THE QUALITY ASSURANCE FOR THE OPEN SOURCE E-BUSINESS SOLUTIONS

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Conversion of ordinary business into e-business has forced organizations to be redesigned and reshaped Today's business owners are more dependent on applications than ever before. Application software automates key business processes - from payments, funds transfers, and order placement and fulfillment to customer service inquiries. It is challenging and costly to integrate systems between business units or trading partners and to orchestrate business operations between entities. Open Source Software is for many small and medium companies, an opportunity to develop efficient e-Business IT systems. In this paper we try to survey the advantages and risks of this solution and the way to achieve an acceptable level for the quality of the IT free solutions by using the IT system audit process.

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Introduction

Today's business owners are more dependent on applications than ever before. Application software automates key business processes - from payments, funds transfers, and order placement and fulfillment to customer service inquiries. Because application downtime and performance problems can have serious business impacts, line-of-business owners are demanding that IT deliver greater application service levels and faster problem resolution when problems do occur. Application owners are responsible for making sure that applications do everything line-of-business owners need. Business requirements for applications typically include availability, performance and data accuracy.

Beyond e-Business, enterprise borders will change, or even disappear. Leading organizations will provide open access to infrastructure services, data and applications. Partners, suppliers, customers and, in some cases, even the competition, or "coopetition", will be able to peer into corporate nervous system' firm, including traditional systems— not just the ones with an "e" in front of them.

Moving to next generation application development solutions help organizations reduce or eliminate application backlog while aligning business and IT units and reducing the strain on their IT resources.

Although technology continues to advance, business innovation and application needs far outpace advances in technology. In fact, in the past few years, the gap between business and technology has lead to enormous application backlogs, increased dependence on time and resources and outsourcing.

Enterprise Software faces a set of challenges in meeting the needs of today's enterprises. Some of the challenges have always existed, some are very new. They include[598]:

- Most existing technology assets are not modular, reusable or easy to integrate.
- Many useful applications of business technology are not available to an increasingly mobile work force.
- It is challenging and costly to integrate systems between business units or trading partners and to orchestrate business operations between entities.
- Changes in implementation technologies often force very costly migrations that offer no specific business benefit other than moving from one technology stack to another.
- Business software is implemented with technologies that are too fine grained in control for the level of granularity needed to implement business solutions.

This causes long and unpredictable release cycles and expensive and inflexible application maintenance.

- Companies are forced to build and manage their own technology platform that sits between the software they license and the software they build
- Software development as a whole has suffered from an inability to respond to requirements changes without significant budgetary impact because the implementation and deployment strategy is brittle.

Evolving business needs and technology innovations are driving continued changes in every aspect of the software delivery industry as a whole. We think that are four areas of innovation strategic areas of IT innovation: methodology, architecture, interface, and implementation.

598 Skyway Software – NextGen Whitepaper, Next Generation Application Development, The Rise of the Business Application Platform, 2006,p.6.

Methodologies are becoming more iterative, software architectures are becoming more modular, software interfaces are becoming richer and more flexible, and software implementation is becoming more adaptive and productive.

Open Source Software – advantages and risks

Not long ago, open source software in the enterprise was a contentious topic. Conference panels and industry experts questioned the integrity of mixing open source with commercial and proprietary code. Would it unlock a Pandora's box of developer pain and sub-par software? Last year, a Forrester study showed 75% of large enterprises surveyed were either using or planning to use open source software. That was up from 60% the year before. In a study from InfoWorld magazine, 87% of respondents said their companies were already using open source in several projects—even for mission-critical applications. In 2007, The451 Group confirmed it: open source software is gaining worldwide adoption in commercial software companies. Organizations' need for greater agility and flexibility, and more control over their software costs, coupled with their fear of technology obsolescence, is driving them to loosen the ties to individual software vendors and traditional software licensing models.

Open source has proven that it can often more efficiently deliver high-quality software, throwing down the gauntlet to old models of software development and maintenance. As a result, use of OSS has now spread from infrastructure and middleware to business-critical applications, including business intelligence, enterprise content management and customer relationship management. Against this backdrop, the third Annual Actuate Open Source Survey[599] confirms that Europe in particular is forging ahead in widespread adoption of OSS, having recognized early on the lower cost of ownership and the flexibility it offers for future application expansion and development.

An in depth exploration of organizations' use of and attitudes towards open source, across four important territories – North America, the UK, Germany and now France - the report confirms once and for all that OSS is no flash in the pan, but has been broadly recognized and embraced as offering organizations sustained competitive advantage.

The survey findings support Gartner's projections that, by 2012, at least 80% of commercial software solutions will include substantive open source components[600].

The following figure shows Europe forges ahead of North America in its preference for open source platforms, particularly in the deployment of new applications, and replacement of outdated systems, with France and Germany at the forefront.

