

IJsselstein municipality: open source is not an end in itself, but it is an important means to an end

In the year 2000 the municipality of IJsselstein had its first experiences with open source software. Back then, the newly appointed ICT manager Andries Broekema had been watching developments in the world of open source for several years, and he was well aware of the possibilities. He introduced open source software in the municipality as a webserver solution. IJsselstein uses open source software in a pragmatic manner. Broekema makes the distinction between open standards and open source software. He considers open standards to be an end in itself, whereas open source software is merely a means to an end. Nevertheless, it is an important means, which becomes evident from the fact that the municipality of IJsselstein relies on open source software for a large part of its ICT-infrastructure.

Municipality of IJsselstein

The municipality of IJsselstein (<http://www.ijsselstein.nl>) is located in the province of Utrecht and has approximately 34.000 inhabitants. Some 275 people work for the municipality, most of them in the modern city hall that was finished in the year 2000. The building also accomodates a theatre and a cinema. Approximately 240 workstations and 4 servers make up IJsselsteins ICT-infrastructure, which is controlled by 2 ICT-managers. In addition, there is a helpdesk employee to deal with the requests of employees.

Starting point and desires

In 2003, the department of finance had the need for a new application for land registry. Based on functional demands, the application *GouwVastgoed* of *Gouw IT* (<http://www.gouwit.nl>) was chosen. GouwVastgoed is written in the programming language JAVA and based on the J2EE-platform^[1]. In the selection procedure GouwIT indicated that the application fully answered to the official specifications of J2EE.

A strategic choice for Jboss

Running a J2EE-application requires a so-called application server. IJsselstein did not have such a server, and Gouw IT delivered Weblogic by the company BEA, which is proprietary software, as a standard application server for J2EE. However, the ICT management of IJsselstein did not agree with this that easily. Since the ICT management anticipated that more applications would have to run on the J2EE application server in the future, they wanted to make a strategic choice for a standard platform. In making this choice, independency of suppliers, quality and price were key issues. These criteria are also important for the accountability towards policy-makers. To these people, according to Broekema, open source software is not the most important issue, but in making policy the price and quality of ICT matter. In keeping the price down and the quality up, open source software can of course be very valuable.

In the selection procedure conducted by the municipality itself, open source products as well as commercial closed products were considered. In the end the open source application server JBoss (<http://www.jboss.org>) was selected. JBoss was considered to be the most trustworthy option for a number of reasons. First of all, IJsselstein had already had excellent experiences with the open source webserver Apache. Web research showed that the community of JBoss included several programmers that are also actively involved in the Apache project. It also showed that the JBoss developer community handled security problems in a very professional way. A very elaborate procedure is established to deal with these problems. Also, Broekema and his colleagues read some very positive stories, written from experience, about the migration of commercial products to JBoss. Moreover, they discovered that the support for JBoss is taken care of in a professional way. There is a commercial branch of JBoss, called JBoss Inc., which handles support in Europe, and JBoss has several partners with high appeal, among which Hewlett-Packard and the Dutch company Finalist[2]. As a final test the municipality built its own test environment. Setting up the test environment was relatively easy and it proved to be extremely stable.

IJsselsteins own research provided a lot of trust in the quality of JBoss, but JBoss also did well when the criteria for price and independency were considered. Since JBoss is provided under the open source license LGPL[3], there is no dependency on any software supplier nor are there any costs for the license. In comparison to the closed software Gouw IT was going to deliver, this meant they would initially save several thousand euros.

In addition to this the municipality calculated a total future saving of approximately 70.000 euros. When a closed commercial product is used, the expenses for the license often increase proportionally to the intensity in which the product is used. This means the expenses would increase even more when in the future the number of applications on the application server would increase. Also installing the application server software on more than one machine (for instance for the sake of load balancing) would mean an increase in the license expenses when using closed software. Even though the cost advantage is not decisive, Broekema considers it so much gained, since there has been more and more pressure on the budget for ICT in the last years.

According to Broekema the many liberties of the open source license also keep down the costs of managing the license. "Open source software can be adapted, copied and shared. Therefore it is not necessary to go through the license agreements for every change you make to see if it is permitted."

Consulting with the supplier

Initially Gouw IT was not too excited about supplying and supporting the open source software JBoss in addition to the closed product Weblogic of BEA. Gouw IT had indicated in the selection procedure that its software met the J2EE specification. Therefore the software should be able to run on any application server based on the J2EE specification. "Considering that commensurability with the J2EE specification is thought to be very valuable within the JBoss project, the software supplied by

Gouw IT should be able to run on JBoss as well,” argued IJsselsteins ICT management. However, Gouw IT could not immediately guarantee that it could.

Eventually IJsselstein was willing to invest the several thousand euros that were saved in license costs to make the application suitable for JBoss. In this way the total amount spent on the project would remain the same. This concession convinced Gouw IT. In the end it turned out only a few adaptations were necessary to make the software fit for JBoss. Moreover, in the process of adapting the software a bug was found and corrected. Altogether Gouw IT was positively surprised by the quality of JBoss and the speed of the process.

The choice in retrospect

Early in april 2004 the new environment was taken into production. IJsselstein is running the application server on the open source system Linux. However, JBoss is not dependent on any platform and can therefore run on any system that supports Java.

IJsselsteins experiences with JBoss are extremely positive. Up to today the server has not failed once. According to Broekema open source software, and the Linux system especially, is highly stable and reliable. “Of course we keep an eye on the different open source systems, but there is really never anything wrong with it”.

Though the managers never did any courses on open source software, they did have some experience with Unix, which helped them master Linux and the other open source software relatively easy by self-study and hands-on experience. By now, both ICT managers are fully devoted to it and in their spare time they almost exclusively use open source software.

