Drupal platform development

- A case study of Co-Creation

Rautell, Janne
Saikkonen, Joonas

Laurea University of Applied Sciences
Laurea Leppävaara

Drupal platform development
- A case study of Co-Creation

Joonas Saikkonen
Janne Rautell
Degree Programme in
Bachelor's Thesis
May, 2013

The purpose of this project is to produce an interactive web-portal for the use of Laurea University and its collaborators. The portal needs to act as a databank, a forum and a tool in different "Co-Creation" development projects. Co-Creation is a project led by Tekes, which main goal is to develop new models and management tools for effective and efficient service design in B2B environment. The main objectives in the design of the web-platform are interactivity, easy-to-use interface and versatility.

The purpose of the project is to design two different virtual platforms, with different appearance and functionalities, but both built from the same template. These two platforms are Laurea's Co-Creation project, a virtual information portal and a Co-Creation toolkit and a platform package for Christopher Evatt's company, the main purpose of which is to present interactive web-content and to create an e-store. Another objective of the project is also to produce a commercial virtual platform template package for Laurea's use, which it can in future sell to companies and partners. The purpose of the template packet is to be a product that is easily customized to fit the customer's style and needs.

This thesis also presents modern web-development models and tools. Principally the thesis focuses on guiding the reader into the world of modern web content management systems and publishing systems and presenting the system used in the project, Drupal-Content management system with its features and general concepts. The purpose of this thesis is also to give the reader basic understanding of web-development process and tools.

This thesis follows different phases of the project and their design and implementation. The document describes the phases of the project and their development, design and implementation with theory references. The report also presents the choices made and the tools used by the project team. In addition, reasons for the choices made during the project by using theory references and experience are presented in the report.

Keywords: Web design, CMS, Content Management System, Drupal, julkaisujärjestelmät, co-creation, php.

Rautell Janne, Saikkonen Joonas

Drupal virtuaalialustan kehitys - projekti Co-Creation

Vuosi	2013	Sivumäärä	64

Co-Creation virtuaalialustan kehitys-projektin tavoitteena on ollut tuottaa projektin yhteis-työkumppaneille interaktiivinen web-portaali. Portaalin tulee toimia tietopankkina, keskustelupalstana ja työkaluna erilaisissa "Co-Creation" kehityshankkeissa. Co-Creation on Tekesin projekti, jonka tarkoituksena on kehittää uusia malleja ja hallinta työkaluja tehokkaaseen palvelukehittämiseen, B2B ympäristössä. Päätavoitteina sivuston suunnittelussa on ollut muun muassa: interaktiivisuus, helppokäyttöisyys ja monikäyttöisyys.

Projektissa on suunniteltu kaksi samasta rungosta rakennettua, mutta toiminnallisuuksiltaan ja ulkoasuiltaan toisistaan poikkeavaa sivustokokonaisuutta. Nämä kaksi sivustoa ovat Laurean "Co-Creation" hankkeeseen tuotettava virtuaalinen informaatioportaali ja työkalupaketti, sekä Christopher Evattin yrityksen käyttöön tuleva sivusto kokonaisuus, jossa pääpaino on ollut interaktiivisen sisällön esittämisessä ja e-kaupan rakentamisessa. Projektin tavoitteena on ollut myös tuottaa kaupallinen virtuaalialustapohja Laurea-ammattikorkeakoulun käyttöön, jota se voi tulevaisuudessa kaupata yrityksille ja yhteistyökumppaneille. Sivustopohja paketin tavoite on toimia helposti asiakkaan tyyliin ja tarpeisiin sopivaksi muunnettavissa olevana tuotteena.

Opinnäytetyössä käydään läpi myös nykyaikaisen web-kehityksen työmalleja ja työkaluja. Pääasiassa työn kohde on johdattaa lukija nykyaikaisten julkaisujärjestelmien maailmaan ja esitellä lukijalle projektissa käytetyn Drupal-julkaisujärjestelmän perusta ja toiminta. Työssä on myös tarkoituksena antaa lukijalle perusymmärrys web-kehityksen prosessista ja työkaluis-ta.

Opinnäytetyössä seurataan projektin eri vaiheiden toteuttamista ja suunnittelua. Raportissa kuvataan projektissa tuotetun sivuston suunnittelun erivaiheita teoriaan viitaten ja sivuston toteuttamista. Raportissa esitellään lukijalle projektiryhmässä tehtyjä valintoja ja käytettyjä työkaluja valintaperusteluineen projektiryhmässä kertyneeseen kokemuksen, tehtyihin havaintoihin ja teoriaperustaan tukeutuen.

Avainsanat: Web design, CMS, Content Management System, Drupal, julkaisujärjestelmät, co-creation, php.