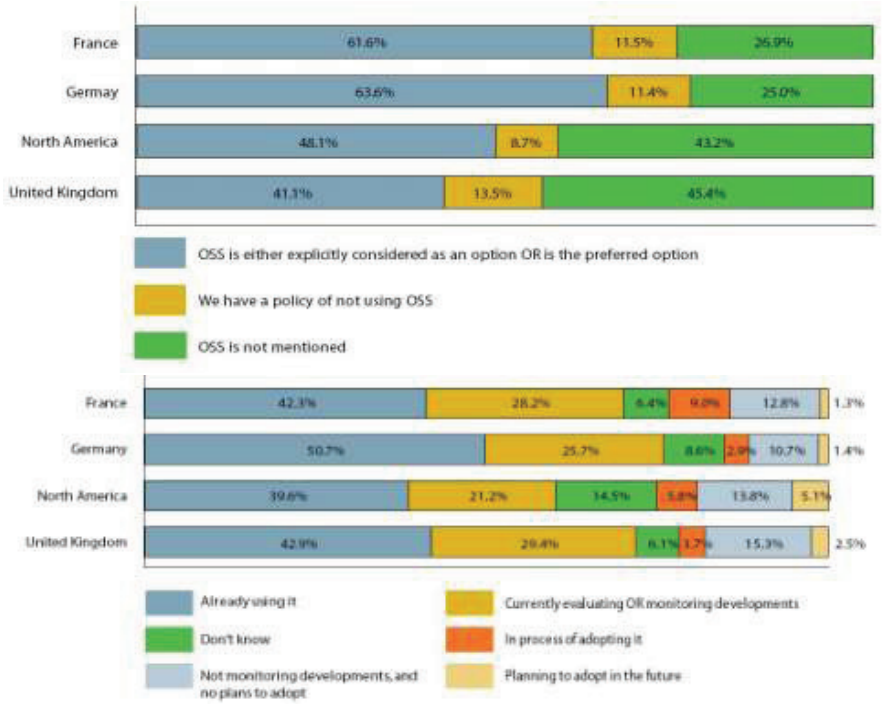

Fig.1. (Source: ACTUATE:ANNUALOPENSOURCESURVEY, 2008, Conducted on behalf of Actuate by Survey Interactiv,p.4)

599 Actuate: Annual Opensource Survey, 2008, Conducted on behalf of Actuate by Survey Interactive

600 Gartner Highlights Key Predictions for IT Organizations and Users in 2008 and Beyond', January 31, 2008.http://www.gartner.com/it/page.jsp?id=593207

However, just because open source is ubiquitous doesn't mean it's risk-free. Many businesses widely use open source in commercial projects, but are blind to what's at stake when they distribute software that includes open source code.
Some of the biggest names in software development and manufacturing use open source software in their projects—Microsoft, Toshiba, even the U.S. Navy. **There are many good reasons to do so such as:**
-open source languages decrease the expense of software development considerably;
-the ever-improving, extensible nature of open source languages appeals to developers;
They know the code is constantly adapting, evolving and stabilizing.
-another advantage of open source is being able to tap into the global open source community when things go sour.
When problems arise— as they often do—enthusiastic members of the open source community see your headache as a riveting weekend project. They love the code; they fix the code; they are the code.
Despite all the benefits, any development team using open source for enterprise software development projects knows it's not perfect[601]:
-Programmers in their basements can't fix your problem fast enough. The community of open source coders isn't on the clock, or your company's payroll. That means free 24/7 support doesn't exist for open source projects. When you are on a tight development schedule, a lack of formal support or training can jeopardize a development project.
-As a commercial software vendor, you must stand behind your product. That gets tricky if your software uses open source, because you don't have complete control over the entire code base. Yet, your company becomes accountable for the total quality of your product.
-If the open source software you're using is not top quality, it can cause a ripple effect that destabilizes your product and reflects poorly on your business.
- Most companies don't have policies in place to address administrative complexities that go along with using open source languages—like how to license your product. InfoWorld's[602] survey indicates that only 41% of respondents had a policy in place for deploying and managing open source in their companies.
The confusion begins with terminology. When developers call software "free," they mean users are free to run it, change it and redistribute copies with or without changes. As Richard Stallman—author of the first GPL open-source license— puts it, when you think of open source languages, "think of 'free speech,' not 'free beer[603].'"
Sounds like free software, but it's not. Open source code must be licensed. Although open-source licensing terms may have nothing to do with money, they will put restrictions on how you can distribute your product.
The theory behind open-source licensing is a good one. It ensures that open source languages are not exploited by organizations that use them in their projects, but otherwise would not give anything back to the community.
Today, nearly every sort of business software product, from e-mail servers to ERP tools to voice over IP, are available as open source. But many companies begin using open source on the Web side of their business, where a number of industrial-strength, long-used applications exist. These tools are commonly referred to as the LAMP stack (standing for Linux, Apache, MySQL and PHP—or Perl or Python, depending on the situation.) Linux is a well-regarded, widely used Unix-like operating system. Apache is the most popular Web server in use today. MySQL is a database product that competes favorably with expensive commercial tools. And PHP, Perl and Python are programming or scripting languages commonly used for open-source Web development. Java-based open-source websites also often use the JBoss Java application server. Once you become familiar with using open-source tools and the differences—and similarities—between them and commercial products, you'll likely find other opportunities. You may also be surprised to find that your developers have been using open source under the radar for some time.

