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WEBSITE DEVELOPMENT PROJECT FOR SETYNOIL OY



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The objective of this thesis project was to design and develop a website for Setynoil Oy, one of the largest oil product packing companies in Nordic countries. Company faced problems with previous website project and their existing site was never fully finished. Need for the website was obvious and contract was made in late December 2011.

First steps of the project were taken in late December 2011 when the first meeting with the client took place. Setynoil Oy CEO had an urgent need for a website in order to provide information for their partners and to promote their businesses online. Client had a half ready website published on the Internet but it was never fully finished and Setynoil Oy CEO wanted the old site to be replaced as soon as possible. Together with the client was agreed that the project will be part of a Bachelor thesis project and that it will be done in a very tight schedule in order to provide the service online rapidly. Deadline was agreed to be at the end of April 2012. That was the time when the first version was to be published.

Process started to run fully in late January 2012 with gathering information together with the client and putting on a paper some of the features they would like to have on their page. Developed site needed to be very simple to use with professional looking layout and an easy navigation. The main characteristic of the site should promote the industry they operate in. Other than that, free hands were given to further develop the site.

This project was developed by using the Agile Methods. It was more convenient than for example the old fashioned Waterfall method and suited well to develop fast and with no specific plan. The Development environment was chosen after scaling different options. As the time was very limited and no budget was included, the solution chosen needed to be an Open Source service. Joomla! was selected from various CMS tools and found out to be a straightforward system to use for developing as well as for client usage.

There was a rather strict timeline for this Project as the client is well-known and their need for functioning website was high. Client gave free hands with the design and structure but required a simplified website with only necessary content.

KEYWORDS:

Website development, cms, open source, joomla, agile methods, ftp, akeeba backup core, multi-lingual

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1 INTRODUCTION

This Bachelor Thesis project was planned and developed in more or less four months. The client company Setynoil Oy was contacted in late December and the offer was made, agreement was made shortly after that. It was clear from the start that their need for a website was urgent and in the very first meeting the most important requirements for the site were recorded and the task started.

Project started to run full-time in late January 2012 and the deadline was agreed to be at the end of April same year. After discussing the project planning and methods available, it was decided to use Agile methods throughout the project. It gave more space to rewrite the original plan and was more convenient for the purpose, where no restrictions were given and developer had free hands to produce content. Nevertheless having close cooperation with the client throughout the project.

Developing tool for this project was Joomla! Content Management System. This utility was chosen since it provides easy to use developer and user facilities. The other advantage was that Joomla! is a free Open Source software that offers all the necessary development tools to create an interactive website.

Development schedule was planned tight as the client required the service to be ready as soon as possible. It was also agreed that the project continues after the publishing date if necessary, with a renewed contract.

In the following chapter, Client Company and their main services are introduced together with the project requirements. Third chapter discusses the Agile Methods in general and lists some pros and cons as well as the purpose in this project. Joomla! and the CMS functionalities are described in the fourth chapter. The last part of the report consist the website development project and the most interesting aspects of it, as well as the challenges that were faced during the process.

2 PRESENTING THE CLIENT COMPANY SETYNOIL OY

Setynoil Oy is a packing company specializing in flammable liquids. They mix, store and pack oils, lubricants, vehicle chemicals and a variety of petrochemical products.

Late 2010 the new plant was established. New factor meets all the requirements to process flammable liquids and chemicals. Processes are authorized by Tukes, Finnish Safety and Chemicals Agency that supervises chemicals safety within Finland (Tukes, 2012). Above that, Setynoil Oy holds an environmental permission to handle hazardous chemicals and their functions are ISO9001 certified.

Setynoil Oy is a family owned company that was founded in year 1973. Factor moved from Laajasalo oil port to Järvenpää industrial area at the end of the year 2010. They employ more or less 6 to 10 people and CEO at the moment is Esa Jarma. (Jarma, 2011)



Picture 1. Setynoil Oy Logo in June 2012

2.1 Locating the Demand

Setynoil Oy laid a claim for a website development project since they wished to be more visible for their present customers and partners. At the era of Internet it is very important for companies and corporations to be available online and present information of business functions; it gives company more trust and quality to be open and share information.

Setynoil Oy started website development project with another developer more or less one year ago but the project was unsuccessful. Client had been looking for someone to continue the unfinished project and that was the start of this thesis project.

Client needed a developer who can setup the site as soon as possible. He agreed to hand over the project for an undergraduate University student in terms of Thesis Commission.

First plan was to continue working with the code that the previous developer had started. That solution was possible but as client required renewing the layout, was decided to drop previous project from the table and start from the scratch with Agile practice and CMS tool.

2.1.1 Project Requirements

As mentioned, the project was started immediately and there was not much time to make a detailed plan for the process. The first requirement therefore was to have a fast moving environment with only necessitate plan that could be updated during the process.

The overall plan contained these requirements:

- Client required an open plan that could be changed at any point, i.e. if the layout was not desirable it was changed
- Simple design with company colors (red, grey and black) and professional looking
- Content Management functionality in order to further develop/update the web content by client himself and other persons if necessary
- Navigation as simple as possible, only necessary menus and no subpages
- Free hands to design the layout and structure the page

- Layout check up with the client whenever needed
- Multi-lingual website with Finnish and English language package
- Client available for phone and email consultation if needed, layout suggestions were shown in meetings
- Content provided by the client, including pictures and texts, translations on developer's responsibility
- Reforming the old logo and photo processing with Adobe Photoshop CS5 and Elements

As seen, there were very few requirements listed beforehand, developing project therefore started with free hands and with an open plan. It was clear that the developed website should be formal and the content simply structured on a professional layout.

3 AGILE METHODS

Agile is a set of development tools that vary in practices. The main idea of the Agile development is to produce and deliver quickly and adapt requested changes rapidly. (Cohen etc. 2003)

It was established to offer more flexible development environment and one of its main purposes is the ability to adapt changes easily and efficiently. One of the most frequently used agile method is SCRUM, although this thesis is not going to analyze any of the methods, only to discuss the agile methods generally, how it is used, its advantages and disadvantages as well as the main characteristics. The following figure represents the basic Agile process.

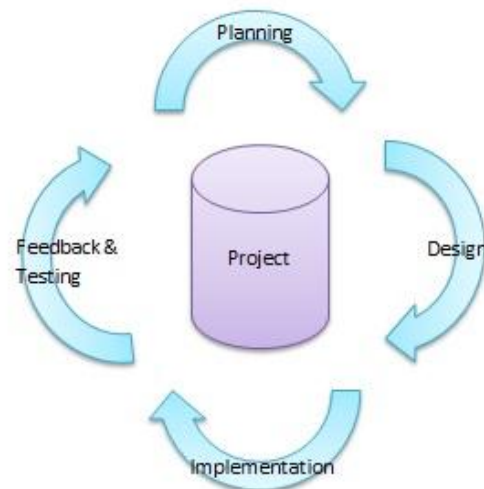


Figure 1. Agile Life Cycle (HSC, 2012)

3.1 Beginning of Agile

Waterfall model, known as a single pass software development methodology, is still used widely in many projects. It is where it all begun years ago. Developers wanted to regenerate and refine Waterfall model and that is when the V-Model,

Rational Unified Process (RUP) and the Spiral Model came to the day light. All of these tools, including the Waterfall, are known as an engineering methodologies. As the business environment changed; there was a need for different approach to development projects. The new environment required that the project life cycle is more flexible than with the traditional methodologies. (Abbas etc. 2008)

Various Agile methods are hardly new but it can be mentioned that it got its main characteristics at the beginning of the 1990`s but got famous in 2001 when the Agile Manifest was established by a group of practicants with background in different development methodologies. They agreed of twelve principles that represent the Agile Software. List can be found from Agile Alliance Site.

3.2 Agile Methods vs. Traditional Development

What are the main differences between Traditional and Agile Methodologies. In general, traditional software development is accounted as heavyweight whereas Agile is very lightweight. What do these characteristics mean. Traditional development includes a lot of documentation and everything runs with strict rules. It requires strong management and hierarchy is from top to bottom. Agile development is more uncontrolled or open-ended. Individuals control themselves and they are let to be more creative in their work, with no strict planning. The purpose of Agile development is to produce running programs or software. (Schlimm, 2011)

3.3 Pros and Cons

What are the benefits of Agile methods and on the other hand, what might be the less efficient aspects of it.

Agile development is very fast moving and it requires good communication and collaboration. The main aim is to develop functionalities fast and with little planning. To be able to develop quickly, it is important to have customer side

attention available all the time to be able to deliver what is needed and accomplish required changes hasty. (Vuorinen, 2010)

Another highlight of the method is the test rate. Product is tested throughout the whole process and by that, the product is fully functioning after every new feature. It also counts at the end as there is no need for time-consuming testing.

Downside may be the lack of documentation and planning but it is also the advantage, but agile methods most certainly won't be successful in every development project. It needs to be well concerned whether to use agile or maybe some of the traditional methods as the Waterfall. In the figure number 2 are listed some of the pro's of Agile development.

Agile development methods offer a lightweight environment with a high capability to adapt rapid changes. It does include planning but the idea is to develop the original plan all the time during the process. As the customer is engaged to the project, it is effortless to deliver a software system that meets the customer needs. (VersionOne, 2012)

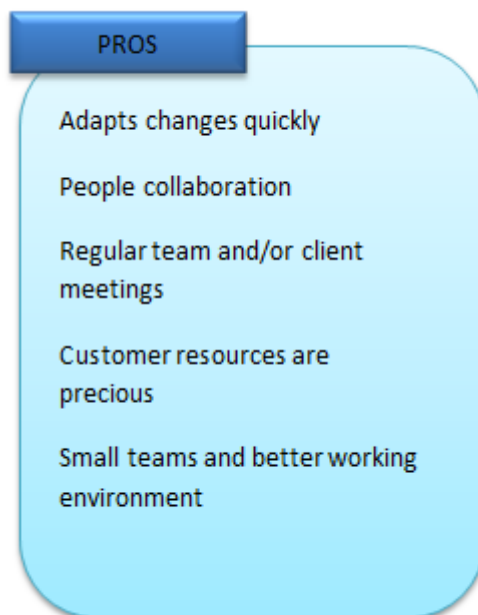


Figure 2. Agile Pros

Agile as well as other development methods do have disadvantages and here are listed few to mention.

Agile method of development requires customer's attention and collaboration at all times. This is most certainly full-time engagement and is very critical in order to deliver the right products.

From the developer point of view it is not desirable to be on a wheel of never ending project. Agile is a flexible developing environment but it needs to see the end as well, this requires strong management as well as a determined customer who knows what is needed.

As mentioned, agile life cycle contains testing during the process, which ensures a high rate of quality. This might as well be a weakness as it requires considerably resources and might be expensive at the end if the project calls for extra time. Some of the most challenging Agile cons are listed in the figure number 3. (Water, 2007)

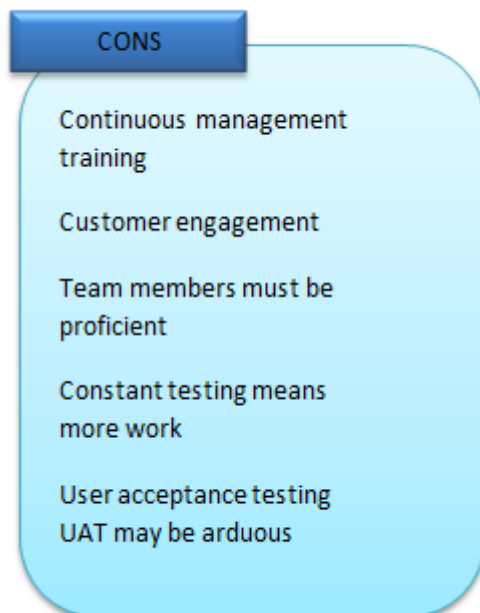


Figure 3. Agile Cons

3.3 Appliance of Agile Methods

Agile Methods were chosen to be the planning solution for the project. It was thought to be more convenient in this case than for example the strict Waterfall development tool. Development process timeline was very tight and therefore fast-moving, it required a very open planning method in order to function effortlessly.

