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Open Source Paves The Way For The Next Generation Of Enterprise IT

A European Survey Finds That Open Source Becomes The Hidden Backbone Of The Software Industry, And Leads To A Paradigm Change In Enterprise IT

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Executive Summary

In October 2008, Bull commissioned Forrester Consulting to evaluate the upcoming paradigm change of open source software enterprise adoption. In conducting in-depth interviews with 132 senior business and IT executives from large companies that are using open source products, Forrester found that these companies are embracing a fundamentally different understanding of software.

Today's Open Source Adoption In Enterprise IT

Forrester's study does not only observe the current enterprise adoption of open source, but also goes beyond and analyzes further business and industry trends. The survey unveils the impact of the open source paradigm on enterprise IT:

1. **Open source is moving up the technology stack.** While the usage of open source in the middleware software category is widely spread, the adoption of open source office productivity tools and business applications is constantly growing.

2. **Industry sectors are adopting open source software (OSS) at different speeds and focuses.** In our survey, the manufacturing sector is among the strongest adopters of open source infrastructure, while the financial services sector is faster at adopting OSS in higher levels of business applications.

3. **Open source is now strongly used to develop mission-critical apps, services, or products.** Again, this is somewhat counterintuitive to the prevailing wisdom that says that OSS is fine in development or for departmental applications. The survey respondents are using OSS to develop the systems that run their business.

4. **OSS isn't just cheap — it's good and cheap.** Only a minority of respondents said that OSS hasn't met their quality expectations. A vast majority (i.e., 92%) said that their quality expectations have been met or even exceeded. The satisfaction regarding cost was on a similar level at 87%.

5. **Cost is the primary adoption driver, but other factors are important, too: independence, flexibility, and innovation.** The majority (i.e., 56%) of all enterprise users name reduction in overall software cost as the primary motivation to use open source. But the total motivation is far beyond just the price point. Independence, not to be locked to a single vendor, is very important for 43% of all users.

6. **The principles of open source are transferred to corporate best practices.** Deploying open source is always the first step. However, the next evolutionary step is to adopt the open source engagement model within your own project organization, with IT suppliers, and even community peers.

Beyond many already existing white papers and surveys, Forrester wanted to investigate in depth the total impact of the open source idea to larger IT organizations. Therefore, we focused our analysis exclusively on enterprises already using open source, at least at a minimal level, which represent around 15% to 24% of enterprises in Europe and North America today.

Tomorrow's Impact On Enterprise IT

Forrester's observations indicate a number of emerging trends and a fundamental mind change due to the impact of the larger enterprises' approach to open source.

- **Open source components are ubiquitous.** The way software vendors are creating enterprise software is about to change significantly from a complete commercial build to a mixed orchestration of open source and commercially licensed software. Thus, commercial vendors are massively bringing open source into all enterprises without even asking their customers.

- **Customers will increasingly adopt OSS in the same professional way they have dealt with commercial software.** What matters is total cost of ownership (TCO) features, and already 48% of all surveyed enterprises rate customer references as very important.[1] These strongly indicate that the open source adoption is moving to mainstream.

- **The principles of open source are transferred to corporate best practices.** The free sharing of source code (46%) or the way of forming communities of contributors and consumers (42%), which are typical to public open source projects, is now transferred to the corporate microcosm.

- **A full new branch of service providers and competence centers inside established systems integrators will address commercial support for open source products.** Many CIOs acquire commercial support for open source and rely, even in mission-critical infrastructure pieces, on the open source quality combined with a commercial partner.

Regardless of which approach IT and business decision-makers take, as their adoption of open source software matures, they are likely to find more value beyond saving money on software license costs, low barriers to entry, and rapid evolution of successful open source projects. The open source paradigm embraces an even more important long-term benefit — a more innovative IT shop that can rapidly adapt to changing technologies and seize new opportunities as higher-level open source infrastructure projects mature. This combination of upfront cost savings and improved time-to-market will become a powerful weapon for those shops that can wield it strategically as a way to maximize the effectiveness of their software investments.
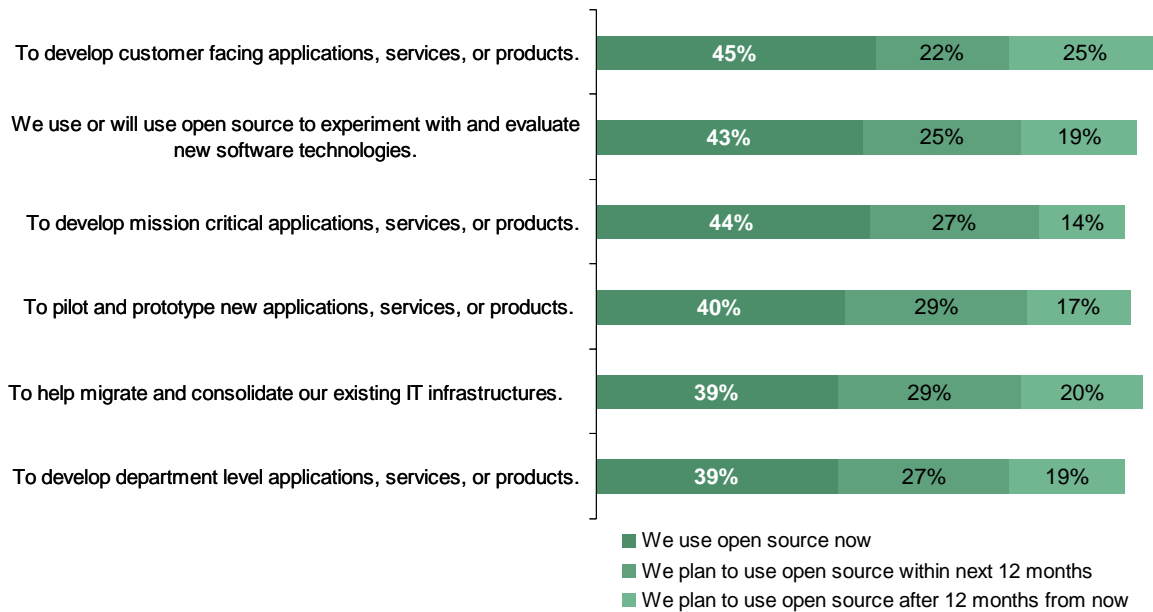
Open Source Paves The Way For The Next Generation Of Enterprise IT

Open Source Delivers Mission-Critical Applications And Climbs Up The Technology Stack

In the early days of open source software, it was mainly used for experimental software projects or prototyping on a group level. In the underlying survey of this Forrester Thought Leadership Paper, we focus on companies that use open source at least at this initial level or beyond. While it was less used on the division or corporate level, or even for mission-critical applications in the early days, this has dramatically changed over the past years. Already 45% of all companies leveraging open source use it for mission-critical applications, services, and products today (see Figure 1).

Figure 1: Open Source Is Used For All Kinds Of Purposes

"For which of the following tasks does your organization use or plan to use open source software?"

