



Open Source: Software as a commodity



by John McCreesh

Some of the biggest names in IT have embraced community developed “open source” software, the free software that powers much of the internet. Could it be the answer corporate IT is looking for?

IT DOESN'T MATTER

Five years ago this month, CIOs around the world were feeling particularly unloved, as their colleagues on the board gleefully waved a copy of the Harvard Business Review under their noses. An article by Nicholas Carr with the provocative title “IT Doesn’t Matter”¹ posed some uncomfortable questions about the real business benefits of expenditure on IT.

Carr argued that IT systems are now all-pervasive in business: every corporation has a web site; all the basic business processes are computerised; every employee has email, internet access, office software etc. In Carr’s words, IT systems: “...are becoming costs of doing business that must be paid by all, but provide distinction to none.”

Carr admits some companies may gain a temporary competitive advantage from a specialised IT system, but IT is so easy to copy that this will not last. In economists’ terms, IT is now a commodity. Just like buying office supplies, buyers should go into the open market and buy IT where it’s cheapest. According to John Suffolk, UK Government CIO, adopting this principle could save

the UK public sector billions of pounds². Within this approach, what could be more attractive than the offer of free software?

THE EMERGENCE OF FREE/OPEN SOURCE SOFTWARE

During the 1980s, software developers had become increasingly frustrated by the poor quality of the software tools they were using themselves. With the growth of the internet, groups of developers began to work in their spare time to produce their own freely-shared or “open source” alternatives. Any competent developer was encouraged to inspect the programs (or “source code”), fix bugs, or add features. Within hours, new versions could be distributed worldwide via the internet and be in use by hundreds of their peers. Every program change was open to scrutiny, discussion, and improvement by the community via the internet. Contributors gained praise and endorsement from their peers.

This “open source” software development process proved itself capable of producing high-quality programs quickly and cheaply. Bodies such as the Free Software Foundation (founded in 1985) and the Open

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Source Initiative (1988) actively promoted both the rapidly-growing volume of software products and the methodology behind them. Software licences like the General Public Licence (GPL – 1989³) were produced to ensure that the evolving source code remained available for all to use – Free/Open Source Software (FOSS).

OPEN SOURCE TODAY

Two decades on, FOSS has developed into a huge international activity, producing software used by individuals, companies, and governments. Much of the internet is built on open source products - for example, more websites use the open source Apache product than any other web server⁴ (RBS has used open-source frameworks in the development of web-based applications). On the desktop, most common commercial software products have an open source equivalent – as illustrated in Table 1

Many of the ways of working pioneered by open source developers are now accepted as best practice by the commercial IT industry. Few would argue with building software in small components to enable re-use (rather than re-invention), or using peer-group code reviews to drive up software quality. Techniques such as Accelerated Solutions Delivery (ASD) are based on the principle of producing frequent small releases of software, with immediate feedback from users.

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COMMERCIAL SOFTWARE AND OPEN SOURCE PRODUCTS

Product	Commercial Software	Open Source Software
Operating system	Microsoft Windows	GNU/Linux
Office Suite	Microsoft Office	OpenOffice.org
Web Browser	Internet Explorer	Firefox
Email client	Outlook	Evolution

Table 1

So, is free open source software the answer to Carr's challenge? An increasing number of organisations see it as at least part of the answer, with particular enthusiasm shown by governments and public administrations, where the culture is traditionally open to co-operative working.

In financial services, Banco do Brasil, the largest financial institution in Brazil, is in the final stages of a 5 year transition, replacing Microsoft Office with the open source OpenOffice.org, saving over \$6m in licence fees⁵. Banco do Brasil is state owned, and the Brazilian government has a strong commitment to open source as a way of building an indigenous software industry, eliminating the digital divide, and cutting foreign currency expenditure.

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THREAT OR OPPORTUNITY?

As might be expected, technology companies are aware of the threats and opportunities provided by open source. Google's highly-profitable business is built on a platform of open source software⁶; IBM and Oracle both re-badge open source software like the Apache web server and Linux in their own products; IBM and Sun Microsystems re-badge OpenOffice.org as Lotus Symphony and StarOffice respectively.

Other vendors whose businesses rely primarily on selling commodity software see open source more as a direct threat, and react accordingly by trying to secure their customer base. No expense is spared to make it as easy as possible for companies to continue to buy software from their traditional suppliers. Microsoft, the biggest vendor of commodity software, spent \$11.5bn on marketing in 2007 - over 20% of revenue⁷ (it is not unusual for software companies to spend far more on marketing than R&D).