At the beginning of the project client-side mentioned that it is better if it is supplied with flexibility. In the first meeting the basic requirements were listed and meetings scheduled only if phone or email consultation was not enough. Client gave free hands to plan and develop the website; anyhow the client was consulted on every stage to discover if the results were satisfying. This meant that if the developed solution did not satisfy the client, required changes were added to the plan. As Agile Methods allow, quick changes were easily adapted.

Further down on this report, there is a section where the Agile development process is discussed and some of the cases introduced.

4 INTRODUCING JOOMLA! CONTENT MANAGEMENT SYSTEM

Joomla! is a free Content Management System, CMS, development tool that functions fully on Internet environment or on a Local Server. It allows consumers, entrepreneurs and organizations to add content and update it without any complexity.

Joomla! is an Open Source Content Management System that anyone can download free of charge and use without license expenses. Joomla! development environment is suitable for non-technical as well as for advanced users. Installing process is simple and the interface absolutely user friendly. Any previous web development knowledge is not required and after all, anyone is capable to produce fascinating content. Yet more experienced developer can go deep into the code and create even more unique sites. (Joomla c), 2012)

4.1 Content Management System in Use

Content management System is a service that allows a specified user to login to the site's FrontEnd and/or BackEnd. Depending on user's role it is possible to accomplish different kind of tasks. In Joomla! the user accounts are defined through the Administrator account.

The main purpose of CMS is to store data and share it for User usage. That data may in example embody documents, textual content, images or videos. All of the data altogether is stored on a defined database. For example Joomla! is a database-driven software and the installation process includes MySQL database configuration. All of the data processed is stored in to that database. (Wikipedia, 2012)

Herein the terms FrontEnd and BackEnd are explained. Joomla! site Admin or registered Admin can assign User Groups and therefore register users. It allows

Registered Users to login to the service through the FrontEnd and depending on user's level of access; it is possible to modify and/or update some of the content on the website or download document for instance. This comes handy when there are lots of content that needs minor reforming or for example when new articles are to be published. In this case, Registered Users can edit and update the content at any time.

BackEnd serves as a Control Panel for the Administrator(s). In the so called hierarchy it is the highest level of access and therefore accessible by the key persons only, i.e. the developer and/or any other person that is responsible for greater changes on the website, such as Menus or site structure. (Joomla! d), 2011)

4.1.1 Joomla! user Groups

- Registered User
 - ✓ Have the access to the FrontEnd and may only entry different sections of the site, i.e. to download documents that are not visible for normal users.
- Author
 - ✓ May create content but cannot publish before it has been submitted by Publisher level user.
 - ✓ Editing of own articles allowed but only after it has been verified.
- Editor
 - ✓ Has the permit to add and edit any user's content, unpublished as well.
 - ✓ Is not permitted to publish content.
- Publisher
 - ✓ Allowed to publish, edit and create any content

- ✓ Manages the publishing procedure.

These four User Groups (Registered User, Author, Editor and Publisher) can have access only to the FrontEnd of the site. Below are listed Admin Groups that can access the Joomla! BackEnd.

- Manager
 - ✓ Content Management through the site BackEnd.
 - ✓ Publishing, editing and adding of any content as well as Menus
 - ✓ Cannot change the site structure
- Administrator
 - ✓ Carries all the same rights as Manager but may also change the structure of the site, i.e. Modules.
 - ✓ Do not have an access to site's Global Configuration nor edit or add Site Templates.
 - ✓ Allowed to manage Users that are below in the hierarchy.
- Super Administrator
 - ✓ Full Access.
 - ✓ The highest Group in the hierarchy.

For Setynoil usage there were two types of users created, Publisher and Administrator. The Super Admin logins are handed over as well but recommended to be used by a person who has enough knowledge in Joomla! development. More detailed description of Assigning User's will be discussed later. (Joomla! Documentation, 2011)

4.2 Short History of Joomla!

Joomla! was released early September 2005 and since that it has been one of the most commonly used CMS systems all around the globe. The strategy was to build an online Open Source community where as the users hold the power.

Joomla! is based on Mambo Software that is a product of Miro International non-profit foundation. Developers felt that Miro International was violating some of the open source values and therefore decided to start up their own open source development software called Joomla!. The development team then created a forum, OpenSourceMatters.org to share information with everyone interested in that matter.

4.3 Joomla! 2.5.x Technical Requirements

Joomla!, as many other open source content management systems, operates with MySQL database and PHP. There are plenty of different versions that differ in requirements. Although it is convenient to download the latest version if the necessitate compulsions are full filled. Service providers may be consulted in this matter. Figure number 4 stages the requirements for Joomla! Version 2.5.



Figure 4. Joomla! 2.5.x Technical requirements (Joomla a), 2012)

5 THE WEBSITE DEVELOPMENT PROJECT FOR SETYNOIL OY

The project got wind under its wings late 2011 when client was contacted and the idea introduced. Setynoil Oy had an old website which was never finished and was only promoting the upcoming website. Client wanted to have fully functioning website as soon as possible.

The actual developing process started in January 2012 with a meeting and discussing some of the requirements. Client wished for more professional looking and simple to use website with CMS functionality. Different Content Management Systems (CMS) were taken into consideration, such as WordPress and Drupal. Joomla! was chosen because of the wide online support and user friendly FronEnd as well as BackEnd services.

This thesis project included Setynoil logo reforming, photo processing, web development and web content translations.

5.1 Joomla! installation on Remote Host

At first Joomla! was installed locally for testing purposes in any environment without Internet connection, which was not available at all times. This installation method was selected simply for learning purposes only and is not discussed here further. After testing the functionalities locally on test page, it was convenient to install Joomla! on Remote Host.

Joomla! site for Setynoil Oy was installed in a sub-folder on Remote Host (Web Server) on www.setynoil.com/home and the old, unfinished page was left to promote the upcoming website on www.setynoil.com. Before the installation process could start, Joomla! 2.5.1 requirements (figure number 4) were taken into consideration and the server PHP was upgraded to newer version.

First it was worth to go through the old website's files on the web server. Folders were viewable through FTP client, in this case FileZilla. There were folders that included the old site's content; code, images and documents. Index.php file was left alone to have the old site online throughout the development project but the other unnecessary files were copied outside the server and deleted from the root to have a clean development environment and more space available. In the root, Home folder was created for Joomla! installation.

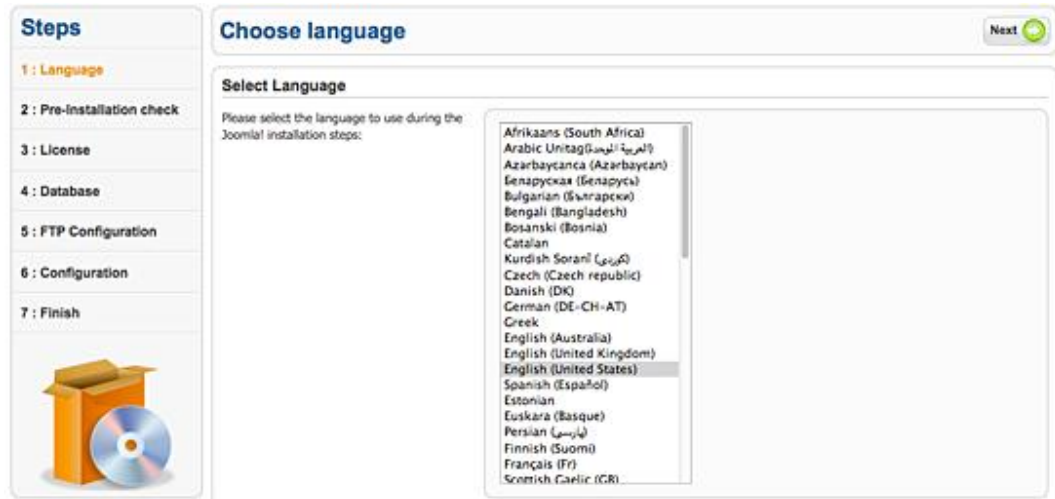
Sub-folder was created to be able to install the Joomla! package beneath the root-folder that still included the old page and was promoting the upcoming new site.

First step was to download the latest Joomla! 2.5.x (2.5.1 at the time) package from the Joomla! Download site. Afterwards the installation package folder was transferred to the server. This transit was executed through the FTP client. The installation folder was transmitted to the newly created Home sub-folder on the server.

Joomla! was installed on Remote Host and therefore was necessary to inspect the service provider's server utilities, do they meet with the Joomla! 2.5.1 requirements, such as PHP, MySQL and Apache. As stated before, the PHP version needed upgrading. Without this upgrade the Installation of the Joomla! version 2.5.1 was not possible. Instructions for this upgrading were received from the service provider.

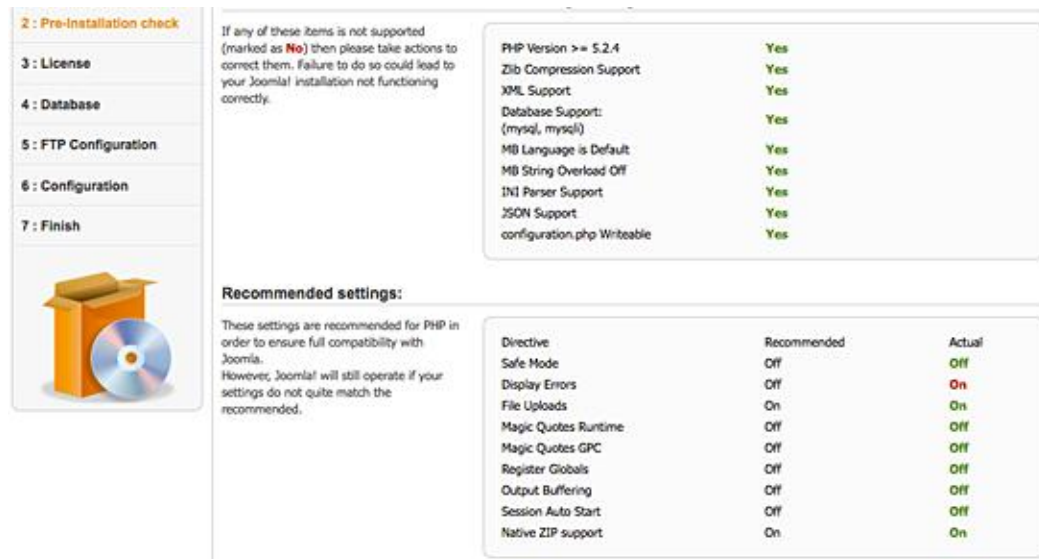
Setup was launched by navigating to the web sub-directory by simply typing the website's URL in to the browser and adding the sub-folder after the slash; www.setynoil.com/home. Installation was started successfully. Underneath the installation process is introduced step-by-step.

First step was to Choose the Language that was to be used during the installation procedure. Joomla! supports the majority of languages as partly seen in the picture number 2.



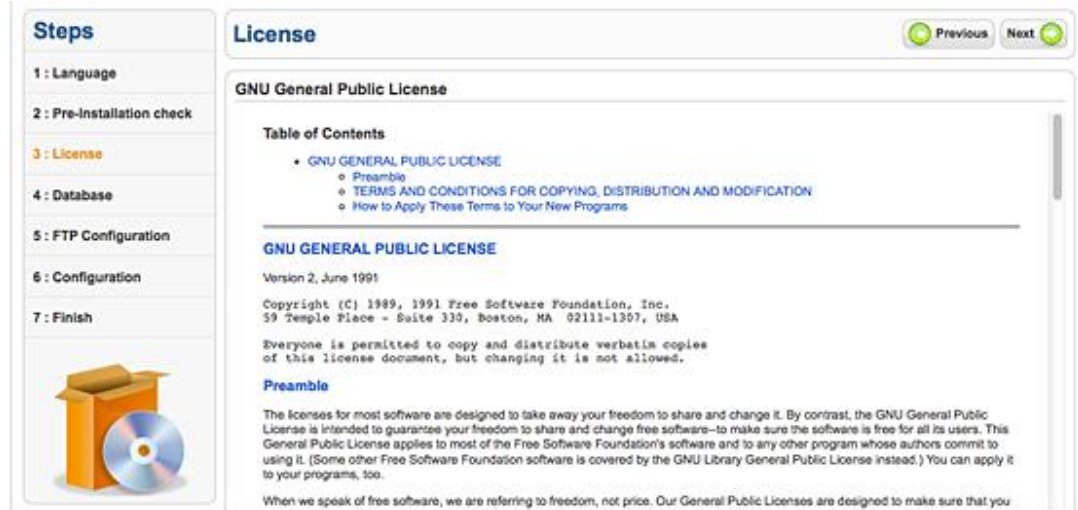
Picture 2. Selecting the Installation language

In the second step the Joomla! service runs a Pre-installation check. This check inspects that the system requirements corresponds on the server. If any divergences are found, an error message will be shown. In this case, no errors occurred (Picture number 3.) and the installation procedure continued normally to the step 3.