To develop customer facing applications, services, or products. — 45% | 22% | 25%

We use or will use open source to experiment with and evaluate new software technologies. — 43% | 25% | 19%

To develop mission critical applications, services, or products. — 44% | 27% | 14%

To pilot and prototype new applications, services, or products. — 40% | 29% | 17%

To help migrate and consolidate our existing IT infrastructures. — 39% | 29% | 20%

To develop department level applications, services, or products. — 39% | 27% | 19%

- ■ We use open source now
- ■ We plan to use open source within next 12 months
- ■ We plan to use open source after 12 months from now

Base: 102 Senior Business & IT Executives involved in the decision making for open source software technology and related services in large enterprises. Western European OSS Online Survey conducted by Forrester Consulting and commissioned by BULL, September 2008

Organizations that have adopted open source are pleased with their results. An overwhelming number of 70% of all customers that once experienced open source will increase its use in the future.[2] The high expectations of cost reduction, good quality, integration and customization, and especially standard compliance have been met by the open source products (see Figure 2).

Figure 2: Open Source Deployments Are Successful And Increasing

"How has open source software met your organization's expectations in the following areas?"

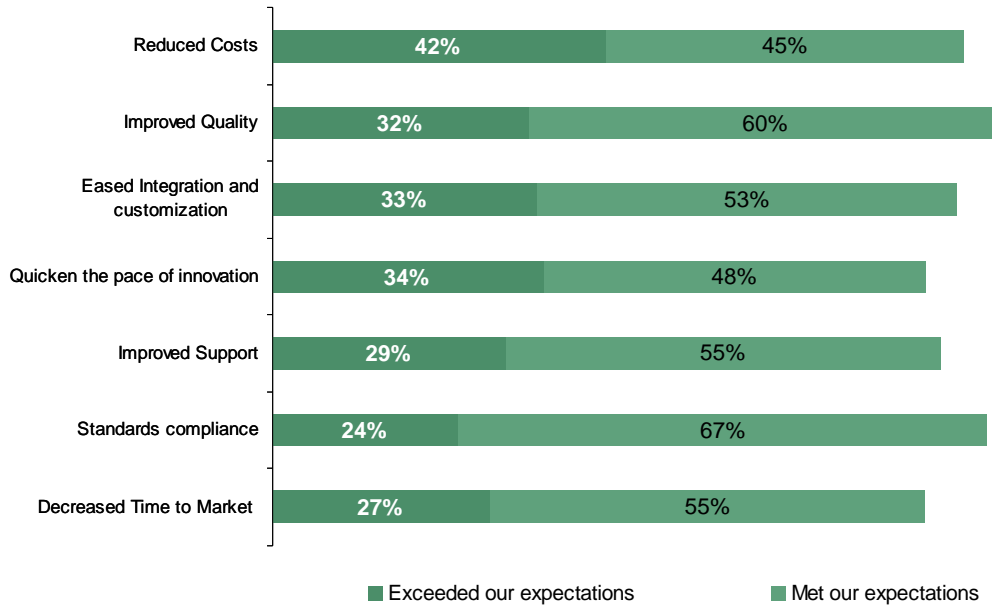|	Exceeded our expectations	Met our expectations
Reduced Costs	42%	45%
Improved Quality	32%	60%
Eased Integration and customization	33%	53%
Quicken the pace of innovation	34%	48%
Improved Support	29%	55%
Standards compliance	24%	67%
Decreased Time to Market	27%	55%

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The initial motivation is still the reduced cost aspect in the way these senior managers point it out:

> *"We use OSS since there are no license fees attached to them. Also, there is lesser maintenance cost, which helps in reducing the operational cost in comparison to any other commercial software." (Senior IT manager, public sector)*

> *"The OSS comes with the benefit of no license fee, which is a major component of the cost for commercial software. There is no limitation on number of users. We use OSS for business units across the organization. This led to lesser investment and reduced capital expenditure." (Senior IT manager, business services company)*

However, 92% of open source adopters gained their confidence from met or exceeded expectations around software quality. This clearly helped open source to move into the mission-critical enterprise space.

As a next step, we analyzed what kind of open source software is used across a technology stack, starting with the operating system and database and integration technology up to real business applications like open CRM and ERP systems. The open office productivity tools, like Open Office, are kind of special. While the end users perceive value as business application from this category of products, the IT organizations mostly consider them as desktop infrastructure, as they are not subject to individual business logic. Accordingly, these products show a strong adoption of 62% even in IT organizations that restrict their open source usage mainly to the basic infrastructure layers.

In general, the open source adoption starts with one of the multiple Enterprise Linux distributions and emerges quickly toward a foundation of middleware infrastructure. Forrester already identified the trend that vendors can package multiple middleware open source products into one commercially maintainable distribution similar to the well-established Linux distribution.[3] In many cases, the middleware infrastructure is the runtime environment for new business logic created in new programming languages like Java, Ruby, PHP, and Python (see Figure 3).

Figure 3: Infrastructure Adoption

"Has your organization adopted or does your organization plan to adopt open source software within each of the following <u>INFRASTUCTURE</u> CATEGORIES?"

Category	We adopted more than 24 months ago	We adopted within the past 24 months	We will adopt in the next 12 months
Programming Languages (e.g. Java, PHP, Python, Ruby)	46%	25%	18%
Databases (e.g. MySQL, PostgreSQL, SQLLite)	43%	23%	18%
Web server and networking (e.g. Apache, Nagios, OpenLDAP, Radius, Samba)	43%	20%	12%
Operating Systems (e.g. OpenSolaris, Red Hat Linux, Suse)	37%	24%	16%
Security Tools (e.g. ClamAV, NetFilter, OpenVPN, Snort)	21%	35%	19%
Portals, Web 2.0 and Mash-up servers (e.g. Dapper, eXo, Liferay, Xwiki)	13%	25%	25%
Application server (e.g. Glassfish, JBoss, JOnAS, Tomcat)	16%	19%	25%
Application Frameworks (e.g. Rails, Spring, Zend)	12%	23%	22%
Development IDEs (e.g. Eclipse, NetBeans)	10%	23%	26%