Table of Contents

1   Introduction

This Thesis work is about Web-design, and about a Content Management System – Drupal. Also, this Thesis work tells about how students joined to international Co-Creation project, with their task in it, being to build a virtual platform by the means of Web-design. This virtual platform was for Co-Creation project to use in their collaboration needs for study and for practice.

This Thesis work had its beginning from student's internship project to build collaboration platform by tools of Web-design. Since, it was seen as an opportunity to document this project and to analyze the whole project in a Thesis work. We hope to have written this process into a understandable and learning format, for someone to be interested in the process of building a collaboration platform for Co-Creation project purposes.

The main goal of the project was to create a virtual platform for the Co-Creation project to Co-production companies that they can use to interact in the Co-Creation-Camps (the conferences held in different locations where people develop ideas and get tutoring in the Co Creation-topics).

The customers and the stakeholders of Co Creation - projects vary from 4 case Companies from Finland, to Universities like Cambridge in the UK, and Laurea University of Applied Sciences in Finland.

The actual platform is designed and developed by a team from Laurea which consists of staff and students as well. Students work in the project as interns, making their thesis or as project work of some specific course.

2   Business environment and role of the platform

Following chapters describe the role of Virtual Platform project in its surrounding entities, like customer business's and they define some of the basic ideas and co-projects attached to this CoCreation oriented web-design project.

The main goal for the platform is to provide an online hub/portal for the Co-Creation participants, which includes Laurea University of Applied Sciences and companies as Collaboration C G Evatt and 4 case companies. The platform is to work as information central, tool package, forum and interactive conversation board and work station for the Co-Creation participants.

2.1 What is Co-Creation ?

Co-Creation project is mainly Tekes (Finnish Funding Agency
for Technology and Innovation) funded project, under Tekes program "Serve". Co-Creation
ideology and service logic is explained in a project plan published in Laurea Leppävaara SID:

Service logic is grounded in a commitment to collaborative processes and co-creation of value
with customers, partners, and employees. In this research, co-creation means collaboration in
the creation of value through shared inventiveness, design, and other activities, whereas co-
production is more narrowly defined as participation in service production within parameters
defined by the focal organisation. This research project aims to identifying co-production/co-
creation activities and roles in B-to-B service relationships and to developing models and
management tools for effective and efficient co-creation of services.
In addition to creating new scientific knowledge, an important aim of the project is to devel-
op service design methods and a virtual platform for co-creation to be applied in companies
offering B-to-B services. Thus, disseminating of the results to companies will be in an essen-
tial role in the project.
(Quote: From co-production to co-creation (CoCo) [1])

Serve – Pioneers of Service Business 2006–2013
The Serve – Pioneers of Service Business programme encourages Finnish companies to become
global forerunners in the customer-centric, knowledge-based service business. Serve aims at
the creation of new knowledge in service innovation and encouraging the development of in-
novative and internationally competitive service concepts in companies by challenging tradi-
tional ways of doing things both at the strategic and the operational level.
(Quote: Tekes [1])

Tekes is the most important publicly funded expert organisation for financing research, de-
velopment and innovation in Finland. We boost wide-ranging innovation activities in research
communities, industry and service sectors. Tekes promotes a broad-based view on innovation:
besides funding technological breakthroughs, Tekes emphasises the significance of service-
related, design, business, and social innovations. Tekes works with the top innovative compa-
nies and research units in Finland. Every year, Tekes finances some 1,500 business research
and development projects, and almost 600 public research projects at universities, research
institutes and polytechnics. Research, development and innovation funding is targeted to pro-
jects that create in the long-term the greatest benefits for the economy and society. Tekes
does not derive any financial profit from its activities, nor claim any intellectual proprietary
rights.
(Quote: Tekes [2])

2.2 Collaborators

Collaborators of this CoCreation virtual platform –project consist of few organizations in Finland and other countries and 4 case companies in Finland. All participators where connected to this project from the beginning. Laurea University of Applied Sciences was the center place for the development of Co-Creation virtual platform, and also a Co-Creation Camp, a meeting for participators of Co-Creation project, was hosted in the spring 2012 at Laurea University.

Laurea University of Applied Sciences produces new competences in the field of service innovations and carries out professionally orientated education, regional development and R&D activities by following the Learning by Developing (LbD) operational model. Laurea employs approximately 500 personnel and has app. 8 000 students, of which app. 1 200 study in the adult education programs. Laurea operates in the Greater Helsinki Region in seven units close to good transport connections.
(Quote: Laurea)

Collaboration C G Evatt is company owned by Christopher Evatt who is from New Zealand, living in Finland, works in Europe consulting leaders and organizations to find and create their value. He is a mentor who, based on thirty years of applied research, shares profound understandings and powerful ways for people, personally and through their organizations, to create new value. Users include leaders, managers and others in many well-known organizations in both private and public sectors. He is a highly-rated and sought-after professional speaker touching people at deep levels with his stimulating and interactive presentations.
Christopher Evatt will be working in this research project all together 60 days. During this project he will be developing an IT platform for B-to-B knowledge, experience and best-practices sharing, co-creation for the betterment of participants, society and environment. It is a flexible, internet platform for supporting live and virtual, public and closed, collaboration for the co-creation and delivery of services providing measurable business, customer and social value. It will use, where possible, appropriate open source, collaboration tools and solutions tailored to suit the needs of the program participants.
(Quote: From co-production to co-creation (CoCo) [3])

3   Drupal features

This chapter defines briefly what Drupal – Content Management System – is, how it works, and how to use it effectively.