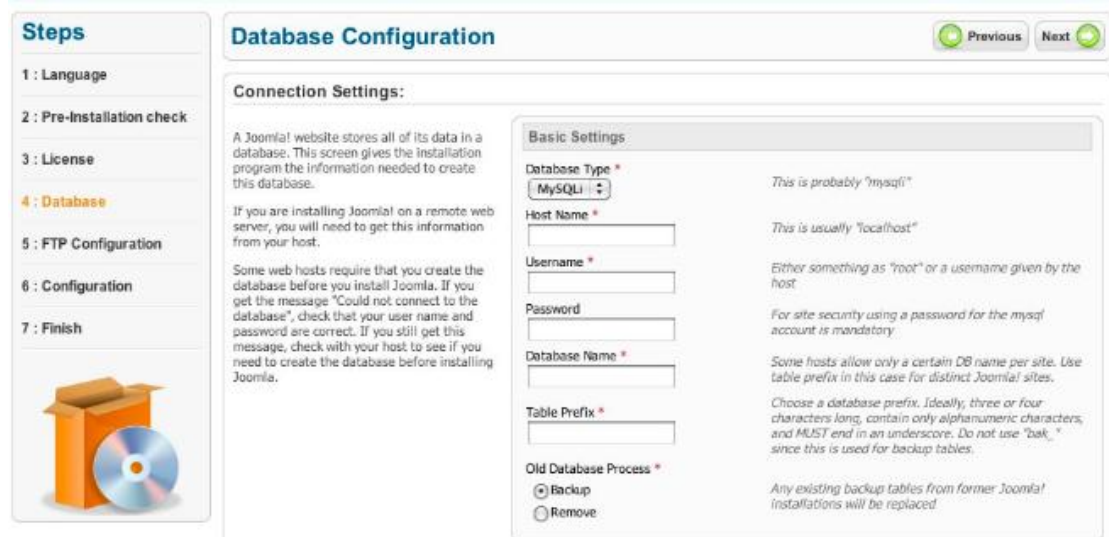
Picture 3. Pre-Installation Check

Third steps is to agree the GNU general Public License that is a free license for software i.e. More about the license can be read from the official GNU page (GNU Operating System, 2012).



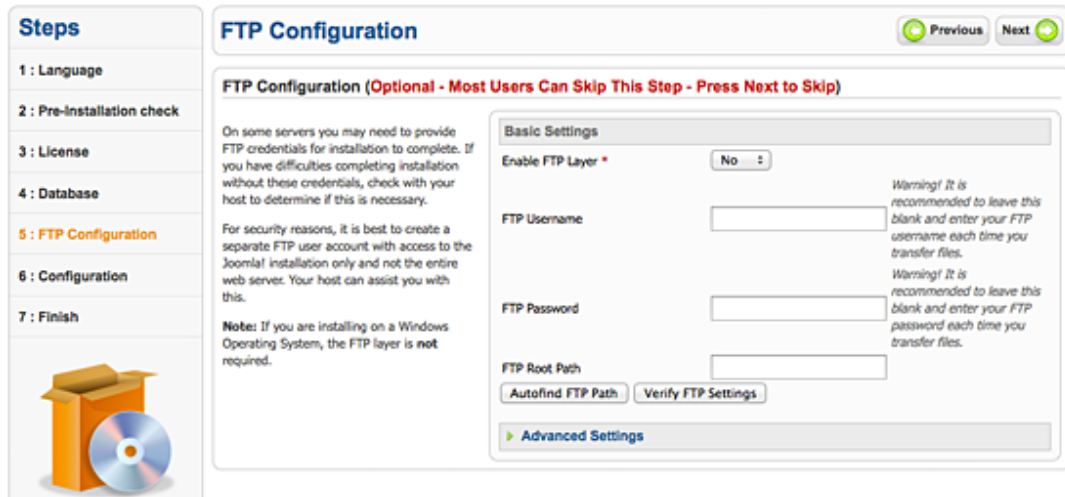
Picture 4. GNU General Public License

In the fourth section the database details were required in order to setup the MySQL database for the Joomla! service. MySQL database passwords etc. were consulted from the service provider who was responsible of the database setup on the server. In the picture number 5 all the required fields are presented.



Picture 5. Database Configuration

Step five is the File Transfer Protocol (FTP) setup. In this section the default settings are kept and therefore no changes needed to be done as shown in the picture number 6.



Steps

- 1 : Language
- 2 : Pre-Installation check
- 3 : License
- 4 : Database
- 5 : **FTP Configuration**
- 6 : Configuration
- 7 : Finish

FTP Configuration Previous Next

FTP Configuration (Optional - Most Users Can Skip This Step - Press Next to Skip)

On some servers you may need to provide FTP credentials for installation to complete. If you have difficulties completing installation without these credentials, check with your host to determine if this is necessary.

For security reasons, it is best to create a separate FTP user account with access to the Joomla! installation only and not the entire web server. Your host can assist you with this.

Note: If you are installing on a Windows Operating System, the FTP layer is **not** required.

Basic Settings

Enable FTP Layer *

FTP Username

FTP Password

FTP Root Path

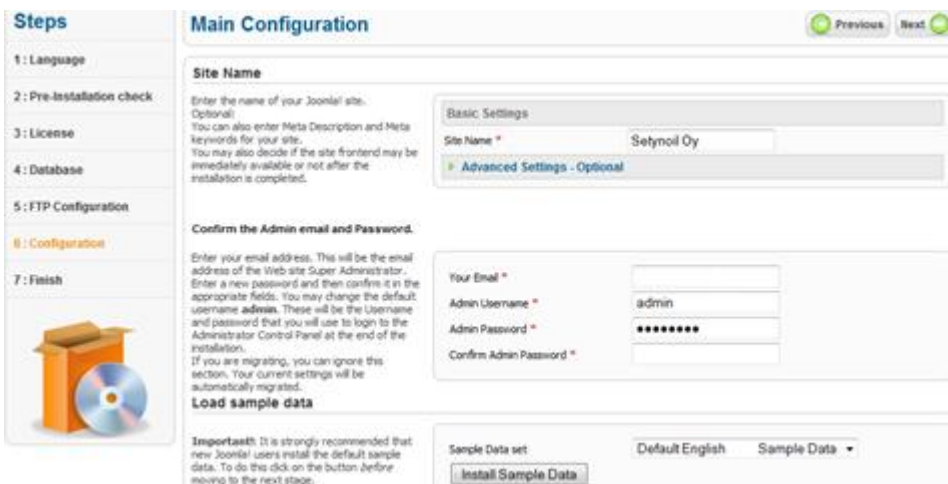
[Advanced Settings](#)

Warning! It is recommended to leave this blank and enter your FTP username each time you transfer files.

Warning! It is recommended to leave this blank and enter your FTP password each time you transfer files.

Picture 6. FTP Configuration

The last step before the installation was completed was to name the site and confirm the Administrator email, username and password. In the Advanced Settings below the Site Name selection it is possible to configure main Metadata and Key Words for the site, referred in the picture number 7. Those details can be changed at any time in Global Configuration by the Administrator.



Steps

- 1 : Language
- 2 : Pre-Installation check
- 3 : License
- 4 : Database
- 5 : FTP Configuration
- 6 : **Configuration**
- 7 : Finish

Main Configuration Previous Next

Site Name

Enter the name of your Joomla! site. (Optional)
You can also enter Meta Description and Meta keywords for your site.
You may also decide if the site frontend may be immediately available or not after the installation is completed.

Basic Settings

Site Name *

[Advanced Settings - Optional](#)

Confirm the Admin email and Password.

Enter your email address. This will be the email address of the Web site Super Administrator.
Enter a new password and then confirm it in the appropriate fields. You may change the default username **admin**. These will be the Username and password that you will use to login to the Administrator Control Panel at the end of the installation.
If you are migrating, you can ignore this section. Your current settings will be automatically migrated.

Your Email *

Admin Username *

Admin Password *

Confirm Admin Password *

Load sample data

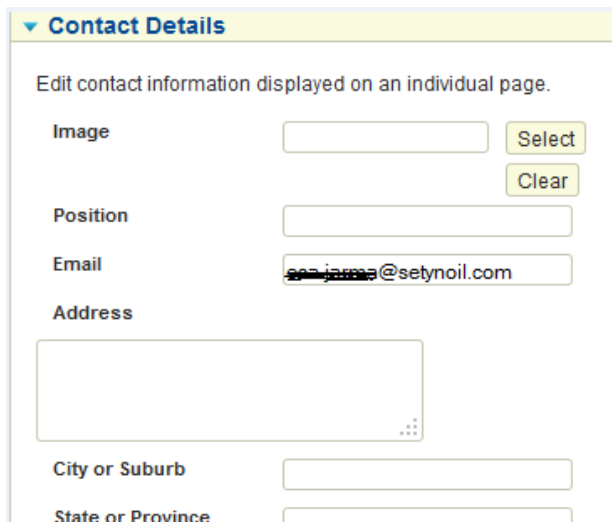
Important! It is strongly recommended that new Joomla! users install the default sample data. To do this click on the button before moving to the next stage.

Sample Data set:

Picture 7. Main Configuration

One more thing worth to mention is that if Contact Forms are to be utilized, it is important the email address hereby corresponds to the same server as the contact detail provided in Contact Form. For Setynoil Oy it meant that email provided in the Main Configuration was supposed to be **support@setynoil.com**

and the Contact Form email was setup to be `firstname.lastname@setynoil.com` as seen in the picture number 8. In case the email address is outside the server, for example hotmail.com, a SMTP setting are needed. Details provided in the picture number 9. All of these configurations can be made later on in Joomla!; Administrator > Global Configuration > Server.



▼ Contact Details

Edit contact information displayed on an individual page.

Image

Position

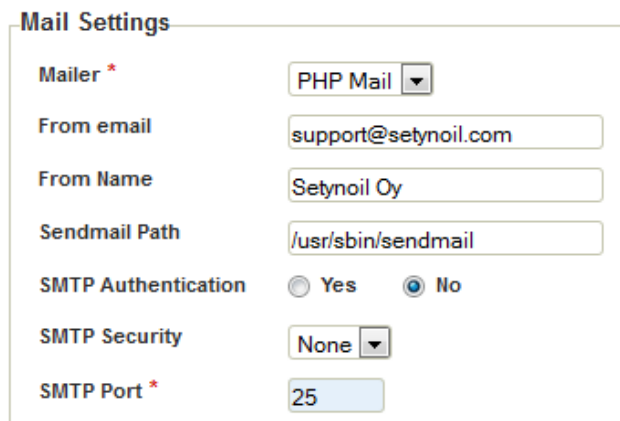
Email

Address

City or Suburb

State or Province

Picture 8. Contact Form Details



Mail Settings

Mailer *

From email

From Name

Sendmail Path

SMTP Authentication Yes No

SMTP Security

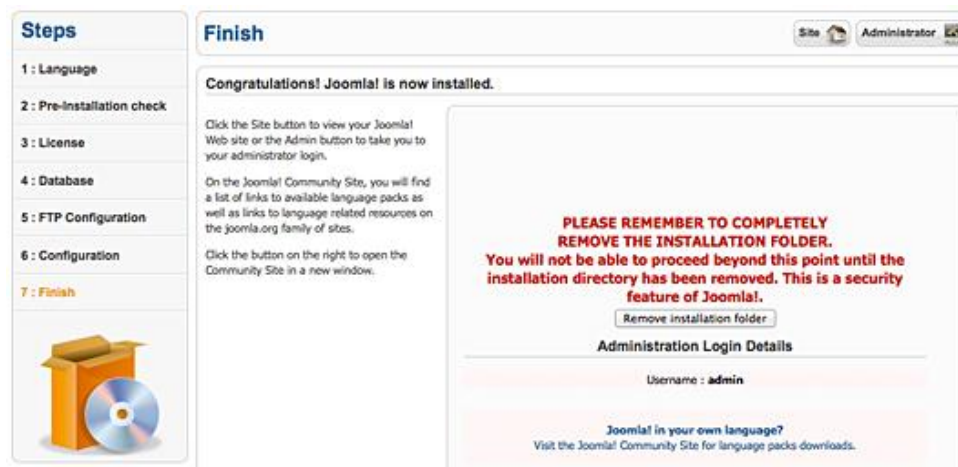
SMTP Port *

Picture 9. Mail Settings in Global Configuration

In the Main Configuration it is possible to select the Sample Data for the Joomla! site but in this case it was not desirable and left uninstalled. It is useful for someone who is not familiar with HTML nor CSS and wishes to have a

ready-made site available. It is also an easy way to learn the service and explore the functionalities.