- We adopted more than 24 months ago
- We will adopt in the next 12 months
- We don't use and have no plans to adopt at this point
- We adopted within the past 24 months
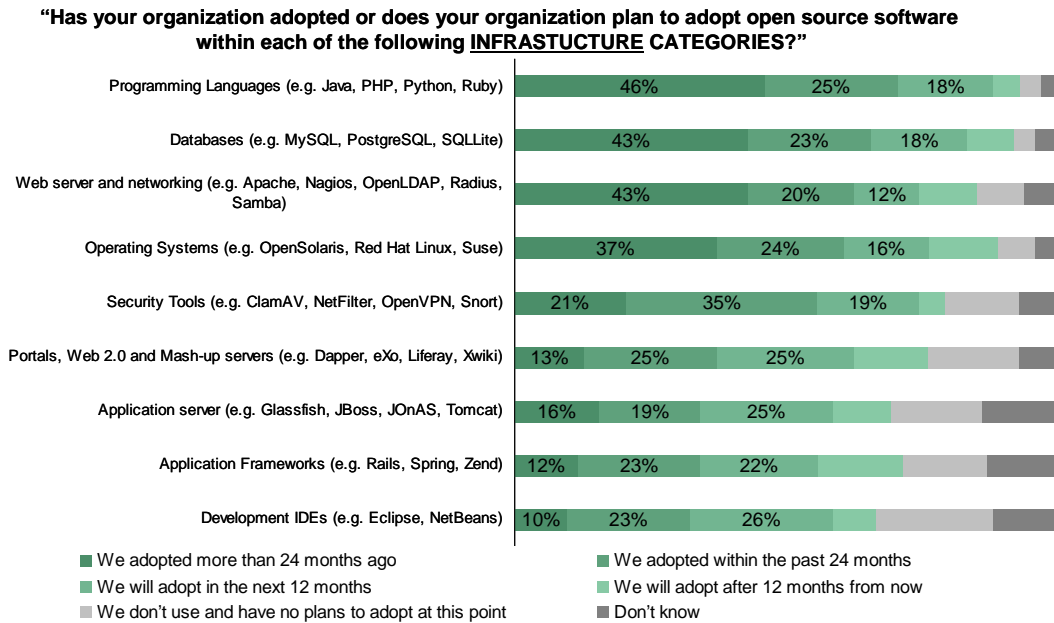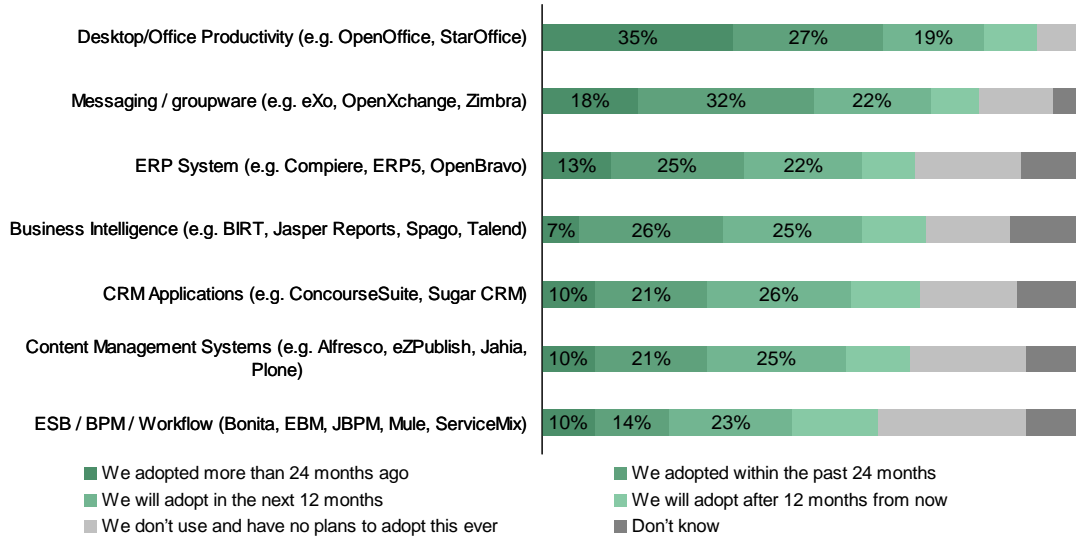- We will adopt after 12 months from now
- Don't know

Figure 4: Adoption Of Business Applications

"Has your organization adopted or does your organization plan to adopt open source software within each of the following <u>BUSINESS APPLICATION</u> CATEGORIES?"

Category				
Desktop/Office Productivity (e.g. OpenOffice, StarOffice)	35%	27%	19%	
Messaging / groupware (e.g. eXo, OpenXchange, Zimbra)	18%	32%	22%	
ERP System (e.g. Compiere, ERP5, OpenBravo)	13%	25%	22%	
Business Intelligence (e.g. BIRT, Jasper Reports, Spago, Talend)	7%	26%	25%	
CRM Applications (e.g. ConcourseSuite, Sugar CRM)	10%	21%	26%	
Content Management Systems (e.g. Alfresco, eZPublish, Jahia, Plone)	10%	21%	25%	
ESB / BPM / Workflow (Bonita, EBM, JBPM, Mule, ServiceMix)	10%	14%	23%	

- ■ We adopted more than 24 months ago
- ■ We adopted within the past 24 months
- ■ We will adopt in the next 12 months
- ■ We will adopt after 12 months from now
- ■ We don't use and have no plans to adopt this ever
- ■ Don't know

Base: 102 Senior Business & IT Executives involved in the decision making for open source software technology and related services in large enterprises. Western European OSS Online Survey conducted by Forrester Consulting and commissioned by BULL, September 2008

Moving up the stack from basic infrastructure to business application is explored in the next graph. An increasing percentage of companies (38%) even adopted open source ERP systems at least 24 months ago. Given the significantly increased availability of open source business applications, the adoption is high but still behind today's opportunity (see Figure 4).

We'd like to point out with respect to all these results that in this document, we focused on companies that consciously adopted open source on some level already. But is this representative for the IT in the enterprise in general? Actually, we asked the end of 2007 in *Forrester's Enterprise And SMB Software Survey, North America And Europe, Q3 2007,* a large number of IT organizations. In each country, a different portion of companies stated that they use open source:[4]

Country	Open source usage
France	24%
Germany	21%
US	17%
Canada	17%
UK	15%

France is the most advanced country in terms of usage, followed by Germany. However, Forrester assumes that the real numbers that would turn out by physical software assessments in the data centers would be significantly higher, as discussed on the next chapter around the ubiquity of open source deployments. This means that if we state, for example, an adoption of open source ERP of

38% above, this would still cover an impressive number of approximately 38%*24% = 9,1% of all enterprises in France.

The way different industry segments leverage open source is as interesting as the distribution across the major European and American countries. We compiled the adoption of infrastructure and business applications into one continuous technology stack, reaching from the operating systems up to CRM applications, and segmented the Europeanwide data by the major industry segments. We asked not only the current status but also the goals for the future (see Figure 5).

The adoption by industry vertical is not uniform. Interestingly, the sector that communicates the most on open source — government and public sector — is still relatively slow in Europe as shown in the graph. As the public sector is one of the major drivers of open source initiatives in France, we would expect significantly higher numbers for a survey focused on this target segment.[5] Nevertheless, this sector has the most ambitious plans even Europe wide. The predicted usage of operating systems and databases is 100% and 96%, respectively (see Appendix B for details). Please keep in mind that the "100%" does not mean that each of the open-source-enabled government institutions would use open source operating systems exclusively. However, once the skills in the data center are well developed, the commercial operating systems will have a constantly decreasing deployment in these places. Looking at the higher segments of the technology stack, this sector still has to show if already available business applications meet their demand or if new open source applications have to be invented.

