

The Coming Linux Tsunami – An Open Source Revolution

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Ladies and Gentlemen

11th September was a cataclysmic event in world history

The start of war by America and UK on Afghanistan and the subsequent confirmed cases of Anthrax in the US have severely dented business and consumer confidence. After the assassination of Mr Zeevi, a member of the Israeli cabinet today, things are looking very uncertain for the Middle East peace process. Security is suddenly a very big issue and so is cost cutting in the brutal new competitive environment. Profitable trading is essential to survival and Linux has a big part to play in this equation.

Cisco's Chairman John Chambers recently likened the change in the markets to a 100-year flood. Our view of the future is that Linux as part of the Open Source revolution is likely to more closely resemble a tidal wave - a 'Tsunami'.

War is a catalyst and accelerator of social and business change. The recent dramatic change in market capitalisation of the giant British Airways versus the flexible, low cost, digitised budget operators like Ryanair might have otherwise taken a few years, but 11th September has made it happen now. Ryanair's current capitalisation, at over £2.2 billion, exceeds British Airways' at £1.8 billion. This is because Ryan Air focuses on operational cost reduction through fast turnaround times and eEnabling the booking, pricing and customer service processes.

Swissair, that famous name synonymous with reliability and quality, is bankrupt. Interestingly it is Crossair, its own low cost subsidiary that will now end up cherry-picking the profitable routes. I find this staggering and the implications are significant. By the way, the Ryanair web site is running Apache on Red Hat Linux and British Airways is running Netscape Enterprise on Sun Solaris. And according to Netcraft's latest survey of over 32 Million sites, 58% of top web servers across all domains are running Apache, the well known Open Source application. In comparison, Microsoft IIS is now under half of that market share at 26%.

The dramatic success of these low-cost eBusiness operators versus the dinosaurs of the corporate world is an urgent warning to multi-nationals, banks and global insurance companies that unless they radically change and take out cost from their businesses, then they could easily suffer the same fate as the airlines via tectonic shifts in customer preference.

The impact of September 11th on the insurance market in particular has produced winners and losers. Premiums are up and insurance capacity is down. The capital base has been depleted in some cases. Whilst the combined ratio is going up as a result of an increased loss ratio; the only way to survive is by attacking the expense ratio, which is all about cutting costs – not just at the front office people level but also at the back office IT level.

Open Source brought success to mi2g

mi2g progressed into security issues in a serious way in mid 1997 when our vertical communities on the web, called lounges, got hacked by a disgruntled anti-Microsoft group. Our lawlounge was running a debate on Bill Gates. In those days, lawlounge ran off Microsoft IIS.

At any rate some clever clogs got upset by positive comments on Mr Gates made on the bulletin board of the site and they ended up hacking into the system. The more we tried to protect the IIS application, the more they came back and brought it down over and over again. This led to the migration to Linux on Apache at mi2g in late 1997.

Since then we have become more adept at understanding Linux as time has gone by and our lounges have migrated to Open Source solutions. Over the last four years, the lounges have attracted over 9 million visitors and have demonstrated high reliability during that period. We became evangelists of Linux overnight in mid-1998 and have been promoting Open Source, where it succeeds as best of breed, since then.

By the way, we have saved a lot of money in shifting to LAMP - Linux, Apache, MySQL and PHP - which is a viable and free replacement to Microsoft's Windows, IIS, SQL and ASP and this free solution could also replace Solaris, iPlanet and Oracle.

Security through Linux

From this initial interest in security, mi2g worked closely with Lloyd's of London brokers and syndicates in developing eRisk Management insurance products. In January 1999, we published a briefing for the insurance market entitled, "Cyber warfare: The threat to business, government and financial markets". Of course there was some scepticism towards what we predicted and within two months, the Serbia-NATO conflict validated the arguments. Over 100 businesses in NATO member countries were hacked online by the Serbia sympathetic brigade. Along came a misdirected NATO bomb on the Chinese embassy in Belgrade and all hell broke loose. The White House web site was attacked and defaced by the "Hong Kong Danger Duo" and "Global Hell" despite an auto-refresh system.

This, in retrospect, was a turning point for mi2g and it catapulted us into the international arena of working with large financial institutions in electronic attack mitigation systems, mission critical applications and risk management solutions. Of course, many of the honey pots and hardened firewall kernels that we install are Linux based.

We have developed mi2g's success around the provision of bespoke security architecture for a range of clients in financial services, here in London, Europe and North America, where we now generate over 70% of our turnover.