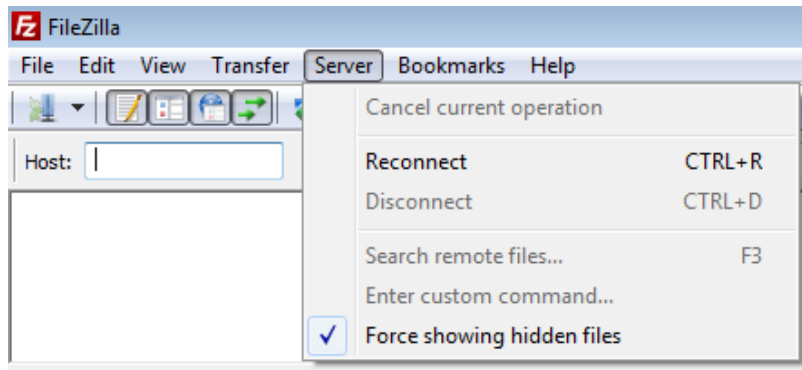
At last, the Joomla! installation is finished but there is still one very important step to take. Just before the installation wizard was closed, it was necessary to remove the Installation Folder. It was simply done by clicking the tab below the red warning text as seen in the picture number 10. This is one of the security features of Joomla! and is highly recommended to be done. (SiteGround, 2012)



Picture 10. Removing the Installation Folder

Joomla! installation was fast and easy, anyhow, there were minor problems that occurred during the remote host installation. One of the issues was the PHP update that was required. Without this update the Joomla! Installation was not possible, as the Joomla! version 2.5.1 required newer PHP.

Service provider offered detailed instructions how to accomplish that. On the server, some changes were required on the configuration.php file. Changes were done but somehow the .php file did not save itself on the server. Support was requested and different solutions tried. At the end the problem occurred in the FTP client, one of the settings box was unticked and due to that all of the files were not shown, referred in the picture number 11. After this minor modification the old .php file was removed and new one copied to the server with newer PHP installation code and after that the Joomla! installation was successfully started.



Picture 11. Viewing Files with FTP Client

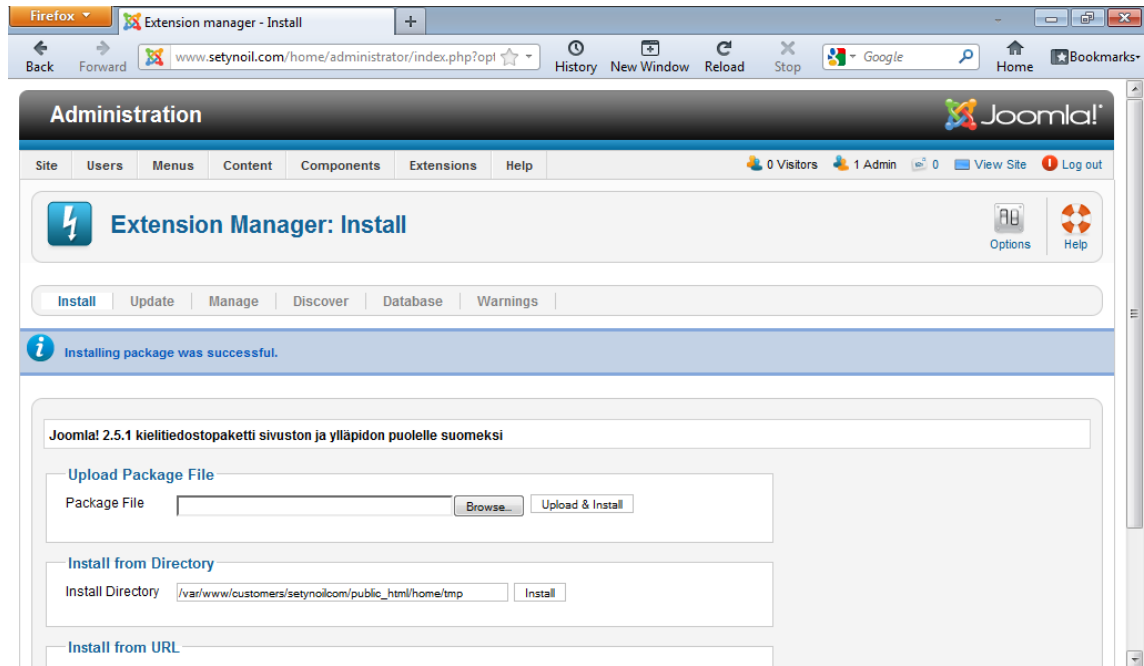
When the installation was done, Joomla! site was logged in with Admin user details and the development project started. Template chosen was Beez20.

This thesis report won't discuss simple layout changes in Joomla! templates as there are thousands of different ways to develop and style. Nevertheless, the most challenging facts will be introduced and solutions provided.

5.2 How to Develop a Multi-lingual Website

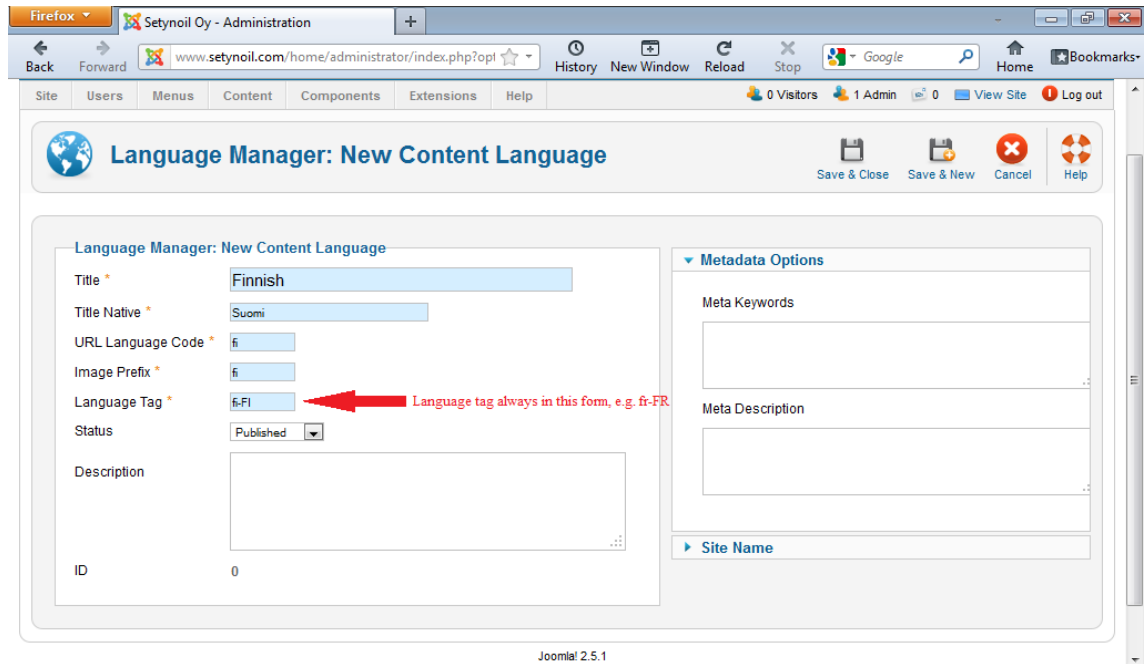
Joomla! includes additional language extensions for multi-language purposes. Customer wanted to add English package in order to promote their services to international customers as well.

Joomla! was installed in English and in order to have Finnish site as well, language extension needed. All of the installed languages are available on FrontEnd as well as on the BackEnd. After downloading FI language package it was uploaded in Joomla! through Extension Manager as referred in the picture number 12. Joomla! extension can be found from the Joomla! Extension Directory.



Picture 12. Joomla! Extension Manager

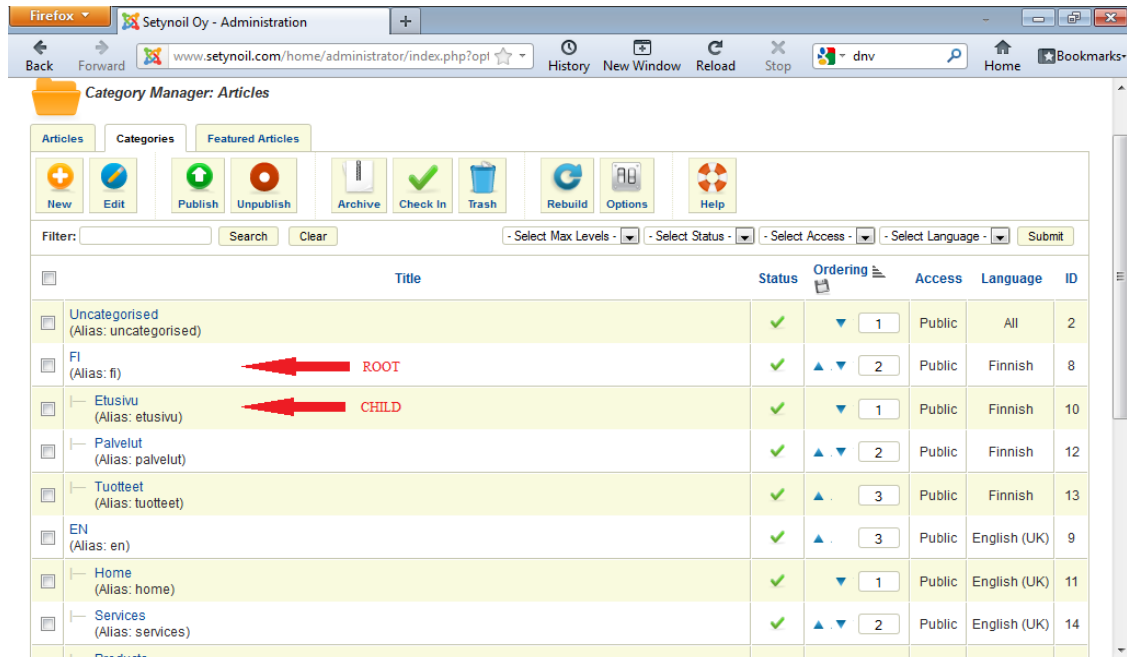
After installation new Content Language needed was added in to the system. This was done under Language Manager: Content. After adding all necessary fields and saving, Finnish content language was available all over the Joomla! service, customer side as well as the maintenance side. In order to have the language package fully installed, it is important to pay attention to the way it is added in the Language Manager. As seen in the next picture, it is crucial to add the correct URL code, prefix and tag. All of this information can be found from Joomla! Help.



