
The Spanish parliament overwhelmingly rejected (95% voting against) a proposal that would have mandated FOSS procurement and decided that (a) software procurement should be merit-based, and (b) that the government must promote competition and not limit freedom of software choice. (12/05)

**Ireland**
Ireland has turned to open standards instead of open source having concluded that "long-term costs associated with open source may outweigh the short-term benefit." (4/04)

**New Zealand**
New Zealand's policy is that "Value for money and fitness for purpose" should determine software procurement decisions." (3/03) The NZ government draws attention to the legal obligation on government not to be discriminatory. Its policy guidelines do not appear to espouse FOSS that differs significantly from other forms of procurement.

**Denmark**
The "maximum value for money measured on the basis of merit … irrespective of whether this implies using proprietary software … or open source."  Objective criteria are mandatory, such as quality, value, interoperability, security, flexibility, scalability, and open standards. (6/03)

**Italy**
Software to be chosen based on quality and value. (6/03)

**Canada**
A "balanced approach" in terms of which "policies and guidelines do not bias one software business model over another."  Government agencies and departments must base software decisions on key factors such as reduction in complexity, security and privacy, proven standards and technologies, and total cost. (4/04)

**United States**
Technology and vendor "neutral". (7/04)

### Peru
Government agencies must compare the value of alternatives and identify the software that best meets their needs under the principle of neutrality, transparency, efficiency, and austerity. (10/05)

### Slovenia
Government "will treat open-source and proprietary software solutions equally." (3/03)

### Malaysia
FOS is to be promoted to the extent that it:
- reduces total cost (*note 'total'*)
- increases freedom of choice
- increases interoperability
- increases growth of the ICT industry
- increases growth of the OSS industry
- increases growth of the OSS user and developer community
- increases growth of the knowledge-based society
- reduces the digital divide.

### Australia
The Australian government has issued a policy document which presents a balanced explanation of concepts and terms, and "potential" benefits, costs and risks. Having provided relevant information, it leaves software selection to individual departments and agencies. It bases the case for OSS primarily on the fact that there has been a spontaneous trend towards it (in government and the private sector), and that it should therefore be considered an option. It is not prescriptive and suggests no bias beyond being informed about and taking advantage of OSS where appropriate.

### India
The Indian government's guidelines are primarily aimed at ensuring that government decision makers are properly informed and are aware that the government has no objection to the use of FOSS. "Since FOSS is new and unknown to most decision makers, official recognition and legitimacy has a strong promoting effect on FOSS adoption." It does not suggest FOSS where proprietary has net benefits.

### European Union
"The purpose of this guideline is to allow individual public agencies … to acquire open source software … This guideline shows … how to do this following European procurement regulations alone … what is the justification for this guide? … Many public agencies are unclear how to go about this, and need advice and guidelines." Thus the EU's policy is not to promote FOSS, but merely, as in Australia, to permit it and to explain how those who want it must proceed. It adds negative and positive criteria for consideration.

These are examples of pro-neutrality jurisdictions. There are some which, like South Africa, are, at least for the time being, biased towards FOSS. Based on the prevalence of criticisms within the FOSS movement, there appear to be few if any implementing FOSS policy with the consistency or zeal espoused by adherents. The degree of distress this induces is, for me, difficult to comprehend. Normally there are divisions that are quite easily explained. The reason why socialists tend to believe that there is global warming and that it is anthropogenic is predicted by the fact that it appears to justify increased government intervention, taxation and spending, along with a deluge of anti-business legislation. Classical liberals tend to be skeptics, not because they have different scientific assumptions, but because they do not want their adversaries to have excuses for curtailing economic and personal liberty.

Certainly anti-business and anti-capitalistic sentiment will attract socialists towards the FOSS camp, for obvious reasons, but socialism does not seem to characterise the movement. It includes liberals

and libertarians, and rugged individualists, many of whom, paradoxically, seek and enjoy considerable wealth generated by way of the intensely entrepreneurial production of proprietary software. Mark Shuttleworth is one of many examples. At the time of writing, I have not been able to form an informed opinion of what the determinants are of being for or against FOSS, or, like myself, regarding neutrality as the only sensible policy.