Drupal is a CMS (Content Management System) designed as Open Source software. Which means that it's source code is available freely from the Internet. To better understand this story of development, the reader should understand some basic consepts of Drupal CMS. It is a good idea to get an overall sense of what it is, and how it works.

Drupal is a bit more complex of a system than the usual CMS's. It can be described both as a content management system (CMS) and a content management framework (CMF), the basic idea being, that it has the benefits of both systems, and none of their weaknesses. Most CMS's have been made for a specific purpose, to make a news archive, or a blog-site. Frameworks on the other hand provide you with the raw materials only, you need to know programming languages and have a clear vision, to make them work.

Drupal is like a Lego kit. Skilled developers have already made the building blocks, in the form of contrib modules, you can make your pick by the needs of your site; whatever it is you need, blocks for a news site, social network site, wiki or something else.

3.1   Drupal is flexible

Node is one basic form of information in Drupal. They are at the heart of Drupal's design. At its most basic, a node is a set of related information. Because each node contains the same basic information, each node can be handled in a standard way by both Drupal core modules and contrib modules. This allows site builders to handle site content quite flexibly, they can choose what content they want to show and how they want to show it.

There are many ways on how to present your site's information, you can define many navigation schemes, custom themes ("skins" for the site), blocks (small bits of content, such as the five most recent blog articles), and feature sets as for different audiences of your site.

3.2 Drupal makes Collaboration possible

Many CMSs has the feature that you can create a web-site that broadcasts from "one to many", this is a feature that they do right out of the box. Drupal however really shines when you want to make site users to create content, and connect with each other, moving from "one the many" to "many to many".

Drupal is designed so that site builders can delegate content creation, even site administration, to users. What you need to do is give rights to people (through permissions), and then you can start collaborating.

4   General concepts of Drupal

This chapter opens up a little further Drupal CMS and its features and concepts starting from the most basic pieces of structure of this web-design tool.

A node in Drupal generally means a piece of content on your web site. E.g. Entries in blogs, news article stories, discussion topics in forums. All of the nodes have a *content type*. It also has a node ID, a Title, a creation date, an author (a user on the site), a Body, and some other properties. By using modules such as the contributed Content Construction Kit (CCK) module, and some others, you can add fields and other properties to your nodes.

A module is a coded piece of software (usually php and sometimes also javascript), that extents the functionality and features of Drupal. Core modules ship with the basic download of Drupal, and you can switch them on without downloading any additional files. Contributed modules can be downloaded from Drupal.org, the modules section. See: (http://www.drupal.org/project/modules) If you need to create your own modules, you need to understand the Drupal's module API and PHP programming.

Drupal, like most of the CMS's, they store information in a database. Each type of information has its own table in the database. For example, information about Nodes, are stored in the Node table. Users have their own table, also comments, roles and permissions are stored in the database.

The theme of your web-site creates a look for your site. It defines how your pages are displayed, graphics, layout and colors. Themes are made out of one or more PHP files, which creates the HTML output of your site's pages, and at least one CSS file that defines fonts, colors, layout and other styles.

When you enter a URL to a web page, the part of the URL after your base site address is known as the *path*. When you visit a Drupal site, Drupal figures out what data it should send to your browser by making few *database queries*. By default the URL, after the base address will look like "?q=". When you have switch on the "Clean URLs" function, then the part after the base address will look like a directory structure, without the "?q=".

If you have enabled the core Comment module, you can have another type of content on your site, which is Comments. A comment is typically a small piece of content that a user writes, for example pieces of discussion attached to a particular forum topic is a comment.

Nodes on your site can be grouped together into categories, tagged or classified in any way you choose. When you enable the core Taxonomy module, you can define your own vocabularies (groups of taxonomy terms), then nodes can be tagged with them.