Picture 13. Joomla! Language Manager

In case of multi-lingual site, content structure should be updated at this point in order to have easy navigation and to avoid 404 errors. It is necessary to add new Menus for each Content Language and leave the Main Menu for content that is published on all sites. In this case the Main Menu is unpublished in Module Manager in order to have two different sites for two languages and each language has own Default Page and it makes the Main Menu unnecessary.

When creating well-organized structure, it is recommended to create categories for each Content Language. In Category Manager the ROOT directories are included and use of CHILD directories is recommended as it makes the content adding much more structured. For example, when adding new articles, the article goes under certain language category and inside of specified CHILD root as represented in the picture number 14.



Picture 14. Joomla! Organizing Menus and Menu Items

The idea is to have specified Menu for each language and the Menu Item lists all the content pages i.e. Home or Contacts. All of the Articles are assigned to a specified Menu Item and Articles are organized in categories. Each Article is assigned to a specific Menu as well as to a corresponding Article Category. At last the correct language is chosen from the drop-down menu as seen in the picture number 15. This way content is well structured and adding new content is effortless for new users.

The screenshot shows a web application interface for configuring menu items. The 'Details' section on the left contains the following fields:

- Menu Item Type: Category Blog (with a 'Select' button)
- Menu Title: Company
- Alias: company
- Note: (empty)
- Link: index.php?option=com_content&view=category&
- Status: Published
- Access: Public
- Menu Location: Main Menu EN (indicated by a red arrow labeled 'Menu Location')
- Parent Item: Menu Item Root
- Ordering: Company
- Target Window: Parent
- Default Page: No Yes
- Language: English (UK) (indicated by a red arrow labeled 'Selecting the correct Language')
- Template Style: (dropdown)
- ID: (empty)

On the right, the 'Required Settings' section includes:

- Choose a category: - Company (indicated by a red arrow labeled 'Article Category')
- Category Options
- Blog Layout Options
- Article Options
- Integration Options
- Link Type Options
- Page Display Options
- Metadata Options
- Module Assignment for this Menu Item

Picture 15. Adding Multi-Lingual Articles

One of the Menu's in each contact language should be assigned as the Default page for that language. In this case there are two languages Finnish and English, which means that for both languages there will be one Default page with an article assigned to it, details in the following picture.

The screenshot shows the 'Details' form for a 'Single Article'. The 'Default Page' section is highlighted with a red box, showing the 'Yes' radio button selected. The form includes the following fields:

- Menu Item Type: Single Article (with a 'Select' button)
- Menu Title: Main Menu
- Alias: main-menu
- Note: (empty)
- Link: index.php?option=com_content&view=article&id=
- Status: Published
- Access: Public
- Menu Location: Main Menu EN
- Parent Item: Menu Item Root
- Ordering: Main Menu
- Target Window: Parent
- Default Page: No Yes
- Language: English (UK)
- Template Style: - Use Default -
- ID: 103

On the right, the 'Required Settings' section includes:

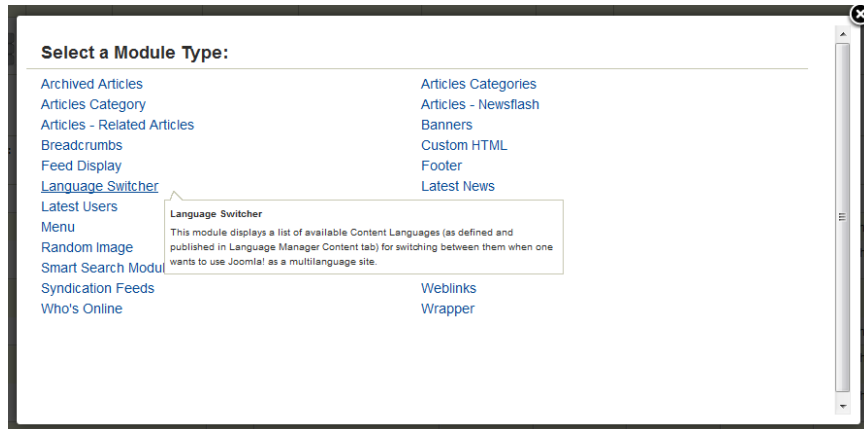
- Select Article: Welcome - Setynoll Oy (with a 'Select / Change' button)
- Article Options
- Link Type Options
- Page Display Options
- Metadata Options
- Module Assignment for this Menu Item

Picture 16. Assigning the Default Page

At this point it was convenient to have the language Switcher added to page. Multi-lingual content was created and published online but the Language

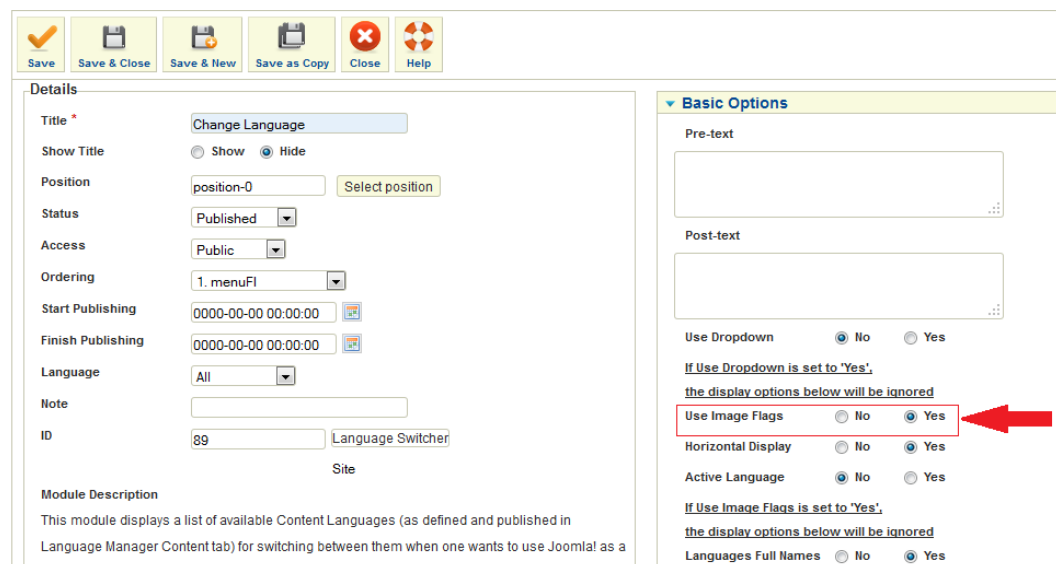
Switcher was still missing and it was not possible to change over from other Default Language page to another. Next steps will lead through the setup.

First step was to create a Language Switcher Module in Module Manager.



Picture 17. Selecting the Language Switcher Module

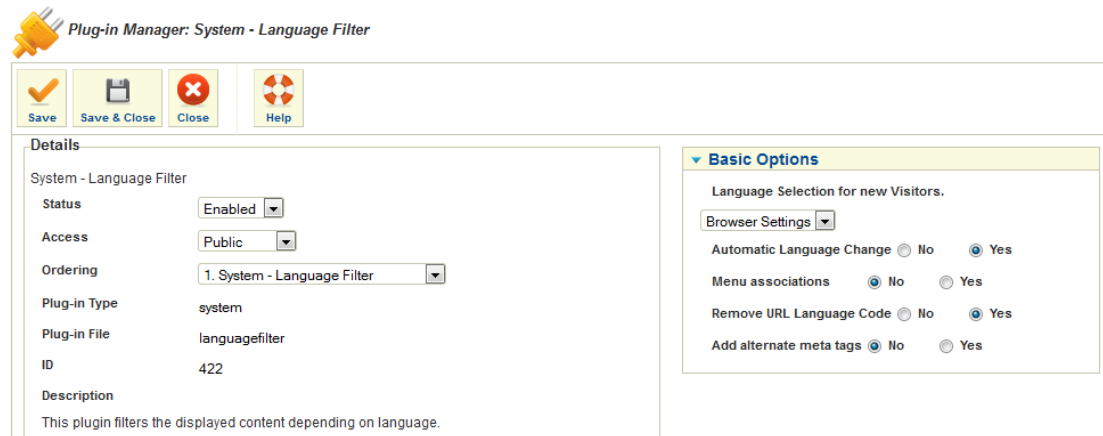
There are different options for displaying the Language Switcher but for Setynoil Oy site a simple Flag icon was enough so only one switcher was necessary. The following picture presents the Language Switcher Module setup.



Picture 18. Language Switcher Module Setup

Module was successfully installed and published. Nonetheless, one more step was required so that the multi-lingual functionality would be operating fully.

System – Language Filter Plug-in for this purpose was to be activated. Plug-in Manager is located under the Extension directory. There are considerably a lot of Plug-in's so the easiest way to locate the correct one is by Filtering the content. System – Language Filter Plug-in was enabled and necessary altimeters selected. Picture number 19 states the procedure.

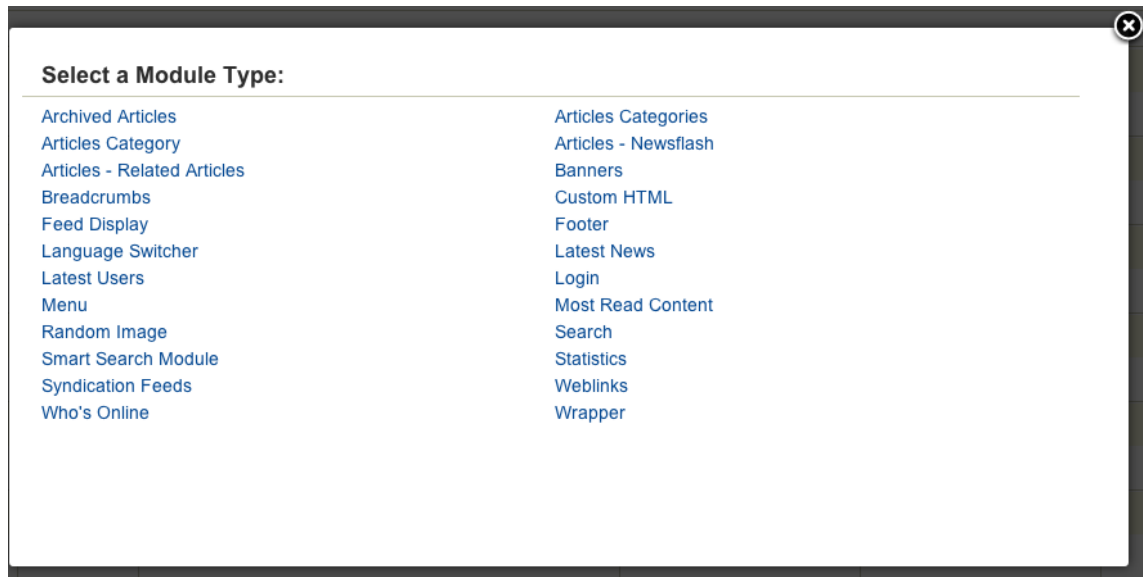


Picture 19. System – Language Filter Plug-in

All of these steps above were taken in order to have entirely well operating Multi-lingual website. Organizing content may be time consuming but it is worth it as it makes the labeling easier later on. (Joomla! help, 2010)

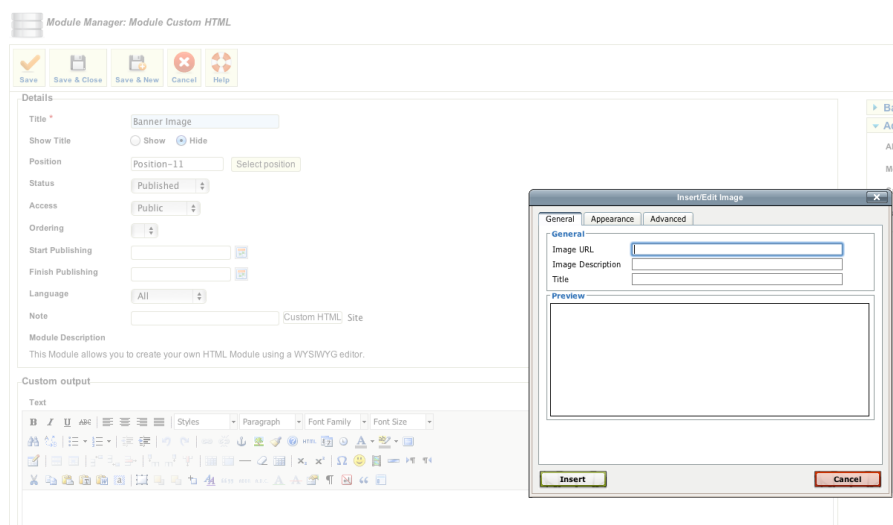
5.3 Positioning the Content

In this case, articles are the main content of the site and they are positioned as default on Beez 20 template. It is possible to change and add positions to any of the templates but articles were left to be published in original positions. After all, any other content, i.e. Custom HTML, Images, Contact Forms are not visible on the website before Modules are assigned to them. There are different types of modules available for various data. In the picture number 20 are listed the different types of Joomla! Modules. Furthermore, it is possible to create new positions in template CSS files.