## South African government software procurement policy

FOSS policy has been determined within the Department of Science and Technology by various structures, and currently resides within the State Information Technology Agency (SITA). SITA produced the government's *FOSS Flight Plan*, which, like various other documents, describes FOSS as a settled virtue and commits, by implication, considerable resources to the cause. It goes beyond procurement into such fields as supporting FOSS development in South Africa for (presumably free) export to the world. Quite why we, as a country, should want to do this is unclear, at least to me. Whether our government is likely to invest wisely and produce truly worthwhile FOSS is debatable. Whether we should divert human and non-human resources from other needs is especially debatable.

The South African Government has decided to "implement FOSS unless proprietary software is demonstrated to be significantly superior." Additionally, "Whenever the advantages of FOSS and proprietary software are comparable FOSS will be implemented when choosing a software solution for a new project. Whenever FOSS is not implemented, then reasons must be provided in order to justify the implementation of proprietary software. The South African Government will migrate current proprietary software to FOSS whenever comparable software exists. All new software developed for or by the South African Government will be based on open standards, adherent to FOSS principles, and licensed using a FOSS license where possible. The South African Government will ensure all Government content and content developed using Government resources is made Open Content, unless analysis on specific content shows that proprietary licensing or confidentiality is substantially beneficial. The South African Government will encourage the use of Open Content and Open Standards within South Africa."

This is strong stuff, arguably unconstitutional on various grounds. Why the government appears to have been recruited so unhesitatingly by FOSS ideologues is unclear. All the motivation I came across in my brief research seemed to lack clarity on why FOSS should be advanced at our national cost. The policy is clearly stated in various sources as one that will advance sub-optimal software usage and development. Unlike all other jurisdictions I researched, there is in our policy no gesture of balance. Early dogma, I am told, has softened in practice (implementation), private discussions, and unofficial statements. I do not see the introduction of balance in official sources.

A definitive source of current policy is the "Policy On Free And Open Source Software Use For South African Government". It provides the "justification" for the policy thus (my précis and *interpolations in italics*):

> FOSS/OC is often a viable choice. Justifications (for proprietary) typically focus on 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, security and other measures, FOSS/OC typically proves highly competitive (and frequently superior).

> *Why then have private companies not implemented the policy?*

> As items of FOSS software mature, they have become easier to use. Local firms as well as the wider user and developer community offer support, and interoperability. Alternative business models have arisen which allow contributors to profit from their efforts without charging for the software itself, and many small and large commercial IT vendors have professional teams contributing to open source development projects. *Here the vested commercial interests of FOSS producers and marketers is acknowledged. Why should the government sacrifice optimality in their favour and purposefully target their competitors?*

> Because of the significant developmental benefits that result from the widespread use of FOSS/OC … the policy establishes a clear preference for FOSS.

*It is unclear to me why there should be "developmental benefits". On the contrary, the default assumption according to economic and development theory is that maximal developmental benefits should be expected from policies that minimise complexity, take advantage of extant resources (including know-how), and cut aggregate costs (including secondary and indirect costs).*

In those instances where proprietary software offers a significant advantage in the short term, it still ought to be … used. In the longer term, proprietary industry partners should be encouraged to provide FOSS solutions in line with the strategic policy of Government.

*Why confine net benefits to only those that are "significant" and then only to the "short term"? Why should FOSS be a "strategic" policy? What is strategic about it? If there are strategic considerations, are they not more likely to suggest using proven software from stable sources that provide backup, support and product guarantees? Should long term policy not be to sustain advantages per se? The idea that current proprietary providers should switch to FOSS suggests a level of ignorance or naiveté regarding business models. The industries which seem to have informed government policy are presumably those that provide software for profit in direct competition with proprietary providers as part of another package, such as consultancy services and hardware. Enterprises, including SMMEs and individual programmers, who do little more than produce software have a perfectly legitimate business model that necessitates charging for what they produce. To ask them to stop doing so and to continue producing what is currently the world's preferred software is like asking vehicle manufacturers to stop charging for vehicle rental companies.*

This is the essence (verbatim) of the official case for the FOSS policy. Non-core wording is omitted.

**Anomalies in the implementation of government procurement policy**

The first clue that FOSS dogma may be misguided is that the government's departments and agencies tasked with implementing and promoting FOSS are themselves using commercial and proprietary software, and there are examples of reversion from FOSS to proprietary.