Today, mi2g has grown into an eBusiness provider and one of our partners is Fairfax Financial Holdings, a Toronto based global insurer with assets of over C\$31 Billion. We are establishing a joint venture called MFX, which will deliver eBusiness solutions both for their companies and for other companies in financial services. The work

we're doing for them ranges from CRM through to highly secure portals, intranets, extranets and managed security services.

At the London Stock Exchange seminar on Monday this week, the Chubb Chairman and CEO, Dean O'Hare questioned, "Could the Internet be the next terrorism target? The internet has become a vast world trade centre of its own – a virtual building in which 400 million tenants trade Billions of Dollars of goods each and every day". This was qualified by Ed Gibson of the FBI.

Post 11th September, a managed security strategy is now a mandatory issue for large companies and is an integral part of their Risk management strategy. You'll not be surprised that Open Source is intended to be a cornerstone of the network and architecture for MFX.

Databases shift to Open Source

Structured Query Language (SQL) is the foundation for a growing range of open source relational databases. It was developed by IBM for use on mainframes and is used by Oracle and IBM's DB2 relational database.

SQL is used to interrogate and process data in a relational database. Fully SQL-compliant open source databases are now entering the mainstream. The three leading choices, still evolving, are MySQL, PostgreSQL and Interbase. They are available for free under the GNU General Public Licence (GPL).

Yahoo Finance runs MySQL. The US space agency NASA has replaced Oracle with MySQL for the NASA Acquisition Internet Service (NAIS). This should alarm proprietary database suppliers such as Oracle. The NAIS project leader reports an increase in performance and reliability.

A well-known example is a large life insurance company - no names mentioned – that has developed a brilliant front-end using proprietary software. However this company has ten different products online and they all have their own back-end proprietary databases as well as their own middleware engines. This suggests a very fragmented, quick and dirty approach towards getting a proof of concept.

In their case, the cost of each middleware engine with its database is about \$3 Million when it comes to paying for the software license, bespoking it and deploying it on servers. Ten times \$3 million is \$30 Million. However, if a more intelligent approach were to be taken at this insurance company it would mean that there could be a unified middleware engine built for about \$5 to \$6 Million and the cost of implementing a unified Open Source datamart would be another \$7 to \$9 Million. This suggests that unifying the ten disparate eCommerce projects could save as much as \$15 Million.

Linus Torvalds and Jerry Skaggs

The revolutionary open source Linux operating system developed by Linus Torvalds at the Helsinki University 10 years ago now represents one of the fastest growing threats to Microsoft Windows and Sun Solaris. Jerry Skaggs, Head of Information Services at UPS, says "We see a big future for Linux. The next step is to use Linux to simplify

consolidation onto fewer mainframe systems. This would drop maintenance, support and staffing costs and reduce total cost of ownership.”

The challenge for Open Source is two fold: First, for widespread use in financial services operating systems, there has to be a High Availability solution. We’re relying on our friends around this table to provide this. Second, convincing CEOs that Open Source should be on their agenda of strategic solutions to win long-term competitive advantage. This is the space in which mi2g operates.

10 Reasons for large businesses to deploy enterprise wide Open Source

1. **To reduce business risk using LAMP.** An open source strategy reduces commercial dependency on a closed source single supplier who may adversely affect the bottom line with new license fee demands. Linux, Apache, MySQL and PHP (LAMP) can be a replacement for proprietary software.
2. **Managing eRisk.** Hackers mainly target servers. As we move to permanently online connections, security of server data is a key issue and properly configured Linux is a more secure solution. Open source allows patches to be developed in-house or through a wider community.
3. **To save license fee costs.** Also there has been a proven drop in total cost of ownership including maintenance, support and staffing costs via Open Source.
4. **Reliability** - The Linux operating system is highly reliable and stable
5. **Range of applications** from big players – IBM, Oracle, BEA Systems, SAP and Siebel - are now available on Linux
6. **Distributed High Performance Computing** for Data mining and Customer Profiling can be deployed on Linux virtual farms on a mainframe or on PCs
7. **Biodiversity** - When the enterprise wide commitment is to only one O/S there is huge exposure to a specific security threat. Witness “I love you”, Nimda, Code Red etc. mi2g recommends differentiating the server O/S from the client.
8. **Recruitment** - More and more universities are deploying Linux as opposed to proprietary operating systems; so the new generation of employee hires are going to be Linux literate.
9. **Listen** - Demonstrate to your staff that the management does actually listen to what their smart technical people have been telling them for years!
10. **Be ahead of the game** - Gain competitive advantage and improve shareholder value.

For now, I hope that we have provided you with some useful insights into what businesses are looking for in Open Source solutions. We will be happy to discuss how businesses are likely to react to your enterprise wide Open Source proposals.