Figure 5: Adoption Of Business Applications By Industry
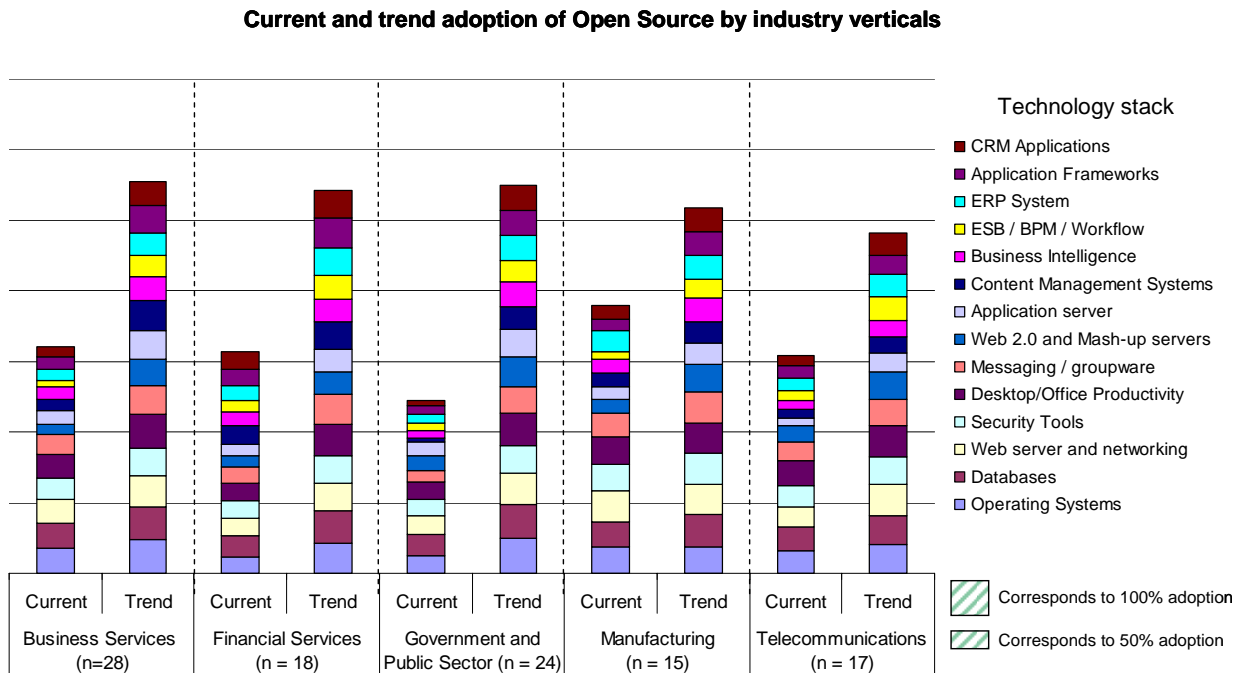
Current and trend adoption of Open Source by industry verticals

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The manufacturing sector is already more mature in leveraging all levels of the technology stack. The industrial usage of open source software embedded in products like electronic devices, cars, trains, or planes created significant confidence for open source in general in this industry. The accelerated time-to-market is a further driver especially in this sector. For example, open source

even allows the adoption of lower operating system levels to upcoming hardware appliances. Large electronic and industrial manufacturers often rely on dedicated open source systems integrators to develop and maintain their software.

The services sector (media, transportation, trading, etc.) also has a strong adoption rate, linked to its massive investment in Web infrastructures for services and eCommerce, which heavily rely on open source components. Not surprisingly, telecom is a very advanced sector for OSS use, given its need to distribute services to millions of users at low cost. This is especially obvious in infrastructure layers, but less in business applications. Similar to industrial manufacturing, open source is heavily leveraged by telecom firms for access technology. This brought basically another smart Linux device in the form of an ADSL router to every household with broadband access. The same wave continues with mobile phones based on Android or Symbian.

While it has the reputation of being a more conservative sector, finance is not the last one to use open source, especially for development environments, but also business applications. Finally, each industry vertical has to find its individual path and speed to a sophisticated open source adoption. Obviously, the graph of this emerging market will look significantly different in only 12 months from now, with a continuously strong adoption trend in open business applications.

Open Source Becomes The Hidden Backbone Of The Software Industry

The majority (i.e., 72%) of all surveyed organizations are well aware of the fact that most commercial vendors today include open source components in their commercially licensed products. In a few cases, this is even the only origin of open source in enterprises. Some 39% tend to combine open source with commercial software and follow a concept of open source/commercial federation on the setup of internal software projects. Twenty-two percent of the surveyed enterprises even prefer a pure open source environment.

> *"We prefer an adequate combination of open and commercial environments. This is done by an external vendor. This vendor designs the suggestive action plan." (CIO of a business service company)*

> *"We acquire OSS on the basis of application(s) we require for a relevant project. We first locate recognized leaders who are currently using these applications. Then we tender our vendors for quotes. Apart from cost, the business fitment and time-to-market are key criteria for selecting an OS application." (Head of architecture and engineering of a business service company)*

Security is the No. 1 challenge that Forrester identified not only in this survey around open software.[6] It is followed by the concern about the availability of services and support around the product and the availability of skills. All three top-level challenges can be compensated by the offering of an external professional service provider that is experienced and skilled with open source deployments and maintenance services (see figure 6).

Figure 6: Security And The Availability Of Support Are The Most Frequent Concerns

"What are your organization's biggest challenges towards adoption of open source software?"
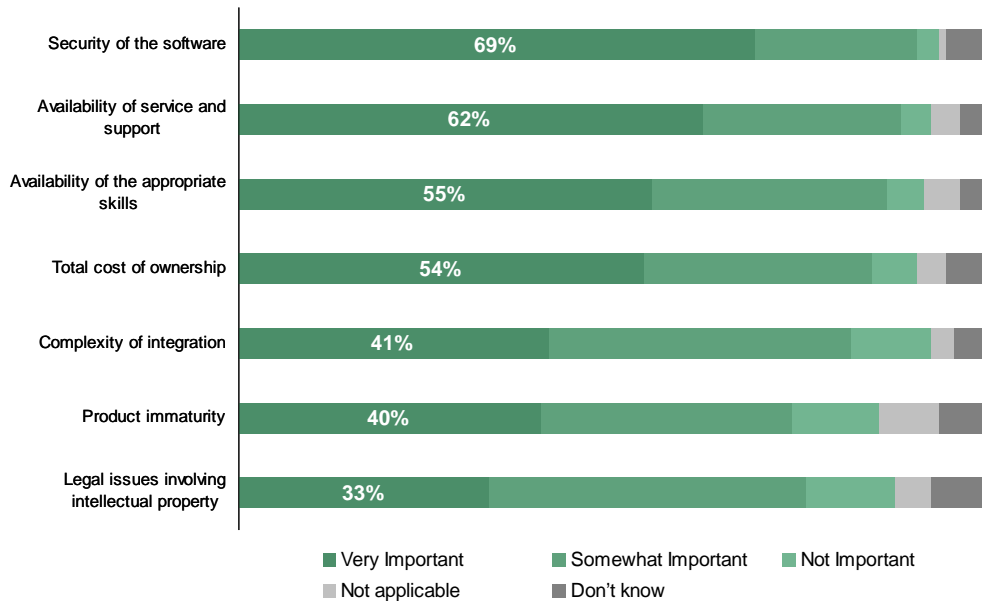
Base: 102 Senior Business & IT Executives involved in the decision making for open source software technology and related services in large enterprises. Western European OSS Online Survey conducted by Forrester Consulting and commissioned by BULL, September 2008

Open Source Is A Paradigm Change On How To Run An Enterprise IT Organization

Enterprise CIOs are much cost-focused, especially in times of economic downturn. Thus, their first approach and still-dominant motivation to adopt open source is cost savings (56%). However, this is by far not the only motivation. The independence from a single vendor is rated by already 45% as a very important motivation to move away from commercially licensed software (see Figure 7).