The CSIR, which is the pre-eminent government agency tasked with advancing the FOSS cause, uses proprietary software. The fact that it does so is advertised prominently on its website in respect of its Oracle software. The site includes information on how to use the software and get Oracle support, and asserts the closed nature of the software thus: "*Copyright © 2005 Oracle. All Rights Reserved*".

The CSIR hosts the government agency dedicated to migrating the government and much of the country to a FOSS ecosystem. The Open Source Centre (OSC) is a FOSS cost. It is a "semi-autonomous" agency dedicated to promoting FOSS. Is the OSC the equivalent of a government agency dedicated to promoting pop music in preference to jazz?

The HSRC informed me that they tried using a FOSS operating system, but reverted to Windows for various reasons, such as security, stability, support, skills, compatibility and interoperability problems.

I frequently do PowerPoint presentations at government venues and events, including its training establishments (SETAs). I have yet to see any FOSS software in use. Routinely I am asked to provide my "PowerPoint" presentation, and to work not only with proprietary software, not just from Microsoft, but, also, for instance, proprietary (ie commercial, freeware and shareware) anti-virus software, multimedia software, web browsers and utilities, despite the fact that FOSS is readily available for such purposes. I use much of it myself.

The ITC managers in two government departments told me that they cannot reasonably be expected to implement FOSS policy. The first said that there was no FOSS software that could satisfactorily perform the core need of her department. The second said that they had commissioned their own dedicated software at great cost and could not reasonably be expected to make it freely available to the general public.

Professor Robert Vivian's Reading addresses constitutional imperatives such as the need for government policy to (a) be preceded by *bona fide* consultation, (b) be fair and reasonable (to all concerned), and (c) be devoid of unfair discrimination (including discrimination against entrepreneurs and judicial personae). I may be mistaken, but my limited research suggests that these conditions have not been met. My task is to address a different question, namely, whether, assuming the policy to be

constitutional, it is a good idea. To that end this is a precis of what I understand the policy to be, and the actions surrounding.

## Why FOSS?

Beyond the uncompelling motivation mentioned above, it is surprisingly difficult to find out why there is such passionate advocacy of FOSS. It is not a simple matter of wanting the government to lower procurement costs. Since people responsible for government procurement are automatically bound to procure optimally there is no need for a distinctive policy on the matter.

It is true that the absence of a commercial interest tendering in many, but not all, cases reduces the likelihood of active tendering for procurement contracts. Behind many FOSS products there are large multinationals, such as IBM, offering FOSS with purely commercial motives. There are also powerful selfish interests behind offering FOSS where software consultants want to secure procurement contracts by offering their services in combination with FOSS, thereby enabling lowering their prices and enhancing their chances of submitting winning bids. Heads of government departments and agencies have an obvious vested interest in securing lower procurement prices in order to release more of their budgets for other purposes.

One of the many curiosities of FOSS is the huge amount of time, money, passion and expertise invested in promoting it with no apparent self interest in doing so. People in the debate find it surprisingly difficult to explain why they feel so strongly about it and devote so much of their productive resources to the cause. In search of answers I called various advocates of FOSS, on one hand, and ITC experts, on the other. Here are some responses (with hypothetical names and approximate quotes):

- Mathew: Some people just love writing programmes and sharing them with others, sometimes to show-off, and sometimes because they feel as it they are promoting cosmic virtue. It's their hobby, their nature, and they think that's how it should be for all programmers. (*I could get no clarity on why they demand of others that they should feel the same way about it*).
- Rebecca: Some people believe that certain things just ought to be free, such as welfare, health care and education. They believe software is like that. It's a belief system.
- Brian: It's the same as advancing any cause, just as people might be for the environment, the arts or religion.
- Norma: It's really a kind of religion. There's no logic to it. It's a matter of belief, blind faith, rather like a self-evident truth not in need of substantiation.
- Steven: It's really very simple. It's just about lowering costs. If something is available for free, why pay for it?
- Anita: Socialism, it's all about socialism. Some of us care about human values, we want things done for people not for profit. We hate capitalism, commercialism, materialism, corporate values and selfish motives. Software should be for the people, it should be free, like schooling. (*When I suggested that clothing, housing and food are also "for the people", she agreed and said they too should be socialised.*)
- Tom: Oh that's all bollix. FOSS people are just bad losers. FOSS is the residue of failed attempts at producing commercial software. That explains their invective, bitterness and resentment. They also can't stand people keeping secrets, like their superior source code.