With a simple FTP upload and a few web-based configuration questions, you can connect with your database and have your first Drupal site up and running within an hour. Pick one of the included themes, and just start adding content. If you want to have visitors log in, you just need to switch authentication on, from the modules configuration.
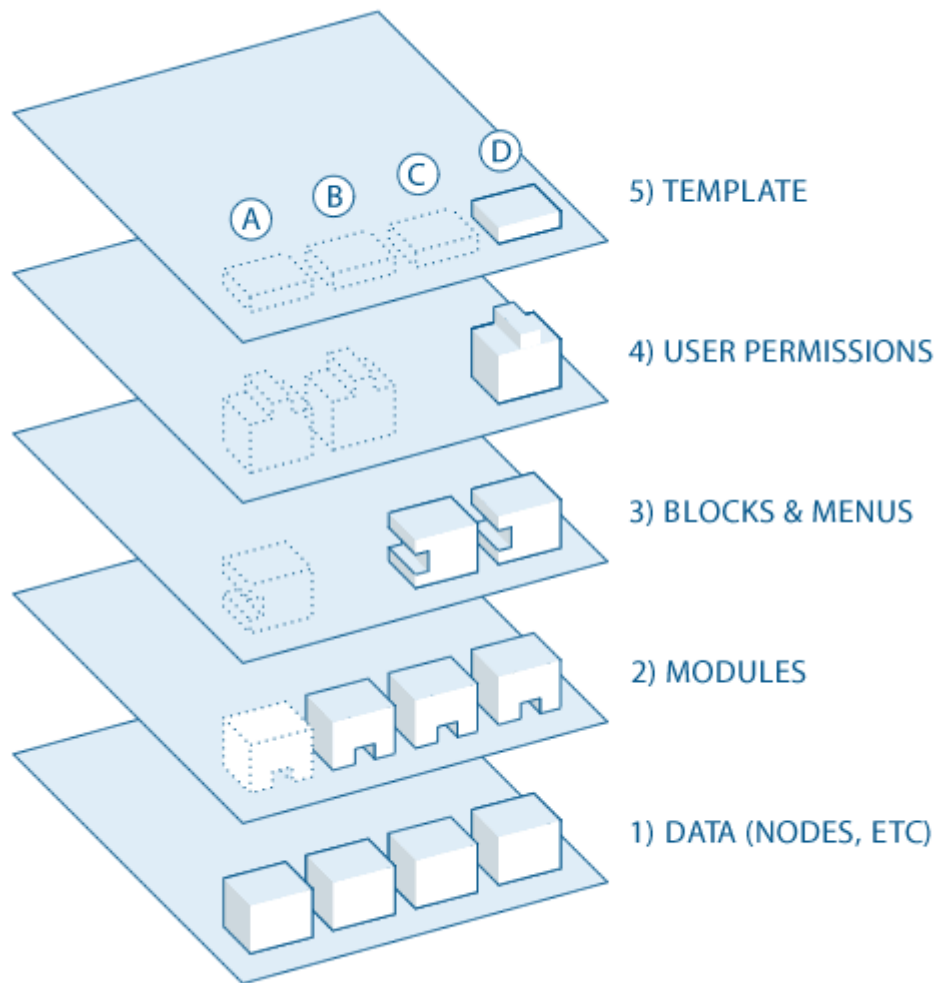
Image: Informational structure of Drupal CMS. (Source http://drupal.org/getting-started/before/overview)

4.1 Users and "roles & permissions"

Your site's visitors can have user accounts, which with they can log in, and have their account details saved in the database, also their messages are saved etc. Each user account has a numeric user ID, user name and email address. Anonymous user is treated as having a user ID zero (0). The account which is created when you install Drupal is user ID one (1), it has user permissions to do absolutely everything on the site. Other users than the Super User (ID #1), can be administered to have rights to use the site via roles and permissions. You first need to create a role, call it whatever suits you, for example: "Editor" or "Registered User". Then you should assign permissions to that role, usually these permissions correlate to the installed modules in the site. The more a role has permissions, the more it has power to make things happen at your site. Finally you should grant certain users your newly created role. That means, when those users are logged in, Drupal will let them act by the limits of their role and permission given to them.

There are also two special built-in roles: "anonymous user" (not logged in) and "authenticated user" (user who is logged in, but with no special role set). You can assign permissions for these build-in roles as well. Drupal's permission system is quite flexible.

4.2 Blocks, regions and menus

Your Drupal site's pages are divided into *regions*, which include usually header, footer, sidebars, and main content area. Your theme possibly defines some additional regions. Blocks are small areas of information that are displayed in the regions of your site's pages. Blocks can take care of the output of modules (e.g., a calendar view) or dynamic and static pieces of information that you've created yourself (e.g., latest news).

Menus are used for navigation inside your web-site. Drupal has three standard menus: Primary Links, Secondary Links, and Navigation. Primary and Secondary links are made by the administrators, and usually displayed automatically in the header area of the theme. Menus are shown as blocks, and can be set visible or invisible. Navigation menu has all functions of the site listed, it contains administration menu-items, and links contained in the modules that are enabled.