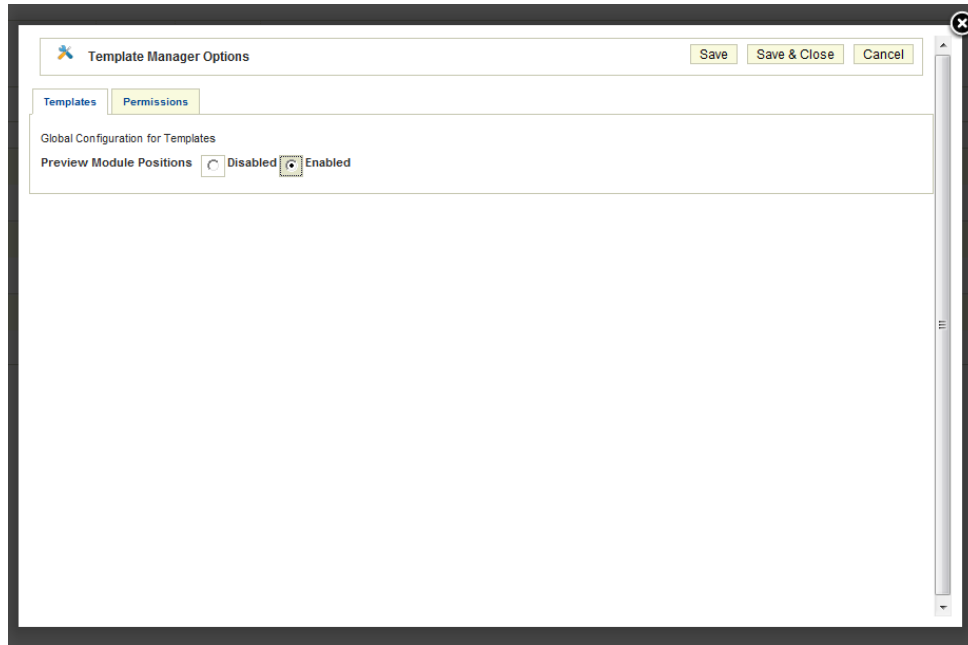
Picture 20. Module Selection

For example, when an image is wished to be shown on the website, developer should select etc. Custom HTML option from the Module catalog to set up a certain position for the desired image. Although it is good to remember that any content to be positioned needs to be created in Joomla! or downloaded to the server. In example, if an image banner needs to be positioned, the banner image is downloaded to the Media Manager in Joomla! and then it is assigned to the Module. Picture number 21 brings forth the assignment of an image in Custom HTML Module.



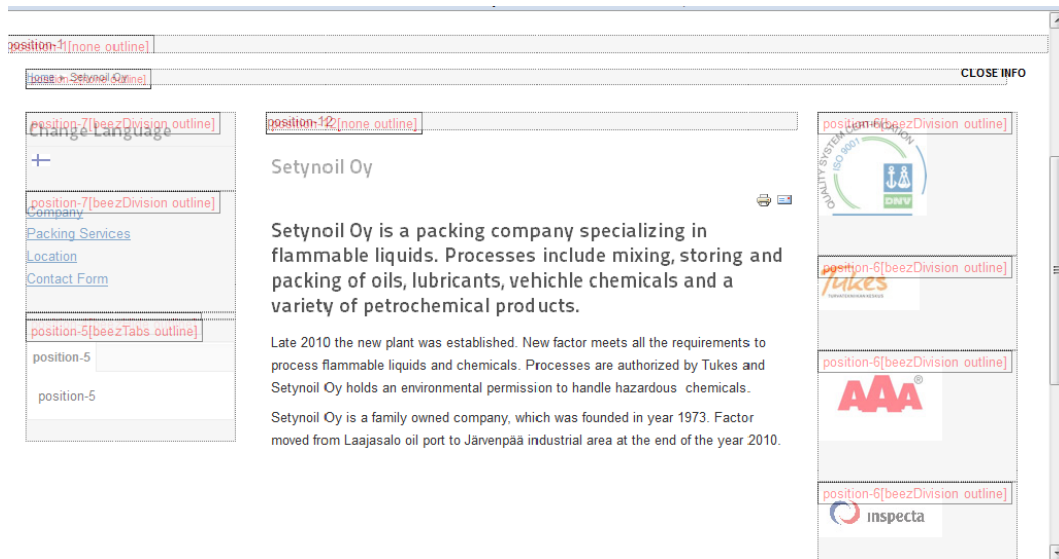
Picture 21. Assigning Content Image in Custom HTML Module

How to view the Module Positions. In the Template Manager option the positions can be enabled to view them on the Joomla! site that has been created. Picture number 22 presents the setup.



Picture 22. Joomla! Module Preview Enabled

To view the positions in the browser, '?tp=1' is added at the end of the URL of the current site and refreshed. As seen in the picture number 23, the positions are available in the browser view. (Complete, concrete, concise, 2011)



Picture 23. Joomla! Browser Module Preview

5.4 Site Structure and Layout

Client required a simple site with easy navigation. There were few sites that acted as a guideline when positioning the logo and pictures. Client demanded for professional looking website without any fancy styling and unnecessary content.

Structuring started by creating the Menu Tabs and after that it was easy to organize the content. Client sent the materials by email and the developer made the structure and added all of the content.

Navigation was made very simple, there are no subpages under modules and none of the modules holds subpages. Yet there will be links added to link between the content. In the figure number 5, introduction of the Setynoil Oy site structure and navigation.

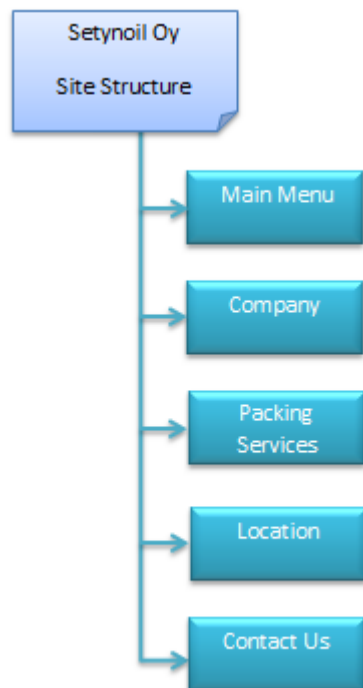


Figure 5. Setynoil Oy Site Structure

When the site was published and all of the content was well organized for both languages, an error occurred. There was a problem with the navigation when entering the page. Structure was thought to be organized in a way that when typing www.setynoil.com, the FI prompted as it was supposed to be the default site. This was not the case after all and the viewer of the site was automatically redirected to the EN page. After going through various discussions online, no solutions were found and investigation started.

The problem occurred in Language Manager where EN was by mistake left to be the default language for the Installed Site. After changing the default to FI the site redirected to the finish site as planned.

During the structuring and adding the layout few challenges were faced. There were not as much pictures available from the client side as wished. That affected the layout quit a bit. The content looked empty and the page did not look interesting. Client did not have time to consider the textual content as much as was necessary from the developer point of view. Article blocks contained little text and that made the site look even blanker. Layout needed reorganizing

in order to have more interesting site with less content. Client mentioned that more content would be added on later stage.

At the end of the project the Content Language was setup to be Finnish on the Administrative level as well.

5.5 Reforming the URL

Referring to the picture number 24, by default the Language Filter Extension Plug-In adds the country code at the end of the URL. It was not desirable to have country code on the default language pages, in this case FI.



Picture 24. Default URL Structure for Multi-Lingual Pages

To remove the country code, some changes needed to be done in the Language Filter Plug In (Extensions – Plug-In Manager – Language Filter). In Basic Options 'Remove URL Language Code' was setup to be 'No'. Formatting is shown in the picture number 25.



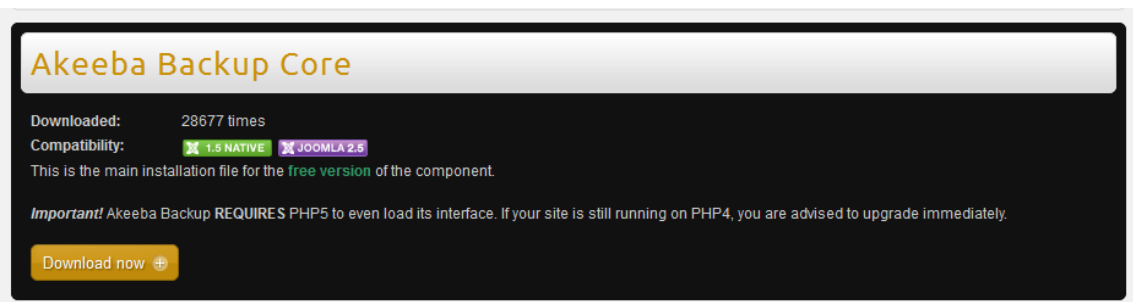
Picture 25. Removing URL Language Code

After the change, the default page URL is in form www.setynoil.com instead of www.setynoil.com/fi. On the EN site the country code was left to be visible as it is not the default language.

5.6 Backing Up and Transferring Joomla! Site from Sub Folder

Setynoil Oy site was created in subfolder under the public_html. Old site was left online to promote the upcoming site. Late April the site was in condition that it could be published. Plenty of tutorials were explored to learn how to safely transfer the site to the root folder (public_html) from the development environment in 'Home' sub folder.

It was clear that when transferring big amount of data from folder to folder on server, the loss of data may be possible. As everyone knows, it is must to have backups in case of loosing data. The Akeeba Backup Core was chosen as it seemed to be the easiest and safest solution to backup and transfer the Joomla! site. Akeeba Backup Core Extension for Joomla! 2.5 was installed.

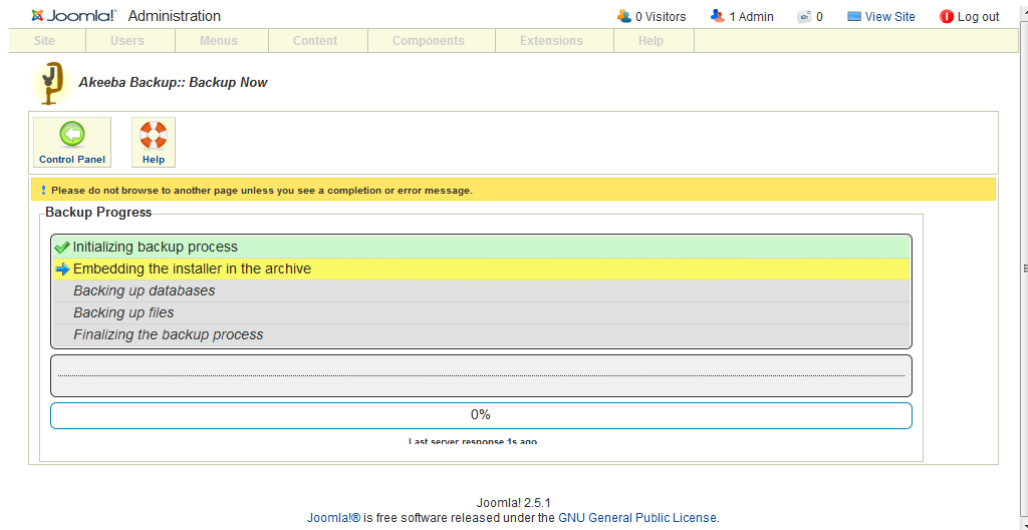


Picture 26. Akeeba BackUp Core Extension for Joomla! 2.5

The public.html root folder needed cleaning up in order to have clean surface for the new site. Old site's files were removed through FTP Client (FileZilla), although all of the old data was copied and stored in case there is information needed later on.