This desire for independence will even dramatically increase in the future. Some of the large commercial vendors are increasing their maintenance fees dramatically. Customers like to determine on their own which level of maintenance they like to buy and cannot understand why they have to purchase a 24x7 help desk access if this is not required for a certain business domain.[7] Already today, 47% of enterprise customers state that the independence of a commercial software vendor is "very important," and additionally, 48% rate it as "somewhat important." The software industry in general will see an increasing trend of maintenance being provided by third-party services providers that are independent from the original vendor or author of the software. Finally, this again blurs the difference of a professionally deployed open source and commercial software. Both packages might be maintained by the same external third-party company on the desired level.

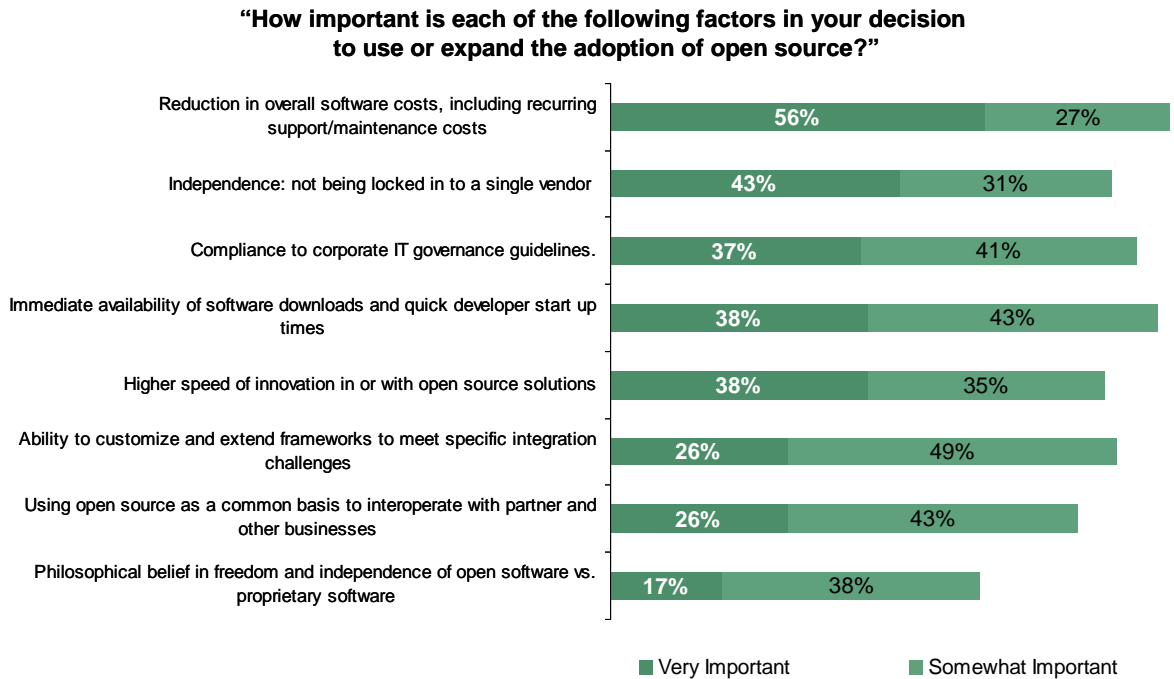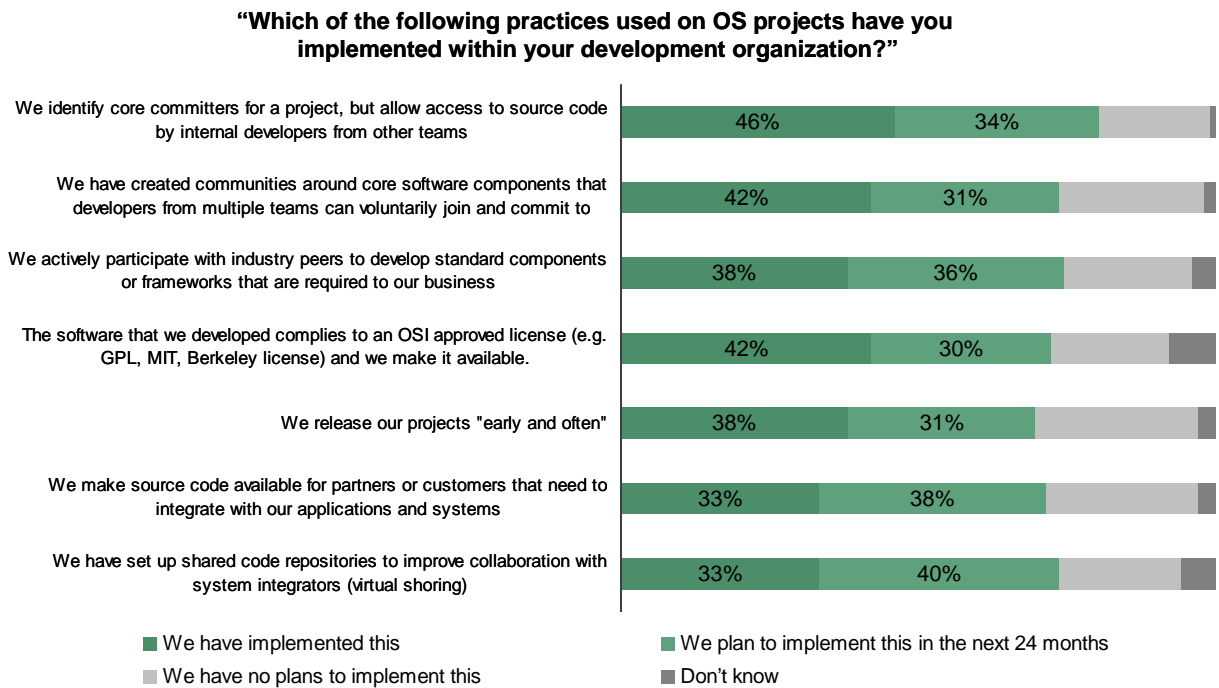## Figure 7: Motivations To Expand The Open Source Adoption

**"How important is each of the following factors in your decision
to use or expand the adoption of open source?"**

Factor	Very Important	Somewhat Important
Reduction in overall software costs, including recurring support/maintenance costs	56%	27%
Independence: not being locked in to a single vendor	43%	31%
Compliance to corporate IT governance guidelines.	37%	41%
Immediate availability of software downloads and quick developer start up times	38%	43%
Higher speed of innovation in or with open source solutions	38%	35%
Ability to customize and extend frameworks to meet specific integration challenges	26%	49%
Using open source as a common basis to interoperate with partner and other businesses	26%	43%
Philosophical belief in freedom and independence of open software vs. proprietary software	17%	38%