You can also create your custom menu, and make them visible by enabling their blocks. Menus can be customized in a several of ways, you can reorder menu items, by changing their "weight" (a positive or negative number that all menu items have). Reordering can also be done by simply dragging them into place in the items list. You can move a menu item into a different menu by editing the Parent property of a menu item. You can also add custom menu

items, from Add menu item tab of the Menu admin screen. To do this, you will need to write the path to the content.

The visibility of a menu item depends on that if the visitor has or does not have rights to view the page that the menu item links to. e.g. Basic users or anonymous users do not see the administrator menus.

4.3   Technology explanations

There is a lot of technologies and terms pointing to them under and around Drupal. Here is some key technologies explained shortly:

Drupal – Content management system (CMS) that offers a large quantity of services and functions including discussion forums, news publishing, collaborations tools, XML publishing for content sharing purposes, user administration, etc. In most cases a Drupal installation has a mix of core and contributed modules.

Web server – These software components handle the serving of web pages for the customer browser. Examples are Apache and Microsoft IIS.

PHP – Is a Web programming language, used very widely on different web – sites. It makes possible for developers to create a connection to databases from the web pages, and makes possible to create dynamic web pages.

Database – A structured collection on data stored on a database server. Drupal stores most of its data, content and configuration settings from your site, on a database. There are some exceptions, content such as media files are usually stored in the server's file system.

Server – A server is in a key position in serving data to other computers in a network. In a server-client system – it is a usual picture that client computers browser software asks for certain information, and the server end of the connection searches its database and sends the fetched piece of information to client.

Operating system – The software that runs on the hardware of a computer, server software runs on top of this base. Unix, Linux, BSD, OS X and Windows are some examples.

5   Virtual Platform Development

The CoCo-Virtual Platform project began in the spring of 2011 when the project team was interviewed and selected. After meetings and background studies, a project plan for the Co-Co-platfom construction was produced and presented to Krista Keränen. The project was officially launched in the beginning of June 2011 when the project team started working in Laurea's Neon-Lab.

Project team started the plan of CoCo-virtual platform by going through different materials provided by CoCo and started creating a project plan based on the materials and customer requests so it was possible build a platform that fits the needs of our customers and fits in the CoCo framework. Things processed in the defining phase were: Areas of responsibilities, project team, meetings, defining contact persons, producing a preliminary project plan which was to be finished in defining phase, producing requirement analysis of the project.

5.1   Defining phase

In the defining phase project team's goal was to clarify the customer requirements and gather information about the needs of the clients. By analyzing the results gathered from the information the team received from customers and CoCo team, the requirements and functionalities were defined for the platform. The main goal of defining phase was to answer to questions like: "what is the platform for?", "what is the platform supposed to do?"

The team used project plan which included detailed descriptions, UML-diagrams and images to present the defined requirements and solutions for the platform. These descriptions and results were presented to the customers whose approval granted the project team a green light to start the actual platform development. Defining phase description from the project plan can be found at page 54 from the CoCo Virtual platform project plan document and a mind map provided by Christopher Evatt from page 39.