Akeeba BackUp Core Extension was downloaded from the Joomla! Extension Directory. It ensures fast and a very simple site backup. All of the files and folders are securely stored in a single archive and even if there is a major data lose, it is possible to setup the whole site again with all of the restored data and install the page again in no time.

After installation the second step was to create backup with the new extension. Akeeba Backup Core extension manager can be found on Admin view in Control Panel. Picture number 27, backing up process in progress.

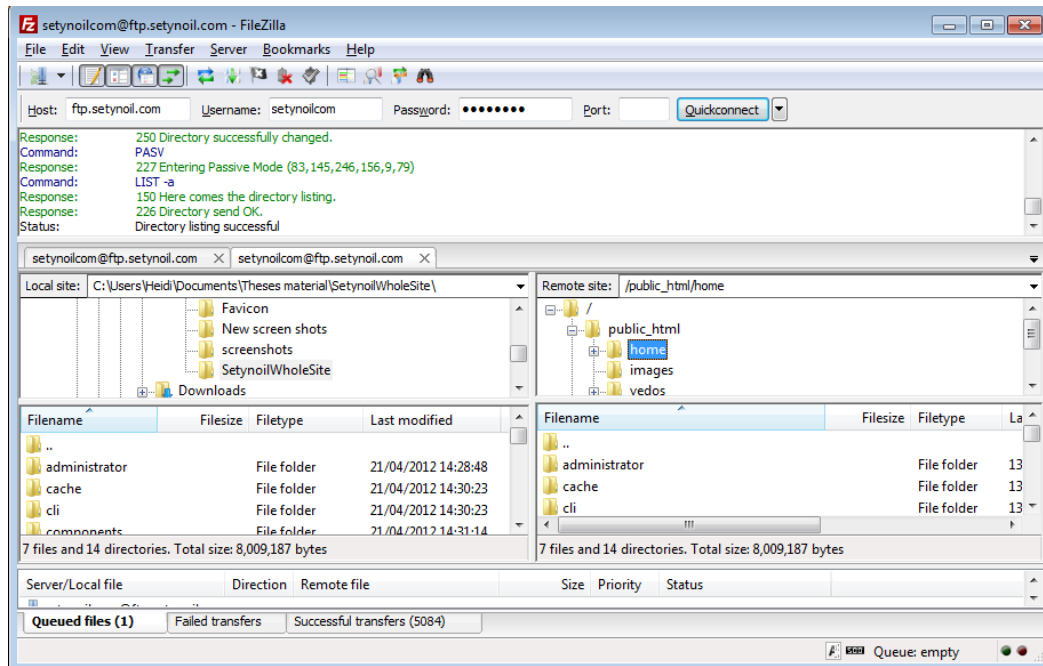


Picture 27. Akeeba BackUp Process on Joomla! Site

Akeeba Backup Core extension was mentioned as a safe and simple way to transfer the site between folders. It was the first choice but it seemed very time consuming after all. Akeeba Backup Core extension was downloaded nonetheless as it offers an easy way of taking backups of the website.

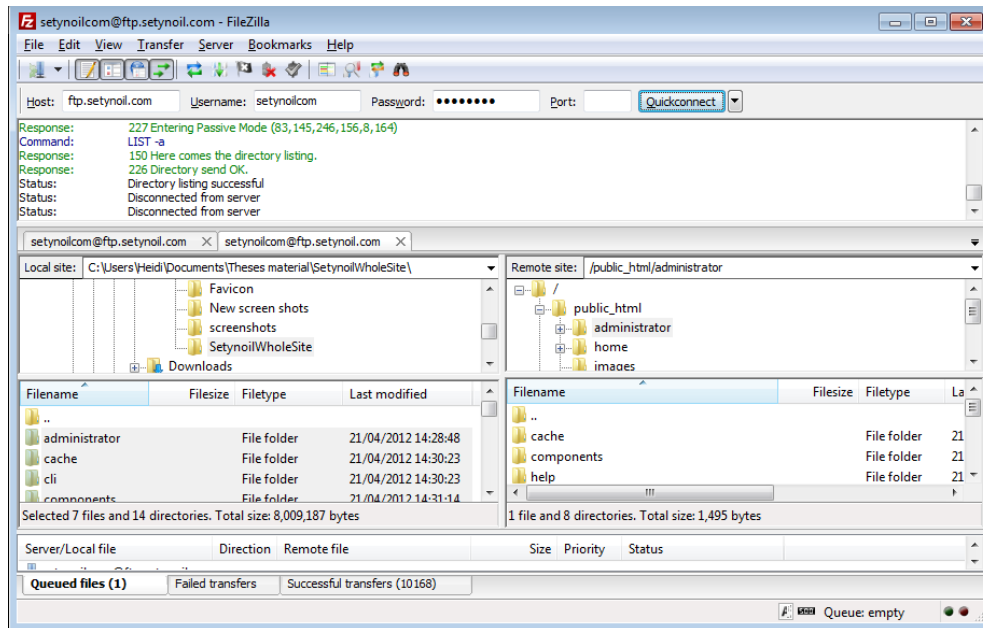
After comparing other safe options for file transfer, it occurred that a simple FTP client transfer could be easy and safe enough solution as the time was running and the website was supposed to be online in few days anyways. In any case, a backup was taken with Akeeba Backup Core if anything was about to go wrong while transferring.

First step was to login to the server via FTP client tool and locate the lower directory folder where the existing Joomla! site was developed, 'Home'. The transfer was made simply by copying the lower directory folder to a temporary location on a laptop and after that, transferring back to the server to the higher level directory, in public_html. In the picture number 28 the lower level directory is highlighted and ready to be copied in to a temporary folder, 'SetynoiIWholeSite'.



Picture 28. Transferring Joomla! via FTP Client

After the lower directory 'Home' folder, that included the whole site, was transferred to the computer, all the files inside of it were uploaded to the public_html root folder. Uploading created an 'Administration' folder to the root as shown in the upcoming picture. It now contains the site and the new URL is www.setynoil.com. Administrator side was also changed to be www.setynoil.com/administrator rather than the old www.setynoil.com/home/administrator. (Joomla! Documentation, 2012)



Picture 29. Joomla! Site on its New Location

5.7 Developing with Agile Methods

There were plenty of customizing done and even the smallest change may have taken considerably a lot of resources. In example, the site banner needed customizing to promote the industry. Plenty of different versions were introduced to the client whereas the best was chosen. First banner versions were designed in January when the development started. First versions were very basic. At every stage, results were introduced to the client. Discussions were managed by email or on phone. Herein is couple of banner versions that were designed throughout the project, picture number 30, 31, 32 and 33.



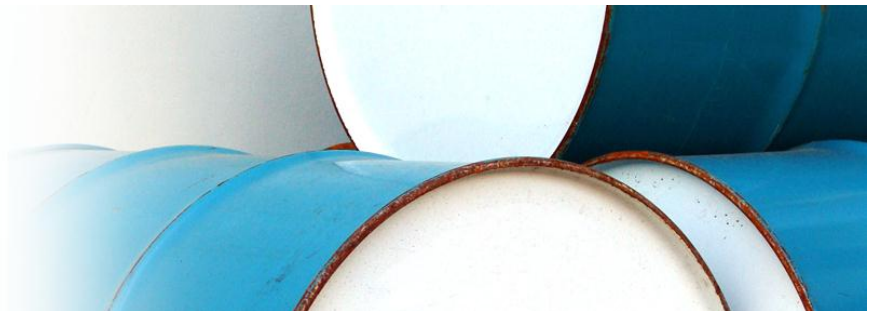
Picture 30. Banner Version a, Logo With Elements and Space for Textual Content

SETYNOIL OY

Picture 31. Banner Version b, Company Name Without Logo



Picture 32. Banner Version c, Factory Images Without Logo

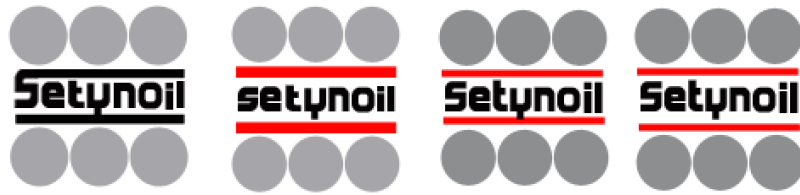


Picture 33. Banner Version d, Without Logo, Published in May 2012

Banners are not in any specific order and are mainly sketch versions. Developing environment was very Agile and fast moving. All versions were presented to the client and he had the opportunity to see where the project was driven and provide his opinion on that substance.

As mentioned before, the company logo needed some retouching and it required quite amount of time as well. The first idea was to design completely new logo and few sketches were designed. Thereafter, client decided that the old logo was kept but it needed reshaping. The main structure and was kept but the colors and arrangement was renewed. Plenty of versions were generated

and all of them were discussed with the client. Behold couple of the newest designs.



Picture 34. Logo Sketches in May/June 2012

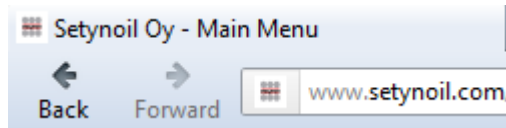
Even though the website has been already published, lots of changes and updates are still current. For example, logo reformatting is still in progress.

Some of the elements, such as Custom HTML Modules and the Logo needed repositioning regarding to client's wishes. In example, client wanted to rearrange the logo position. As default on Joomla! Beez20 template it is part of the Site Banner element. This case required some research in how to change the logo position to be above the Menu Bar. Repositioning was done by changing the code as there are only template specified positions available and none of them were positioned as wished. All of the changes mentioned above were executed in Joomla! Template files, such as personal.css and positions.css. Various positions were applied and results presented by sending screens shots of the site or by general meeting.

Some very basic formatting was applied as well to make the more unique. For the purpose, fonts for each Menu were changed from upper-case to lower-case to make the site look more professional. Some of the font colors needed modifying likewise. Client prompted that it is very important to have an employee email login in the lower footer. Email login was setup by using the Custom HTML element.

This project involved photo processing with Photoshop CS5 and Elements. All of the images were processed before downloading to the server. Images included; banners, logos and custom images.

Joomla! default Favicon (Favorite Icon) needed a replacement. Favicon or Favorite Icon is a site specific, usually 16x16 sized icon, company's logo for instance. Web browsers that support such a function, displays the Favicon up in the address bar (next to URL), picture 35 (Wikipedia, 2012).



Picture 35. Customized Favicon

Favicon was generated through an online service and after that the original favicon file was replaced with the customized one. Favicon.ico file was downloaded through the FTP client and replaced with the default one. Favicon.ico file is located in the htdocs folder > templates > beez20 (or any other template). Use of favicons is very common nowadays and it makes the website more unique, even though it is a tiny change.

All of these minor changes creates a more unique website and is worth of spending time to learn how to adapt them. Entirely, when calculating the time spent, these minor reformations deprived most of the time used. Certainly the learning of Joomla! procedures were time consuming like wise.

5.8 Registering Users

As mentioned, the aim of the CMS function is to have different type of registered users who may access the website's FrontEnd and/or BackEnd through a login.

For Setynoil Oy's usage, there were two type of users assigned. These persons will be trained to manage tasks that they are allowed to accomplish. Instruction documents will be created subsequently. Files will be added to the FrontEnd of the site where assigned users can download them.

It is precious to have the site updated occasionally and for that reason one of the users will be managing the content through the FrontEnd. This user was

added to the Publisher Group. Publisher will have the highest access level on the FrontEnd side and can edit, add and publish content.

User was added via BackEnd of Joomla! by Super User. Account Details were added in User Manager and the procedure was very simple. Unique logins are created for each user and it is important to type the correct email as it is the only way user can receive forgotten password and system emails as well if assigned.