■ Very Important   ■ Somewhat Important

Figure 8: The Spirit Of Open Source Emerges Inside Large Corporations

**"Which of the following practices used on OS projects have you
implemented within your development organization?"**

Practice	We have implemented this	We plan to implement this in the next 24 months
We identify core committers for a project, but allow access to source code by internal developers from other teams	46%	34%
We have created communities around core software components that developers from multiple teams can voluntarily join and commit to	42%	31%
We actively participate with industry peers to develop standard components or frameworks that are required to our business	38%	36%
The software that we developed complies to an OSI approved license (e.g. GPL, MIT, Berkeley license) and we make it available.	42%	30%
We release our projects "early and often"	38%	31%
We make source code available for partners or customers that need to integrate with our applications and systems	33%	38%
We have set up shared code repositories to improve collaboration with system integrators (virtual shoring)	33%	40%

■ We have implemented this   ■ We plan to implement this in the next 24 months
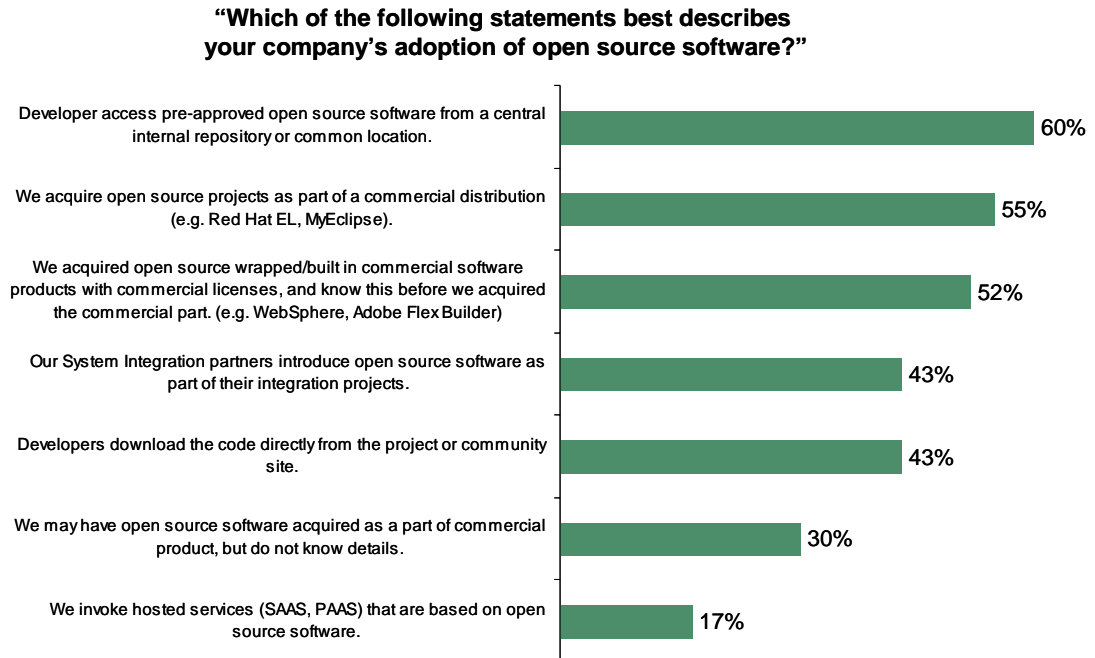■ We have no plans to implement this   ■ Don't know

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Beyond the license model of open source and the implications for maintenance, many larger corporations are already embracing the spirit of the open source community approach on a corporate level (see Figure 8). Custom developed code is shared among the business divisions, and the way skilled in-house developers are allocated to projects is changing. The creation of corporate software frameworks and reusable business services as well as new business logic moves to a kind of corporate open source community.

The required governance structures are similar to normal IT governance. While the corporate procurement department helps to enforce the consolidation on certain products, the simple availability of open source requires stricter governance. Sixty percent of our surveyed companies that adopt open source realized this already and installed central repositories to distribute approved versions of open source inside the corporations (see Figure 9).

Figure 9: Governance For Open Source Adoption

**"Which of the following statements best describes
your company's adoption of open source software?"**

Developer access pre-approved open source software from a central internal repository or common location.	60%
We acquire open source projects as part of a commercial distribution (e.g. Red Hat EL, MyEclipse).	55%
We acquired open source wrapped/built in commercial software products with commercial licenses, and know this before we acquired the commercial part. (e.g. WebSphere, Adobe Flex Builder)	52%
Our System Integration partners introduce open source software as part of their integration projects.	43%
Developers download the code directly from the project or community site.	43%
We may have open source software acquired as a part of commercial product, but do not know details.	30%
We invoke hosted services (SAAS, PAAS) that are based on open source software.	17%

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Recommendations

Looking forward, software decision-makers will find that ignoring open source software will be an increasingly untenable position. Whether it's brought in by developers or packaged up in commercial software, IT decision-makers will need to decide whether they are content to sit back and allow tactical adoption of open source to run its course or take a more proactive strategy toward adopting open source software.

Tactical Use Of Open Source Software Is Practically Inevitable

Shops that Forrester talks to on a regular basis, which have no open source policy, are regularly surprised when open source turns up within their deployed applications. This passive approach to open source adoption is typically characterized by a predictable set of responses:

1. **Denial that open source is already in use.** Shops that think they don't already have open source in-house are often surprised during an audit of deployed software. Developers will often take advantage of common open source frameworks like Spring or Hibernate, or widely deployed software like the Apache HTTP Server or Tomcat. If you haven't performed an audit, then you're likely at this state already. Start by asking your development manager or outsourcing contact whether their teams are using open source in any of the applications they are creating and managing. For total certainty, make sure that the developers can confirm a negative response from their project leaders.

2. **Anger over a surprised loss of control.** There's nothing like an unexpected surprise to create anger and concern among software decision-makers. The truth is that the software purchasing process has long been a de facto control over what software is used within an IT shop. Now that open source software has removed that control point, IT decision-makers are faced with an immediate short-term need to put an entirely different software acquisition control framework in place, or risk losing control over the enterprise architecture planning and decision-making over technology investments. It's easy to point the finger at the developers or architects that made the decision to bring in open source software, but in truth they were most likely just trying to get their job done on time and on budget.

3. **Bargaining to re-establish existing processes.** It's common for shops that have been surprised by their unanticipated adoption of open source software to seek to expunge it from existing deployed applications. If there is a project management office and/or enterprise architecture group, they may be enlisted to catalog and eliminate all existing open source libraries. It's also common for a firm's legal department to get involved because of the concern over potential exposure from viral OSS licenses. During this process, firms will typically come up with a list of affected applications and an elaboration of potential risks to the firm.

4. **Beyond the point of no return.** For many shops, the result of an open source assessment is alarming: They discover that it's nearly impossible to extract and replace the numerous open source components. Especially in economically difficult times, IT professionals have to justify all investments in front of their business peers. Usually, there is no business case to get rid of once-deployed open source products.