The project team studied different kinds of web-platform systems as well as Content management systems. The CMS(Content Management System) functionalities and compatibilities were compared to project team's data from customers and studies. The project team's decision was to build the platform on CMS based web solution. CMS is a ready to use framework which allows administrator easy and fast maintenance and updating of the website/platform. CMS also allow developers to skip time consuming coding and development. Drupal was found to be the best match as a CM-System for the needs and technical requirements of the project.
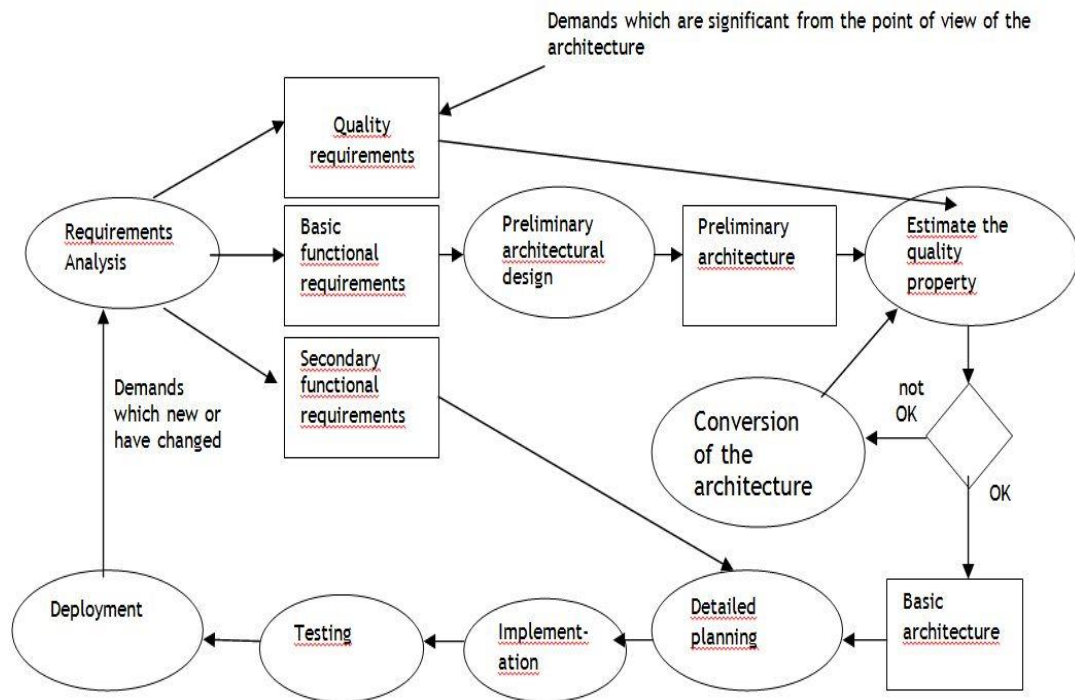
Image: UML-Diagram: Project Planning Platform –project.
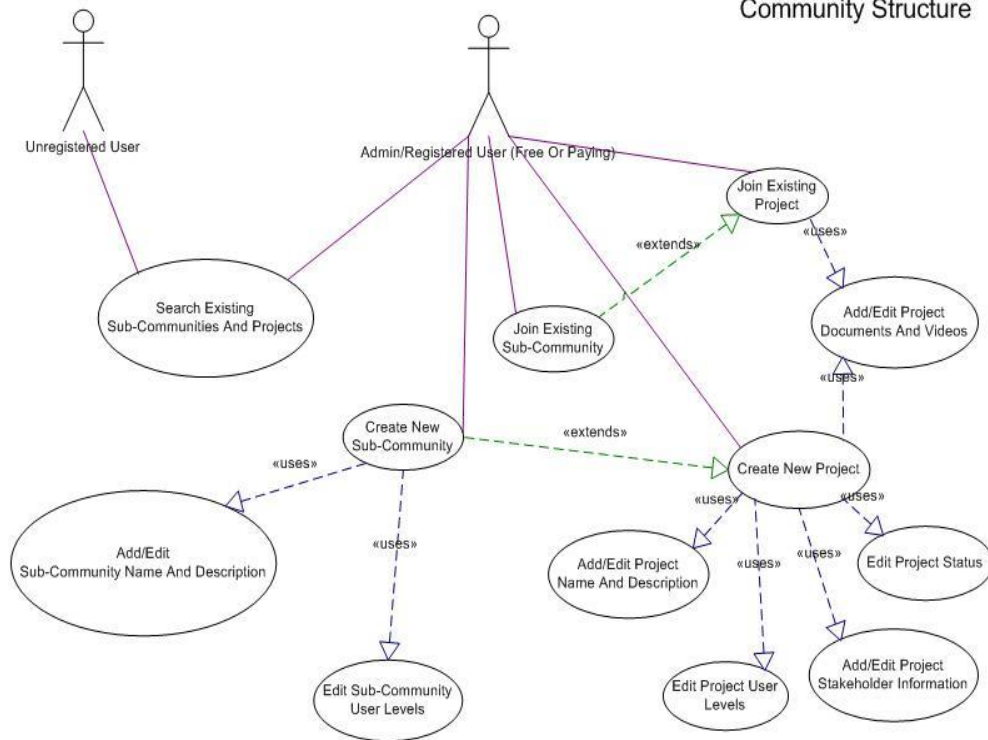
Use Case Diagram:
Community Structure

Unregistered User

Admin/Registered User (Free Or Paying)

Join Existing
Project

«extends»

«uses»

Search Existing
Sub-Communities And Projects

Join Existing
Sub-Community

Add/Edit Project
Documents And Videos

«uses»

Create New
Sub-Community

«extends»

Create New Project

«uses»

«uses»

«uses»

Add/Edit
Sub-Community Name And Description

«uses»

«uses»

«uses»

Edit Project Status

Add/Edit Project
Name And Description

«uses»

Edit Sub-Community
User Levels

Edit Project User
Levels

Add/Edit Project
Stakeholder Information

Image: Use Case Diagram: Community Structure.