As seen in the picture number 36, all necessary fields were filled and in the Basic Options it was possible to change the language and editor for each user.

User Manager: Add New User

Save Save & Close Save & New Cancel Help

Account Details

Name * PersonA

Login Name * Publisher

Password

Confirm Password

Email * persona@setynoil.com

Registration Date

Last Visit Date

Receive System emails No Yes

Block this User No Yes

ID 0

Basic Settings

Backend Template Style - Use Default -

Backend Language - Use Default -

Frontend Language - Use Default -

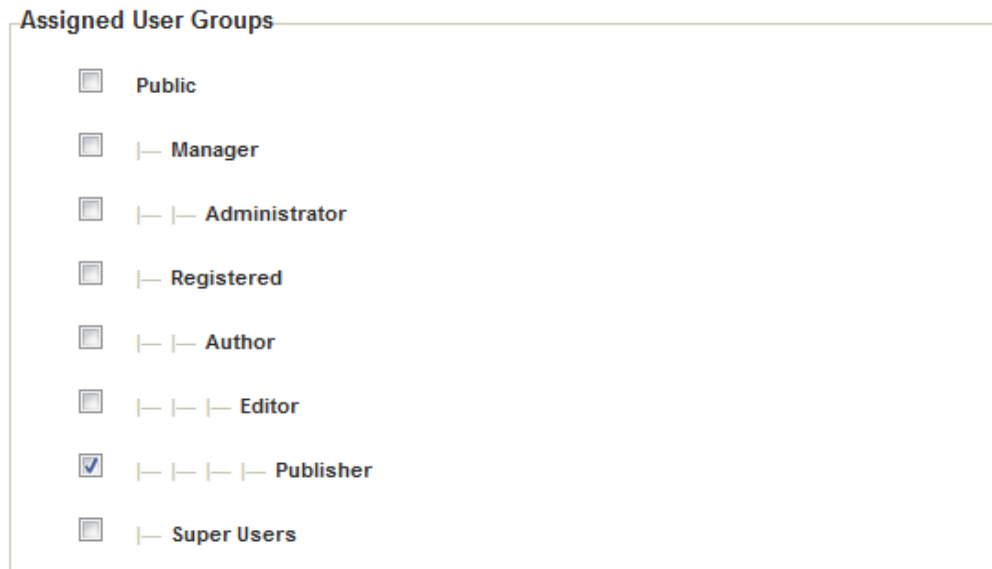
Editor - Use Default -

Help Site - Use Default -

Time Zone - Use Default -

Picture 36. Creating Users

After login details were created, the User Group for the PersonA was selected. In the section underneath the Account Details the Publisher Group was selected as the access level for this user, picture number 37.



Picture 37. Selecting User Groups

Administrator level User was created as well in order to have a person managing User Accounts and to modify Modules and other components if necessary. However, Administrator cannot change Site Templates or access the Global Configuration section. If major changes are required on the site structure, Super User logins can be handed over to a person who can manage the Joomla! development.

Administrator account details were added and the User Group selected. It is on Developers responsibility to instruct new users and offer support. Training will be arranged later this summer and necessary documents created as well.

Usually the user login form is published as an element on the website. However, Client did not want to have the User Login visible for visitors and it is organized via an external link that has been sent to user's email. Login is reached by adding the default URL section to sites own URL: `index.php?option=com_users&view=login`.

CONCLUSION

Eventually the website was published before the scheduled deadline at the end of April 2012. Project flow was good and no major problems occurred. Site functioned well from the beginning.

One of the greatest challenges faced was when the site was published. For the first time client-side proposed it for other key persons and they were not satisfied. Considerable amount of changes were required and lots of work was done to full fill their demand.

Project was supposed come to an end in late April but together with the client was agreed that further changes will be on developer's responsibility with a comprehensive compensation. Site therefore won't be handed over at this stage and the training for site maintaining will be scheduled to be later this year.

Project timetable was tight and the highest pressure was faced after publishing the first version. It took a while to adapt all of the changes that were required and therefore the writing process was left aside for a bit.

In the future a product catalog will be added to the website and the content images are to be changed to more professional looking. Some textual content will be added as well to better promote Setynoil Oy services in whole.

Process was very educational. It was very important to smartly manage the time and organize all of the tasks in a way that the process flow was productive. Plenty of collaboration and communication skills were learnt during this project and the importance of confidence was highly crucial. One of the most fundamental lessons that were learnt was the ability to handle feedback open-minded and not to feel offensive.

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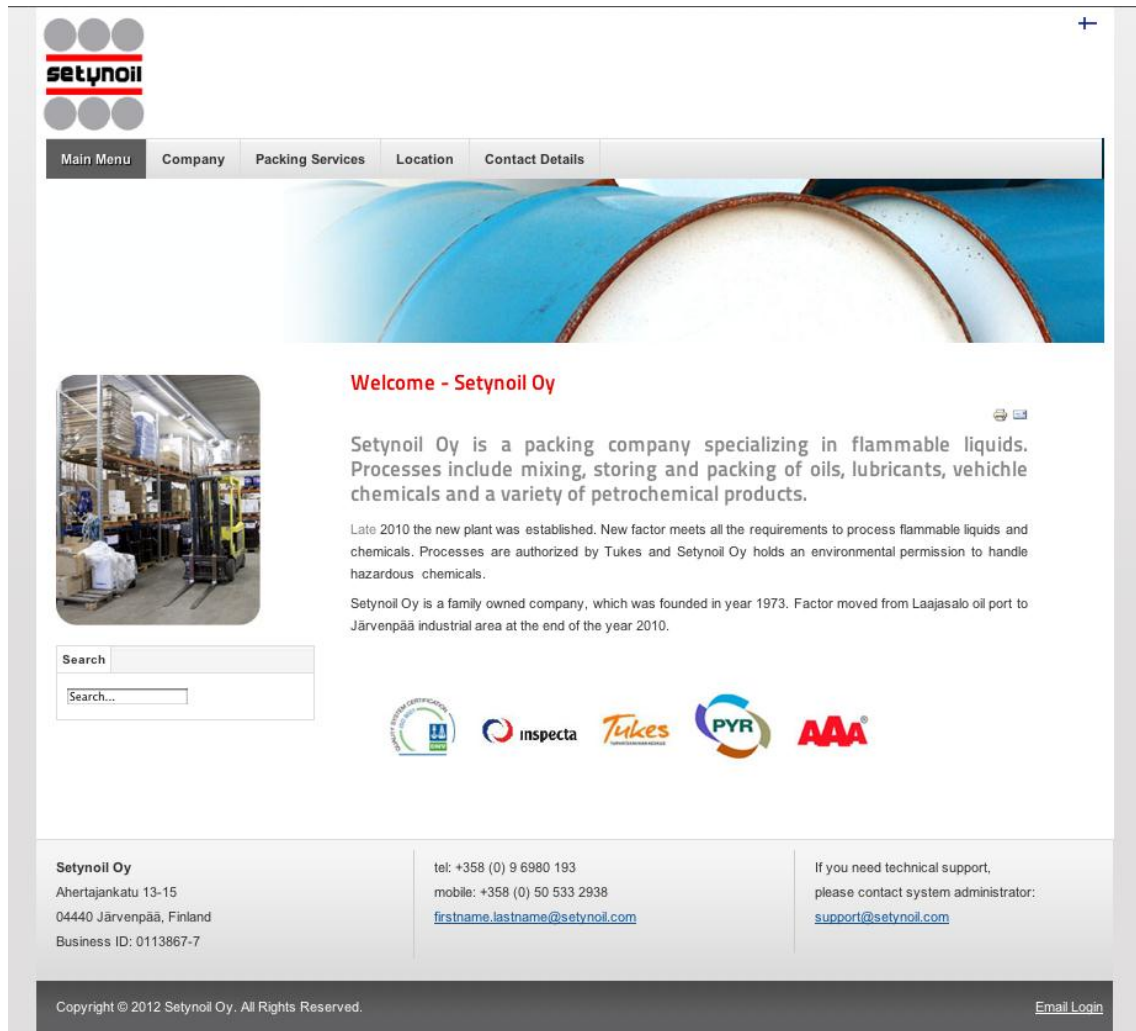
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Site Preview

Preview of the site at the end of April.



The screenshot shows the homepage of Setynoil Oy. At the top left is the company logo, which consists of three grey circles above the word "setynoil" in a bold, lowercase font, with two horizontal red lines above and below the text. To the right of the logo is a small blue plus sign. Below the logo is a horizontal navigation menu with five items: "Main Menu" (highlighted in dark grey), "Company", "Packing Services", "Location", and "Contact Details".

The main content area features a large banner image of blue and white industrial tanks. Below the banner is a section titled "Welcome - Setynoil Oy" in red text. To the left of this section is a small image of a warehouse interior with a forklift. The text in the welcome section reads: "Setynoil Oy is a packing company specializing in flammable liquids. Processes include mixing, storing and packing of oils, lubricants, vehicle chemicals and a variety of petrochemical products." Below this is a paragraph: "Late 2010 the new plant was established. New factor meets all the requirements to process flammable liquids and chemicals. Processes are authorized by Tukes and Setynoil Oy holds an environmental permission to handle hazardous chemicals." Another paragraph follows: "Setynoil Oy is a family owned company, which was founded in year 1973. Factor moved from Laajasalo oil port to Järvenpää industrial area at the end of the year 2010."

Below the text is a search bar with the label "Search" and a text input field containing "Search...". To the right of the search bar are five certification logos: a circular logo with a green leaf, the "inspecta" logo, the "Tukes" logo, the "PYR" logo, and the "AAA" logo.

The footer is divided into three columns. The left column contains: "Setynoil Oy", "Ahertajankatu 13-15", "04440 Järvenpää, Finland", and "Business ID: 0113867-7". The middle column contains: "tel: +358 (0) 9 6980 193", "mobile: +358 (0) 50 533 2938", and "firstname.lastname@setynoil.com". The right column contains: "If you need technical support, please contact system administrator: support@setynoil.com".

At the bottom of the page, there is a dark grey bar with the text "Copyright © 2012 Setynoil Oy. All Rights Reserved." on the left and "[Email Login](#)" on the right.

Site Preview 2

Site Preview, rest of the EN pages in April 2012

This screenshot shows the 'Company Details' page of the Setynoi website. The page features a navigation menu at the top with 'Company' selected. The main content area includes the Setynoi logo, a list of partner logos (inspecta, Tuices, PYR, AAA), and contact information for Setynoi Oy, including the address (Ahertajankatu 13-15, 04440 Järvenpää, Finland), phone numbers, and email addresses. A footer contains copyright information and an 'Email Login' link.

This screenshot shows the 'Packing Services' page. It features a navigation menu with 'Packing Services' selected. The main content area includes a photograph of a factory building and a table listing product sizes and packaging options. Below the table, there is a note about shipping methods. The footer is identical to the 'Company Details' page.

SIZE	PACKING	SALES PACKAGE
0,5 l	plastic bottle	(20 pcs packed in the cardboard box)
1,0 l	plastic bottle	(12 pcs packed in the cardboard box)
3,0 l	plastic jug	(4 pcs packed in the cardboard box)
4,0 l	plastic jug	(4 pcs packed in the cardboard box)
5,0 l	plastic jug	(4 pcs packed in the cardboard box)
10 l	plastic jug	(50 pcs/FIN pallet, individually packed)
20 l	plastic jug	(32 pcs/FIN pallet, individually packed)
200 l	container / barrel	(4 pcs/FIN pallet, individually packed)
1000 l	IBC container	

This screenshot shows the 'Location' page of the Setynoi website. It features a navigation menu with 'Location' selected. The main content area includes a Google Map showing the factory location in Järvenpää, Finland, with a search box and map controls. The footer is identical to the other pages.

This screenshot shows the 'Contact Details' page of the Setynoi website. It features a navigation menu with 'Contact Details' selected. The page includes a 'Send your message here' section with a contact form for Eesa Järma, CEO. The form has fields for Name, Email, Subject, and Message, and a 'Send Email' button. A 'Send copy to yourself' checkbox is also present. The footer is identical to the other pages.