5. **Finally, acceptance of open source software.** Once IT leaders conclude that open source adoption is inevitable, the questions become how to adopt it sensibly and how to re-exert control over software selection in a world where developers need to comply

voluntarily instead of due to financial controls. At this point, questions about policies and processes frequently drive a shop to look for outside assistance from systems integrators or open source specialist firms.

The Alternative: 10 Strategic OSS Adoption Best Practices

Tactical use of open source may occur without active involvement by IT decision-makers, but it isn't necessarily the best way for firms to proceed. Instead, consider an intentional, strategic approach toward open source adoption based on the following set of best practices, as recommended by software professionals at firms that are already further along the path of open source use:

1. **Choose the right component at the right level of IT infrastructure.** Nine out of 10 senior business and IT executives agree that the most important best practice when it comes to open source adoption involves choosing an appropriate open source component at each level of their IT infrastructure (see Figure 10). So what makes an open source component the right choice? Look for time-tested solutions with vibrant committer communities and predictable release schedules. Some of the best solutions to start with are those that have well-established foundations behind them like Mozilla, Apache, Eclipse, or OW2.

2. **Fully calculate the TCO.** Open source software eliminates software licensing costs, but that's only one part of the overall TCO for a software solution. Open source solutions often take more effort to install and configure, and there are still training, support, and integration costs to consider as part of the budgeting process. When calculating the overall TCO, it's wise to choose a multiyear evaluation period. For example, a three-year time period is reasonable for low-impact, highly substitutable options like development IDEs and integration frameworks, but a longer time period of five to seven years would be sensible for infrastructure solutions like DBMSes and application servers.

3. **Define your preferred OSS support strategy.** If commercial support is used from an ISV or systems integrator, then it is easier to plug an OSS solution into an existing IT organization. If commercial support is not an option, then some provision must be made toward internal self-support. Most firms that invest in self-support align it with centralized IT teams like a tool support group, an enterprise architecture organization, or the project management office. The key value of open source when it comes to support is that a support contract is no longer required just to be eligible for product upgrades. This makes it possible to evaluate the value of support as a standalone option, and also allows shops to consider a wider range of options than a single ISV, including systems integrators that develop specialized competencies in open source software.

4. **Improve application life-cycle management (ALM) capabilities.** At first glance, it would not seem that open source adoption and ALM are related, but three out of four IT and business executives think that ALM capabilities are very important or important to successful adoption of open source software. Why? For one thing, open source solutions tend to be more componentized. And when developers need to reliably assemble and deploy applications composed of multiple open source libraries, ALM tools help them track what versions are included. And because there's no vendor to manage dependencies and track changes across each software OSS component, shops find that they need that capability in order to stay on top of a more complex change management process.

5. **Scan projects to identify licensing risks.** It's important to get a grip on any existing open source components that developers may already be using to identify the extent of risk that
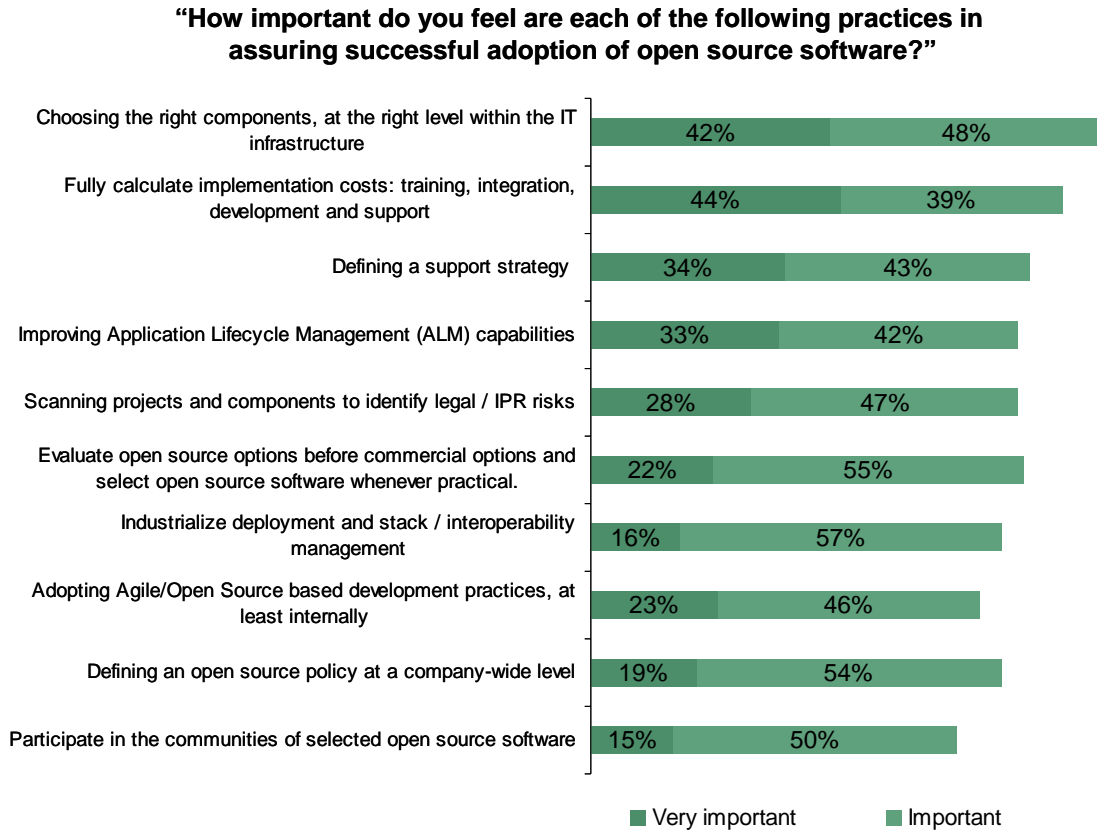
a company faces. The simplest way to do this is to ask development managers and developers what OSS components they are using, and compile a list of the results. But even if application development professionals make a good-faith effort to identify dependencies, it's always possible that an inadvertent omission may result in unidentified, latent risk. That's where automated code scanning tools can augment manual processes. These tools actively scan code and identify patterns that match most known open source software. Taking a "trust, but verify" approach will help a development project ensure that they have aggressively reduced potential exposure of their software IP from accidental contamination by a viral OSS license.

6. **Evaluate open source before selecting commercial options.** Three out of four senior business and IT executives who have already adopted open source software say it's important to evaluate open source solutions before looking at commercial alternatives to see if a practical open source option exists. As a result, expect to see greater adoption of open source solutions higher up in the IT infrastructure as practical solutions mature. Firms can make simple adjustments to their standard software selection process by adding a check for open source at the start of a selection process. When a potential solution exists, developers can prototype and test it without needing to make any upfront financial commitment. When it looks like it's a workable solution, it may be possible to short-circuit a drawn-out Bake-Off of commercial products and instead focus on moving forward into a full project implementation.

7. **Integrate and industrialize management of open source deployments.** As noted earlier, it is important for developers to improve their ALM capabilities to effectively manage open source software when it's part of a custom development project. But it's also important to manage the deployment of open source solutions, even when they are used underneath packaged application deployments or as part of the core infrastructure, storage, and compute pools that make up modern IT data centers. Industrialization of open source deployments include adjustment — not just to provisioning and change management tools, but also to the repeatable processes and workflow used by operations personnel. For example, a deployment manager might require a "certificate of authenticity" from a project manager that correctly identifies all open source software that will be deployed to production and the licenses that are used within the project before approving a push to production.