The municipality considers the official J2EE certification that JBoss got in july 2004 to be a confirmation in making the right choice. JBoss is the first open source application server to receive the J2EE-label after Sun changed its demands for this certificate in november 2003 and no longer excluded open source products beforehand [4]. Moreover, the fact that other governmental organizations, among which the French tax company, also use JBoss shows that IJsselstein chose a professional, widely accepted product[5].

Other open source software

For internet and intranet the municipality has been using open source software for years. The webpages have been placed on machines that use Linux as controlling system and Apache as webserver (<http://httpd.apache.org>). Although Broekema does not choose open source software blindly, he has a clear stand when it comes to webserver: “In my opinion there is no other option than Apache.”

In addition IJsselstein uses the open source databases MySQL (<http://www.mysql.org>)

and PostgreSQL (<http://www.postgresql.org>) for the internet and intranet. For managing the website they use PostNuke (<http://www.postnuke.org>), a Content Management System (CMS) based on the scripting language PHP (<http://www.php.net>) [6]. Broekema calls it “a reliable and safe CMS”. The money that was saved as a result of the absence of license costs was invested in webdesign.

For managing and dealing with requests the municipality relies on open source software too. Both the helpdesk and the department of personnel use the highly advanced software OTRS (<http://www.otrs.nl>).

To prevent Spam the open source software ASSP (<http://assp.sourceforge.net>) is used. ASSP works with so-called whitelists and Bayesian filtering. Before, IJsselstein let his internet provider scan its e-mails, but at one point it started marking e-mails as spam even though they were not. This led the municipality to taking the filtering of spam in its own hands, which increased the control enormously. The employees’ mailboxes are nearly completely spam-free without e-mails being rejected mistakenly. ASSP can run on various controlling systems, including Linux and MS-windows, and is able to co-operate with various open source SMTP-servers [7], such as Sendmail and Postfix [8], but also with closed software like Lotus Notes. ASSP is placed inside the message stream, for instance between the internet e-mail provider and our own e-mail system.

For internet access IJsselstein uses Squid (<http://www.squid.org>). For the security of the internal network IJsselstein relies on open source software as well. In this case Broekema considers open source to be the obvious choice. When it comes to network security open source software can be considered to be in the lead, which was also evident in the OSSOS testcase *Waterschap Zeeuws-Vlaanderen*.

Plans for the future

Thanks to its good experiences and down-to-earth attitude, IJsselstein has realistic ambitions concerning open source software. For example, the developments in software for the Gemeentelijke Basisadministratie (GBA) are monitored closely. IJsselsteins GBA-applications are now running on Unix, since their current supplier Centric does not support Linux yet. Broekema indicates that if Centric will start supporting Linux, he would seriously consider a migration from Unix to Linux. Such a migration would not only save them license costs, but would also mean saving in hardware, as the Intel-machines on which Linux runs are much cheaper than the RISC-machines necessary for Unix. The moment that such a transfer would take place is dependent on the term of writing off for the investments that are already made, says Broekema.

The municipality is also experimenting with OpenOffice.org (<http://nl.openoffice.org>). At present this open source office suite has been installed at several workstations in the ICT department. They primarily use the standard PDF-functionality in OpenOffice.org, which converts MS-office documents into PDF for the sake of the website. In addition OpenOffice.org is sometimes used to fix defective MS-Office documents. Broekema is especially excited about the server mode that is a standard

functionality of OpenOffice.org. The insufficient compatibility between Centric and OpenOffice.org is the most important reason not to make the transfer, but Centric recently indicated that in the near future it will start supporting both Linux and OpenOffice.org[9].

In conclusion

IJsselstein does not blindly choose open source software. In every situation a well informed decision is made. This resulted in a hybrid environment in which open software and closed software run simultaneously. The portion that forms the open software has steadily grown since the first experiences in 2000. Even though open source is not an end in itself, it proves to be an important means for the municipality of IJsselstein towards the goals of independency of suppliers, low costs and high quality. That these goals can be achieved shows from the good experiences IJsselstein has with the open source application server JBoss. Convincing the application supplier clearly paid off. "To gather fruit, sometimes its necessary to climb a fence first."

This document was written by Bart Knubben of the OSOSS Program and translated by David Duijnmayr. It is based on an interview conducted on June 16, 2004 with Andries Broekema, project manager ICT of the municipality of IJsselstein, and Ron Bekker, staff member of the department of finance of the municipality of IJsselstein.

Notes

[1] For more information on Java see http://nl.wikipedia.org/wiki/Programmeertaal_Java, and for more information on J2EE see <http://nl.wikipedia.org/wiki/J2EE>.

[2] For an overview of open source services go to <http://dienstverleners.ososs.nl>.

[3] GNU Lesser General Public License. For more information in open source licenses see <http://licentiewijzer.ososs.nl>.

[4] See <http://www.jboss.org/services/press/j2eecertfinal.pdf>. Geronimo (<http://geronimo.apache.org>) and Jonas (<http://jonas.objectweb.org>), two other open source application servers, have recently indicated they also want to obtain the J2EE-certificate.

[5] See <http://www.ososs.nl/article.jsp?article=10217>.

[6] PHP is an open standard with the status 'recommended' in the catalogue of Dutch open standards (CANOS), see <http://www.ososs.nl/matrix/row.jsp?id=8083&matrix=7422>

[7] SMTP is an open standard with the status 'recommended' in the catalogue of Dutch open standards (CANOS), see <http://www.ososs.nl/matrix/row.jsp?id=7577&matrix=7422>

[8] Research shows that open source mailservers (like Sendmail, Postfix and Exim) have a market share of over 70% (<http://www.ososs.nl/article.jsp?article=8891>

[9] See <http://www.ososs.nl/article.jsp?article=10197>