Use Case Diagram:
Registration / Login / Logout
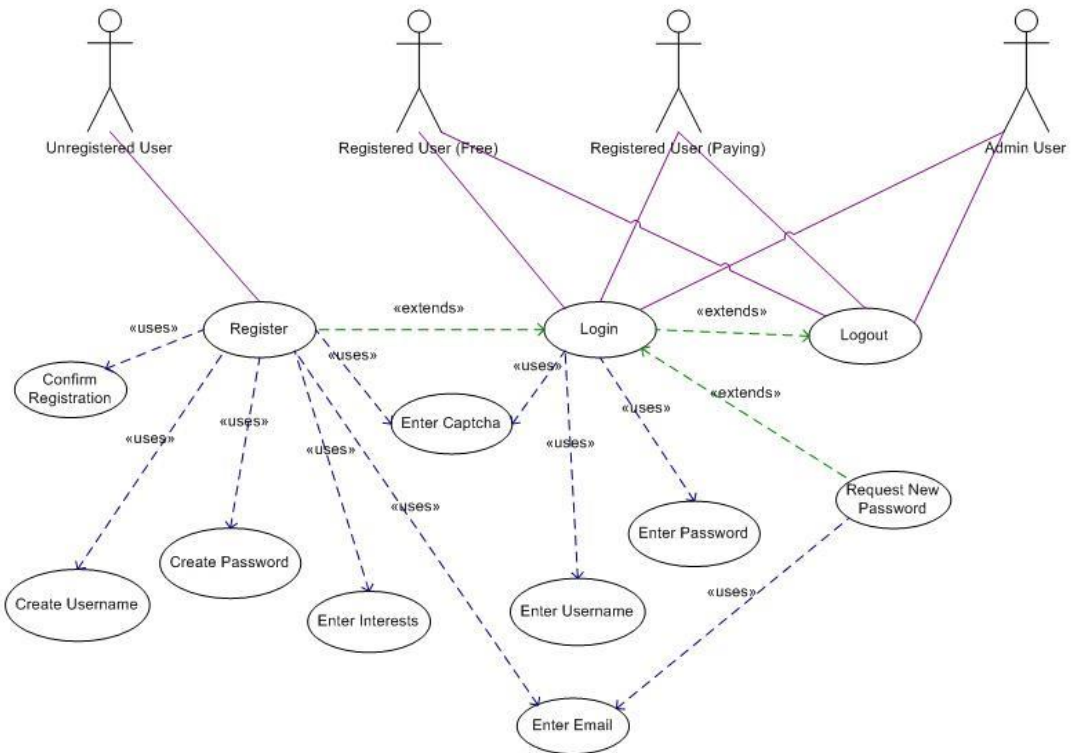
Image: Use Case Diagram: Registration / Login / Logout

Image: Use Case Diagram: E-Store.

5.2   Drupal

Drupal was chosen for the project for its flexibility and customizability as a CMS and its popularity in web-design. Project team compared Drupal to Wordpress and Joomla the two largest open source Content management systems after Drupal. Drupal is best for big scale corporate level platform like CoCo-Platform, as seen in examples of these CM-Systems below:

Drupal is more suitable in corporate level platform management. Drupal is the most developer friendly of the three even though it is not the easiest one to use. Using themes in Drupal is more difficult than in the two others, this is probably caused by the fact that Drupal is made by developers not designers, this on the other hand allows it be completely customized and modified.

Joomla is a user friendly CMS with large community to help users build their sites. Even being more user-friendly than drupal Joomla is still not user-friendly for some inexperienced web developers. Joomla also is not as quite powerful and flexible as Drupal and by that not as suitable as drupal for a large corporate level web platform like CoCo-Platform.

Wordpress is very simple to use and needs no modifications to work. Wordpress is mostly used for blogging and social services as forums and chats. Wordpress is not Developer friendly and the community has somewhat negative attitude towards problems. It also has quite much problems with updates as seem to bring in more errors and bugs than fixes and new content.

Drupal modules required for the project were split in 3 different categories: the Social group functionalities, Administrative tools, Content creating tools. Each category provides unique modules for their purposes. The following modules were chosen for social funcionalities of the platform: Organic Groups, Chatroom, Shoutbox, Blog, Forums. For the administration purposes, two modules were decided to be used: Administration menu, Control Panel. These modules provide users and admins easy access to different modules and funcionalities on the site and allow users easily to modify personal or platform settings. For the actual content management and creation was selected: Content Creation Kit (CCK), CKEditor, Views, Graphmind / Freemind, Chaos tool suite. Which are actually used on almost every website running on Drupal 6.x as they provide all the basic and main functionalities for web content creation and management.

5.3   Server

The development environment was provided by TL-Lab of Laurea Leppävaara. The project platform was hosted in secure server in school network. The platform was hosted on server which had Intel Xeon dual core processor and 8gbs of physical RAM memory and the operating system used was Open Source Linux CentOS 5 Distribution, which is a free community enterprise class operating system platform. CentOS is ideal for project like Co-Creation platform as it designed for people who require an enterprise level operating system without the cost or support of the enterprise Linux vendors such as Red hat. Using remote server from laurea was best choice in the project team opinion, as it provides possibility for multiple users to work on the site at the same time. On local host one would need to send their modified files to other project workers all the time after even slightest modifications to prevent compatibility problems with work of other members, this would cause a lot more work for the project team.