The IT System Quality Ensuring through the Audit Process
In the Knowledge Society, the organizations use Information Technology to process their information in order to accomplish better their mission. The audit process development plays a critical role to assure a high level of information system quality. The organizations want to carry out audit processes because they need to assure a high level of the information systems, to know what and where are their vulnerabilities, to develop security policies and risk management plans and to implement measures with positive effects on their information systems. The audit results must correct some aspects concerning the information systems security.
Detection of the security vulnerabilities in an information system based on web application is a critical activity to give the confidence in that system and, also, to assure a high-level quality of the system to prevent the system crashes and sensitive data theft. If the vulnerabilities are exploited by external users, this thing may cause big loses for all partners that use the information system.

601 http://www.cio.com/article/40364/ABC_An_Introduction_to_Open_Source?page=1.
602Survey: Open source is entering the enterprise mainstream, may 30, 2008 (http://www.infoworld.com/t/applications/survey-open-source-entering-enterprise-mainstream-943).
603 Stallman, Richard. "Why "Open Source" misses the point of Free Software" (http://www.gnu.org/philosophy/open-source-misses-the-point.html).

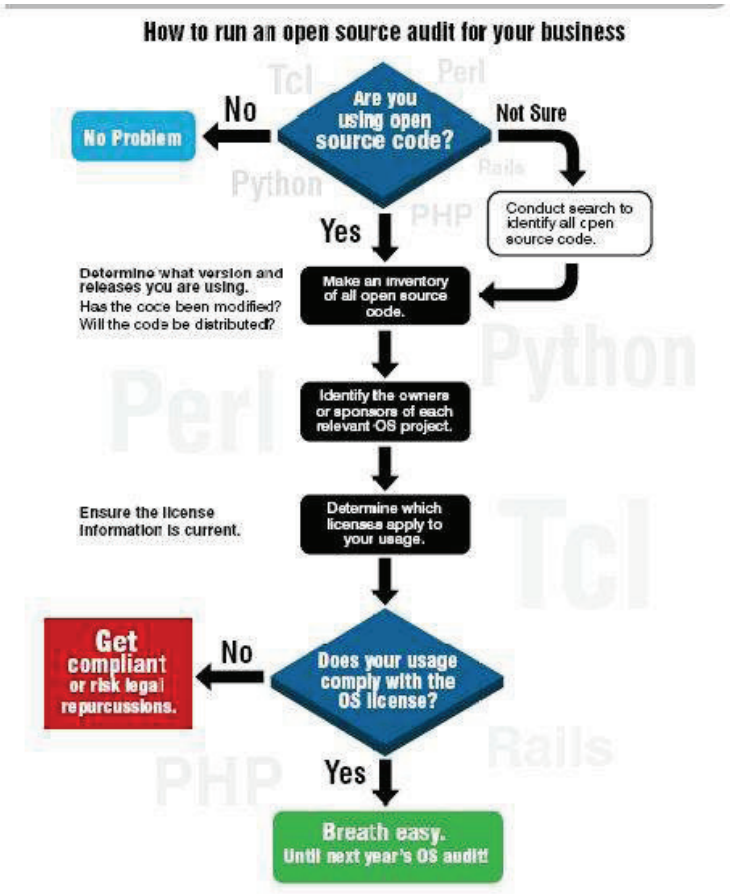

Fig.2. (Source: License to Code: Indemnifying Your Business Against Open Source Licensing Liabilities, white paper, January 2008, p.7)

Typically, an audit (fig.2) follows these steps[604]:

1. Evaluate the scope and nature of how your organization uses open source software. Where and how are you using it? Are you using it internally, or will it be distributed? Is it modified or unmodified? Has it interacted with other code—proprietary or open source?
2. Make a detailed inventory of which open source languages you're using.
3. Research and learn about the licenses for all the open source projects your organization is using. Make a library of the names of all the licenses, and get copies of all these licenses.

Conclusions

Enterprise Software faces a set of challenges in meeting the needs of today's enterprises. Some of the challenges have always existed, some are very new.

Evolving business needs and technology innovations are driving continued changes in every aspect of the software delivery industry as a whole.

Methodologies are becoming more iterative, software architectures are becoming more modular, software interfaces are becoming richer and more flexible, and software implementation is becoming more adaptive and productive.

In these trends, open-source software fits very well with its advantages and disadvantages. Developing of an e-Business IT System based on the open source software is a costless recommended solution in the actual context of the global financial crises. To be sure about the quality level of the solutions we must understand and use the operational procedures to run the IT System audit for our business.

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604 License to Code: Indemnifying Your Business Against Open Source Licensing Liabilities, white paper, January 2008 (http://www.infoworld.com/d/developer-world/best-open-source-software-awards-2008-785).