## Considerations

Many questions arise that I have not seen addressed in the limited amount of literature I consulted, such as how people motivated purely by benevolence – assuming many or most are – will earn a living if they devote the hours needed to produce quality software to the task. It seems that the FOSS movement has in mind that all software should be produced by people otherwise employed in their spare time. Some, perhaps those who are more realistic, have in mind that FOSS, to be sustainable, innovative and sophisticated, should be produced as a by-product of something else, such as hardware sales or consultancy services.

This approach merely suggests a different and no less commercial model. Economic reality is that rates of return on business will tend towards equilibrium. In other words, the net cost to society will end

up being the same under either model. In a world where the real motive behind (most) FOSS is commercial self-interest, the rivalry should be seen not as a battle between virtue and vice, but competitors trying to increase profits and market share by alternative means.

A potentially serious consideration is consumer protection. All products have explicit or implied warrantees, including software. Most commercial providers are in a position to honour their warrantees and are inspired to do so by the profit motive (which induces them to please consumers and build reputations). Most software, especially FOSS, has conditions that curtail consumer protection rights. The new consumer protection legislation has the effect that many of these contractual limits are ineffective. In other words, if government uses FOSS it may be sacrificing its *de jure* or *de fact* rights.

## Why not FOSS in other contexts?

One of the issues to which I could not get a satisfactory answer is why debate arises only in the ITC context. The Free Market Foundation, like many NGOs and policy institutes, provides the publishing equivalent of FOSS in that its publications are freely downloadable in editable text form, and may be freely disseminated. It provides what might be called "free and open source publications". Penguin and Sunday Times, on the other hand, charge for their publications and do not allow unauthorised reproduction. Magazines that advocate FOSS do not practice what they preach by producing their own publications as free and open.

The same is true of music. Some performers make their recordings freely downloadable from YouTube and other websites, whereas most pop stars and their recording companies battle relentlessly against piracy.

There is professional and amateur sport without the two constituting hostile factions. People who do community service do not attack professional social workers. Psychologists are not denounced by Life Line. And so on.

The real world is full of examples of the two models and a kaleidoscope of variations between co-existing, often co-operatively. The conspicuous difference is the almost inexplicable adversarial, often histrionic, clash between FOSS and proprietary. The Free Market Foundation and Penguin, for instance, are not locking horns over which model should prevail and do not lobby government to procure only free or commercial publications, such as school books. Commercial entertainers are not targeted for invective by one who disseminates their music for free.

## Why FOSS is a cause

An enormous amount of webspace and bandwidth is devoted to FOSS advocacy. It also enjoys an unpublished (as far as I could tell), but seemingly substantial financial investment. Prominent amongst sponsors of the FOSS cause is South Africa's Mark Shuttleworth.

I have presented the matter as a conflict between two software models, and explained that there is a more complex matrix of models. As in most contexts, a rich diversity of possibilities gets conflated into a seemingly simple binary imperative where participants are forced into choosing one of two. This may be a disservice to CAPS. I find virtually no opposition to FOSS. Producers of CAPS do not raise any objection to FOSS. This seems to be an exception to the general rule that it "takes two to tango". It is a largely one-sided debate. The only response I have seen from the CAPS side is to (a) market and promote their own software (and related services) and (b) to espouse procurement "neutrality". I have not seen, though suspect it does exist, a coherent argument against neutrality.

So, what we seem to have, is one side saying governments must be biased and dogmatic, almost religious, and the other saying software procurement should be like any other procurement, that it is not a special case.

One of many websites espousing FOSS with religious fervour is Tectonic (http://www.tectonic.co.za). It laments, one of many, that the government's programme to provide teachers with laptop computers specifies the pre-installed software to be mostly proprietary software (MS Windows, MS Office and Norton-Symantec Anti-virus are mentioned) . The first question I ask is why it is a matter of such extreme interest and importance for the folk at Tectonic. What is in it for them? It is hard to believe that they are motivated purely by a desire to cut government spending. There is no evidence of concern here or in other FOSS literature of anguishing about over-spending in other contexts.