8. **Adopt Agile development practices in tandem with open source.** Why would open source adopters say that Agile practices are important when it comes to open source? For one reason, many open source projects use Agile practices like continuous integration, and many ship working software every few weeks in the form of milestone builds or even point releases. Continuous integration also helps teams that need to integrate multiple open source components into a single release by providing instant feedback when a required dependency is broken. And when development teams combine Agile practices with the easy access and the low barriers to entry and access that open source software present, they can often get an initial proof of concept up before they could even get through a typical purchasing cycle for most enterprise software.

9. **Define a consistent companywide open source policy.** Left to their own devices, application developers and architects will make the tactical decision about which open source projects help them get their work done on time and on budget. As an alternative, a consistent companywide policy helps articulate exactly when and how open source may be used, and the proper process to do so. An open source policy doesn't need to be a huge tome; rather, develop a position document of 10 to 15 pages that simply states the company's open source policy, what the company hopes to gain through the use of open

source, a summary of which of the most common open source licenses can be used and under what circumstances, and a summary of the process that should be followed when adopting a new open source solution. Make sure that the open source policy document is developer- and architect-friendly — you want them to read and understand it.

10. **Participate in key open source communities.** Although it is still not very common, shops that push open source adoption to its logical conclusion find that it makes sense to participate in, or even drive, an open source community that meets its strategic needs. For example, several telecommunications players sponsor communities such as OW2, Morfeo, and others. Industry players participate in projects such as LiMo and QualiPSo. eGovernment players sponsor OSOR and ADULLACT, among others. Active participation allows IT shops to have an active say in the evolution of the projects they depend upon; as active committers to a project, they play a key role in its evolution.

Figure 10: Governance For Open Source Adoption

"How important do you feel are each of the following practices in assuring successful adoption of open source software?"

Practice	Very important	Important
Choosing the right components, at the right level within the IT infrastructure	42%	48%
Fully calculate implementation costs: training, integration, development and support	44%	39%
Defining a support strategy	34%	43%
Improving Application Lifecycle Management (ALM) capabilities	33%	42%
Scanning projects and components to identify legal / IPR risks	28%	47%
Evaluate open source options before commercial options and select open source software whenever practical.	22%	55%
Industrialize deployment and stack / interoperability management	16%	57%
Adopting Agile/Open Source based development practices, at least internally	23%	46%
Defining an open source policy at a company-wide level	19%	54%
Participate in the communities of selected open source software	15%	50%

■ Very important   ■ Important

Base: 102 Senior Business & IT Executives involved in the decision making for open source software technology and related services in large enterprises. Western European OSS Online Survey conducted by Forrester Consulting and commissioned by BULL, September 2008

Appendix A: Methodology

In September and October 2008, Forrester Consulting conducted a phone and online survey commissioned by Bull.

One hundred thirty-two senior business and IT executives in France, Germany, Spain, and the UK were asked about their use of open source technologies and services as part of their business and IT strategy. All surveyed organizations have more than 1,000 employees and are actively using open source in some form. All respondents are involved in the decision-making for open source software technology and related services for their company. This study specifically targeted the following verticals:

- Manufacturing (17% of respondents).

- Business services (24% of respondents).

- Telecommunications (14% of respondents).

- Financial services (19% of respondents).

- Governmental and public sector (26% of respondents).

For this study, we interviewed 30 organizations over the phone and collected and analyzed 102 responses from the online survey.

Appendix B: Industry Sectors

Our survey unveiled this detailed current and future open source adoption per industry segment:

Current and trend adoption of Open Source by industry verticals

	Business Services (n=28)		Financial Services(n = 18)		Gov. and Public Sector (n = 24)		Manufacturing (n = 15)		Telecoms (n = 17)	
	Current	Trend	Current	Trend	Current	Trend	Current	Trend	Current	Trend
CRM Applications	29%	68%	50%	78%	13%	71%	40%	67%	29%	65%
Application Frameworks	36%	79%	44%	83%	25%	71%	33%	67%	35%	53%
ERP System	32%	64%	44%	78%	25%	71%	60%	67%	35%	65%
ESB / BPM / Workflow	18%	61%	33%	67%	21%	63%	20%	53%	29%	65%
Business Intelligence	36%	68%	39%	67%	21%	71%	40%	67%	24%	47%
Content Management Systems	32%	82%	50%	78%	13%	63%	40%	60%	24%	47%
Application server	39%	82%	33%	61%	38%	79%	33%	60%	24%	53%
Web 2.0 and Mash-up servers	29%	75%	33%	67%	42%	83%	40%	80%	47%	76%
Messaging / groupware	57%	82%	44%	83%	33%	75%	67%	87%	53%	76%
Desktop/Office Productivity	68%	96%	50%	89%	50%	92%	80%	87%	71%	88%
Security Tools	57%	79%	50%	78%	46%	79%	73%	87%	59%	76%
Web server and networking	68%	86%	50%	78%	54%	88%	87%	87%	59%	88%
Databases	71%	93%	61%	94%	58%	96%	73%	93%	65%	82%
Operating Systems	71%	96%	44%	83%	50%	100%	73%	73%	65%	82%

Base: 102 Senior Business & IT Executives involved in the decision making for open source software technology and related services in large enterprises. Western European OSS Online Survey conducted by Forrester Consulting and commissioned by BULL, September 2008

Appendix C: Endnotes

[1] This last one is particularly interesting because it is that exact sort of behaviors that you would expect to see from "early mainstream" customers in Moore's Chasm model. This indicates that OSS may well be crossing the chasm in Europe as we speak.

[2] To the question "Which statement best describes your company's current approach toward open source?" 70% of the online survey respondents said that they will be increasing the use of open source software, 25% said that it will remain the same, and only 4% said that they will reduce the usage of OSS.

[3] See the April 2, 2008, "Claiming Ground Against The ESB Gorillas" teleconference.

[4] See the July 3, 2008, "Open Source Adoption: Notes From The Field" report. This data is based on Forrester's Enterprise And SMB Software Survey, North America And Europe, Q3 2007. Forrester surveyed 1,235 software decision-makers at North American and European SMBs. Of these, 806 were from North American SMBs and 429 were from European SMBs. Out of all North American respondents, 41% were from companies with six to 99 employees, 40% had 100 to 499 employees, and 18% were from companies with 500 to 999 more employees. Fifty-three percent of the sample was made up of respondents who were senior-most IT executives at their companies, 15% were executives in IT, 30% were managers reporting to an executive in IT, and 3% were line-of-business executives. All other data in this report is based on the recent survey as described in Appendix A.

[5] The limited sample size of this survey does not allow for a reliable data cut by both country and industry segment.

[6] See the July 3, 2008, "Open Source Adoption: Notes From The Field" report.

[7] See the October 10, 2008, "Coping With SAP's Pricey Maintenance Hike" report.