Vendors' marketing teams also work closely with the research companies such as Gartner who are used by blue chip companies in their IT decision-making processes. The resulting benchmarks have been lambasted by John Suffolk for inflating costs in the UK public sector⁸.

If Carr is correct, paying a supplier £100 and then allowing them to spend over £20 of that revenue to sell their product to you may not be sustainable – sheer economics could eventually force even the most reluctant IT department to find more cost-effective ways of sourcing commodity software.

It's not just the obvious examples like desktop and server software – businesses will have to justify why even core systems should not be treated as commodities. For example, as banks are all subject to the same strict regulatory regimes and have to be able to communicate with each other, then it's arguable that their business processes will tend to converge. If so, it is hard to make the case that basic processing systems somehow confer a strategic advantage.

There is some recognition of this in the marketplace: JP Morgan Chase's core development team open sourced its Advanced Message Queuing Protocol⁹ a few years ago. It has since received backing from rivals including Credit Suisse, Deutsche Börse Systems and Goldman Sachs. However, competitive habits die hard, and it is likely to be some time yet before direct competitors in financial services jointly develop a new banking platform on an open source basis.

LIMITATIONS OF OPEN SOURCE

There are other factors which make commercial companies reluctant to adopt open source. Traditional software vendors usually offer some level of protection from possible patent infringement or other intellectual property claims. Their legal teams may be prepared to negotiate special licence terms if required. They may offer service contracts, with SLAs, for responding to issues with the software. They may certify third parties to supply the software, or offer support or training services. Open source projects can offer none of these.

It should also be noted that for commercial users, using open source software will not be completely cost free. Google actively encourages new developers into open



source through funding an annual “Summer of Code” programme. IBM, Sun, and Oracle all put money back into the open source projects they use – not as an altruistic gesture, but because it gives them a say in the future development of the software and ensures its survival.

THE FUTURE FOR OPEN SOURCE

Indeed, this is one possible model for the future commercial adoption of open source. Companies are already finding themselves using open source software at arms’ length, supplied by their traditional IT suppliers – for example buying Linux through IBM, Novell, or Sun, and thereby indirectly supporting the open source project. Buying open source through traditional software companies also answers many of the worries over patent infringement, support, and third party certification. Proponents believe this gives the best of both worlds – gaining access to high quality software without inflated license fees, but with the comfort blanket of dealing with an established vendor.

So five years after “IT Doesn’t Matter”, some CIOs are finding open source software is at least part of the solution to the challenge of software becoming a commodity. The emergence of business models which allow commercial companies to engage more comfortably with open-source developers means this trend is likely to continue, with CIOs adopting a “pick and mix” approach from both open-source and proprietary software to best meet business demands.

- 1 Nicholas G Carr, *IT Doesn’t Matter*, Harvard Business Review, May 2003. Carr subsequently elaborated on his ideas in *Does IT Matter? Information Technology and the Corrosion of Competitive Advantage*, Harvard Business School Press, April 2004
- 2 Tony Collins, “PC deal could save public sector billions” Computer Weekly, April 2008
- 3 GNU General Public Licence version 1 1989
<http://www.gnu.org/licenses/old-licenses/gpl-1.0.txt>
- 4 Market Share for Top Servers across All Domains, Netcraft news, February 2008
http://news.netcraft.com/archives/2008/02/06/february_2008_web_server_survey.html
- 5 BB troca Office por software livre até o final de, March 2006
<http://tecnologia.terra.com.br/interna/0,,O1906852-E14801,00.html>
- 6 Clark, Chris, Google – just how do they do that?, Perspectives, Autumn 2007
http://www.manufacturing.rbsgrp.net/GTsad/Reference_Papers/Periodical_back_issues.asp
- 7 “FAQ: Forecasting the Cost of Sales”
http://www.embeddedcomponents.com/FAQ/FAQ_forecasting_the_cost_of_sales.php <http://www.embeddedcomponents.com/FAQ/FAQ_forecasting_the_cost_of_sales.php>
- 8 Tony Collins, *op cit*
- 9 Advanced Message Queuing Protocol
<http://jira.amqp.org/confluence/display/AMQP/Advanced+Message+Queuing+Protocol> <<http://jira.amqp.org/confluence/display/AMQP/Advanced+Message+Queuing+Protocol>>