On the contrary, much of what FOSS advocates espouse entails increased spending, especially on themselves. Do they want taxpayers to pay them to write software to which no one attaches sufficient value to be willing to buy it? Or, worse, software no one wants even if it is "free"? Is it not more likely that they are motivated either by self-interest (that they have some vested interest in the matter, or are supported by someone who does), or that they are motivated by quasi-religious zeal?

It is not just that they have obviously invested considerable human and material resources in addressing this issue, but that they do likewise in other contexts. Much of their effort, like that of others in the FOSS cause, is an attack on the government for not implementing FOSS policy more purposefully.

Elsewhere they criticise the companies office, CIPRO, for having a website which CIPRO says works best with Windows Explorer.

In none of the attacks I have seen is there any thorough or even rudimentary cost-benefit or impact assessment. It is taken for granted that there is no defensible case for commercial software, or that, if there is, it does no matter because FOSS should be used as a matter of principle regardless of rational evaluation.

Note that the objection to the Explorer-friendly website amounts to (a) a call for greater spending and complexity so as to make the website suitable for multiple browsers or (b) a preference for a website that is sub-optimal for the majority of visitors.

The site espouses amending copyright law so as to facilitate FOSS policy, yet FOSS software is itself, contrary to popular mythology, fully protected by copyright law, and the right not to charge for it or to reveal the source code is an essential manifestation of copyright. It cites with approval a book (*Access to knowledge in Africa, the role of copyright* ) which calls for the relaxation of copyright law so as *inter alia* to facilitate FOSS policy. The book is sponsored by the Shuttleworth Foundation and published by UCT/Juta. Stated in the book in the customary manner is that it itself is subject to copyright, not just as a matter of default law, but expressly. It also has a Creative Commons licence, which means that is cannot be disseminated except by the publisher commercially. In other words, it is a proprietary publication, a fact which is neither noted not criticised by Tectonic nor, for that matter, the Shuttleworth Foundation website.

This, in my view, is as it should be. It is similar to the basis on which we publish and disseminate publications in the Free Market Foundation. No one, that I am aware of, has a problem with copyright holders allowing reproduction and dissemination at no cost. We go one step further and allow people to reproduce our material commercially. In other words, we as defenders of strict copyright law, and the right of copyright holders to market their creations commercially, chose to forego our rights to a greater extent than the advocates of FOSS.

Needless to say, we also advocate FOSS. And we advocate CAPS. We see both and all other permutations as a matter of choice. We know of no good argument for the government to encourage either. That would be the equivalent of the government denouncing creative artists, such as painters and musicians, who derive income from their talents, and supporting only people who perform for free. It would be like a top-down policy according to which organs of state may use only event companies and performers who do not charge for their services, or that art in government buildings should only be that which is donated to it by artists who never charge for their art.

I repeat that I may be unaware of a more coherent defence of FOSS dogma. I stress only that I did not find it in my research. I also need to mention that the Shuttleworth Foundation makes it clear that it is not against copyright. What I am struggling to understand is why the government is urged to promote and use FOSS rather than to make each procurement decision on the basis of *in situ* merit. This is what the colloquium is to consider.

**Ideal government software procurement policy**
The proverbial bottom line is that I found no compelling reason why the government – any government – needs to have a pro- or anti-proprietary procurement policy. Obviously, participants in the colloquium might have information to the contrary. They are, after all, being brought together in their capacity as experts.

In the absence of reasons to the contrary, it seems to me that there is not just an absence of a case either way, but that there is no good reason for the government to have a policy on the matter at all. Being

predisposed for or against does not exhaust the feasible options. A few examples of alternatives are that it can be for FOSS when it accompanies hardware, or a sustainable contract for adequate support and training; or when it provides better security; or it is more user-friendly, or more stable; or it is inter-operable; or is the industry standard; or is provided by a BEE supplier; or creates more jobs, and so on.

If budgetary considerations should be dominant, as the FOSS movement suggests, a more comprehensive assessment than merely the direct cost of the software has to be considered. Other costs are multifarious and complex, such as the use of consultants to replace pre-installed proprietary OEM software, ensure stability and compatibility, and provide on-going support, or the cost of training staff in the use of the software.

One of the most fundamental insights of economics, and arguably the only real "law" of economics, is that all benefits have costs, which was popularised by economists during the post-Great Depression *New Deal* as "there ain't no such thing as a free lunch". Applied to FOSS, this means that there is no such thing as free software. The "F" in FOSS is a myth.

The questions to be answered before government FOSS policy can be regarded as desirable are:

1. What does FOSS cost?
2. Who pays the cost?
3. How does the real cost of FOSS compare with CAPS?

The real cost of FOSS has been alluded to throughout this Reading. It starts, most obviously, with the cost to the creators of FOSS. They use concepts – some would say patents – created at further cost by others, usually creators of CAPS. Writing new source code to perform essentially the same function as another application, such as auto-indenting these paragraphs, may be a violation of someone else's IPR. Whether or not it is, there is an economic cost involved.

There are costs if FOSS does things differently in that users have to incur the cost of learning how to use the FOSS alternative. If a multiplicity of programmes is being used, there are costs entailed in lost economies of scale in that multiple skills have to be learned. There are many FOSS alternatives, and there could be great confusion with consequential costs, especially in a developing country such as ours. These are a few dip-stick examples. Many more are mentioned in the literature. There are issues regarding support, stability, security, upgrades, innovation, usability and the like.

I would add subtler costs. People seem to like the option and benefits of walking into a shop and getting expert advice on alternatives. This is true of everything people buy. Even government officials have to "go shopping", or evaluate tenders. Since there is no obvious commercial interest in marketing FOSS it is not normally stocked in shops and is not offered to government when it calls for tenders. Since the policy envisages avoiding normal procurement procedures, which is necessary if FOSS is to be an option, it means government will incur the cost of not being offered the benefits of commercial creativity flowing from the profit motive.

Where FOSS is part of a larger package, such as hardware or consulting services, the real cost is concealed within the full contract price.

As many or most organs of state have found, there are considerable costs entailed in using unfamiliar software, or software that is incompatible with other relevant software, such as the software of other agencies, the media and the private sector. Industry standard SAP software is a striking example. I have been told by the IT managers of various departments that their needs are inconsistent with FOSS, or that using FOSS would be a considerable handicap. Many government needs are served by dedicated proprietary software commissioned at great and carefully considered cost by government. . It is easy to think of examples, such as the population register. Does the FOSS policy mean that such software has to be replaced by conspicuously less suitable FOSS products? Or must the government surrender its software to the creative Commons?

Needless to say most of these considerations have been thought of or revealed by trial and error – note, error.

Clearly, FOSS, like anything else of value, comes at a considerable cost, and the question boils down to which software offers the best trade-off between costs and benefits when all costs and benefits are responsibly assessed.

Another obvious, though seldom mentioned, problem is that FOSS is not a single option. There are, for most purposes, few proprietary options. The spontaneous preference of most computer users is to use software that is commonly used by most people with whom they interact at work and at home. There seems to be a pattern of convergence towards very few options being in general usage. This has obvious advantages, such as the ease with which people can be found who know how to use installed software, and the ability of computer literate people to sell their full- or part-time services. These very considerable factors are hard to quantify in the abstract or in general. Sophisticated research could produce some idea of what would be best in general, but even if that were achieved, it would be no indication of what would be appropriate in a given case. Furthermore, what might be appropriate today may change tomorrow, especially in regard to computers. One of the objections to a dogmatic policy is that it is anti-progress and innovation. It presumes to know the future in addition to everything of relevance in the present.

**Conclusions**
This is input to a colloquium, a stimulus to informed discourse on the basis of common assumptions, rather than a set of findings and recommendations based on them. These "conclusions" should be thought of as provisional impressions with me as author looking forward to substantial refinement during the colloquium.

**Follow the private sector**
One of the most striking and instructive aspects of the matter is that private people and enterprises have no pre-conceived prejudice. Their decisions are based, as one researcher put it, on their bottom line, not their ideological line – or a long line of ideologically motivated activists. Research by Josh Lerner (*The Secret Of Commingled Code*) found that most non-government users use proprietary software (whether commercial, freeware, shareware or a combination), whereas governments are inclined to use or plan to use FOSS. Since the private sector and private individuals are using their own money, and are subject to competition ("market forces"), they are more likely to approach an optimal balance between real costs and benefits than governments. Governments are better advised to learn from the market than activists and lobbyists. In short, our government should use the same mix that people in the private sector use for similar purposes. If private companies use SAP, Oracle, Windows, Symantec and Unix fairly consistently, the government should do likewise (for similar purposes).

The South African magazine *Computer Business,* in an article on Oracle's position on OSS, reports that OSS (as opposed to FOSS) uptake has been very slow and remains minimal (http://cbr.co.za/article.aspx?pklarticleid=4869). It is primarily confined to individual users and scarcely exists at the corporate level.

Our government has a flexible policy, which has undergone various refinements, but there is not sign yet of its willing to swing back from the extreme position it has adopted to a seemingly more balanced position closer to what characterises the business community.

**Beware of vested interests**
The government should realise that it is not dealing with saints on one side and sinners on the other, but that both sides are motivated by the promotion of their own interests. Ideological interests, to the extent that FOSS is as ideological as it seems, are also interests. Ideological interests are often, if not usually, more passionate and ultimately more powerful than commercial interests, and more likely to subvert the government. Accordingly, the government should regard both sides as advancing their own agendas and interests. It should ensure that it is not disproportionately influenced by either and weigh each procurement decision on its objective in situ merits. To do that, it should devolve procurement decisions to the appropriate level with the instruction that choices have be made according to objective bottom line criteria which, as in all procurement, should be known and fair to all concerned in advance.

**Use Cost-Benefit Analysis (CBA) and Regulatory Impact Assessment (RIA)**
There is really only one reliable way to make procurement decisions, and software is no exception, which is to undertake an objective CBA/RIA. For these to be appropriate, they have to satisfy established criteria, such as taking into account all costs and benefits, and all risk or unintended consequences that can reasonably be foreseen. The private sector is already doing this at great cost and at high levels of sophistication. The government should start by assuming that prevailing private preferences are superior, and place a heavy burden of proof on anyone who suggests otherwise.

**Consider all costs**
Josh Lerner (*The Secret of Commingled Code*) asks why many governments promote FOSS at all (from minimal usage to neutrality in most cases). "If a majority of customers and developers use a mixed environment, why do governments adopt policies that favour open source? Reasons vary, but chief among them is the perception that open source is more cost-effective for them as purchasers of IT and a better alternative for economic development. And many well-intentioned policymakers believe adopting preferential policies is the best way to help open source flourish. But none of our findings suggest that this approach will lead to success. Instead, the data led us to the intriguing finding that the success of open source relies heavily on the success of proprietary."

Things may change, indeed seem to be changing, in favour of FOSS, and government should ensure that it keeps up with developments, but it should not see where a small crowd is running and get ahead and say "follow me". It should be more cognisant of broader realities. If the growth of FOSS continues, the case for actively promoting FOSS will be stronger. Meanwhile, comprehensive costs, all things considered, seem likely to exceed benefits in the short term. There does not appear to be any case for haste. The government could find itself out on a cyber limb if things change and they have shown immense propensity to do so in the ITC field. Very little has been predictable, not even by those who were instrumental to momentous developments.

Those who developed hypertext links had no idea that they would become applications beyond facilitating navigation with and between scholarly documents. Bill Gates and his young nerdy friends had no idea that Windows would become the operating system in tens of millions of computers, and he would become one of the wealthiest people of all time. Mark Zuckerberg had no idea he was about to bring about one of the most momentous social developments of all time when he wrote the proprietary code for FaceBook. The creators of Google, multimedia players and antivirus software had no idea what phenomena they were unleashing.

ITC may be an area of life and business that demands humility, flexibility and dynamism. If so, these should characterise government's software procurement policy. A question for the colloquium is whether the existing FOSS policy does so.

**Understand and observe the Constitution**
It is not my task to address constitutional issues, but it is worth adding that whatever the government does has to pass constitutional muster. It must be fair and reasonable, preceded by good faith consultation, satisfy the rule of law (objective, not retroactive, certain, transparent, etc), and promote efficiency in government and the country as a whole.