The following software were used on the server to provide the necessary services and server side functionalities needed for the platform:

The Apache HTTP Server Project is a collaborative software development effort aimed at creating a robust, commercial-grade, featureful and freely-available source code implementation of an HTTP (Web) server. The project is jointly managed by a group of volunteers located around the world, using the Internet and the Web to communicate, plan, and develop the server and its related documentation. (Quote: Apache)

PhpMyAdmin is a free software tool written in PHP, intended to handle the administration of MySQL over the World Wide Web. phpMyAdmin supports a wide range of operations with MySQL. The most frequently used operations are supported by the user interface (managing databases, tables, fields, relations, indexes, users, permissions, etc), while you still have the ability to directly execute any SQL statement. PhpMyAdmin has won several awards. Among others, it was chosen as the best PHP application in various awards and has won every year the SourceForge.net Community Choice Awards as "Best Tool or Utility for SysAdmins". PhpMyAdmin is a fourteen-year-old project with a stable and flexible code base. (Quote: PhpMyAdmin)

Webmin is a web-based interface for system administration for Unix. Using any modern web browser, you can setup user accounts, Apache, DNS, file sharing and much more. Webmin removes the need to manually edit Unix configuration files like /etc/passwd, and lets you manage a system from the console or remotely. (Quote: Webmin)

Apache Tomcat is an open source software implementation of the Java Servlet and JavaServer Pages technologies. The Java Servlet and JavaServer Pages specifications are developed under the Java Community Process. Apache Tomcat is developed in an open and participatory environment and released under the Apache License version 2. Apache Tomcat is intended to be a collaboration of the best-of-breed developers from around the world. Apache Tomcat powers numerous large-scale, mission-critical web applications across a diverse range of industries and organizations. (Quote: Apache Tomcat)

A secure connection to the server was required in the process even in the school network so it was decided to use SSH (Secure Shell) port 22 connection as the connection method. Server maintenance and modifying from Windows based machines Putty was used as terminal software and from Linux machines inbuilt terminal was used to establish connection. As file transfer (FTP, file transfer protocol) tool WINSCP in windows environment and GFTP in linux.

5.4   Designing phase

The platform was also to be created as a package that was easily modified for the use of new customers. Project team's goal was to create 2 kinds of different platforms which were: Co-Co-Platform and Christopher Evatt's company platform. Goal of the design phase was to construct the layouts and the system architectures for the platforms. A lot of documentation and diagrams were produced about features and functionalities of the platforms to describe what different parts in the platforms are supposed to do and what they are for. CoCo project plan reference for designing phase can be found at the end of the document from page 54.

The design phase was initiated by creating wireframe sketches of the "outlook" and layouts of the platforms after this discussions and brainstorming were held where objects placed into this sketch. This allowed the project team to define and design every element of the project to create well organized and clear theme for both platforms. The platforms themes were to be kept as simple as possible as corporate websites tend to be, but at the same time to create interactive and stylish websites. Some of the wireframe sketches created by the project team can be found at the references of this document from page 45-46 in the image references.

| search bar | search | | Top Header / search & login/reg | | | Login / Register |

Main Logo / Banner Area

| link | link | link | Navigation Panel | link | link | link |

Main Content area. Split into 2 separate areas.
Large one contains main content.

Main Content area. Split into 2 separate areas.
Small one contains extra info or f.e latest news.

Site Footer

Image: Example of a wireframe sketch which provides the designer the main idea and the main sectioning of the site.

The basic web-design tools used for the designing were the most popular tools used for web development. Here the tools are diveded to different categories by their usage: Image editing tools, coding "platforms"/programs, Programming languages.

The image editing tools we used in this project were: Adobe Photoshop, Adobe Illustrator, MS Paint and Artisteer. Adobe photoshop and Illustrator are the most used image editing and designing tools in the web development field. MS paint was used to create some small images and thumbnails. Artsisteer was used in the beginning of the project to create Drupal themes.

The coding platforms and text editors used were: PHPStorm, notepad++, Dreamweaver, netbeans. PhPstorm is an intelligent editor for PHP, Html, Javascript and SQL. It provides the coder on-the-fly code analysis, error prevetion and it provides automatic refactoring. Notepad++ is an extended version for coding purposes of the in-built MS Windows notepad tool. Dreamweaver is a WYSIWYG web develobut suite. Netbeans is an IDE (Integrated development environment) for mainly java development, it can be also used for PHP and other web-coding languages but not clearly as efficiently as PHPStorm.

The programming languages used in the project were the following for the web-coding: html (Hypertext Mark Up Language), css(Cascading Style Sheet), php(Hypertext Preprocessor), javascript, jquery, SQL(Structured Query Language) and the following for server side coding/Scripting: C, Bash programming (e.g. Backupscripts and different maintenance tools).

5.5   Artisteer

Artisteer is a WYSIWYG (What You See Is What You Get) Website theme and layout creation tool and generator created by Extensoft, that allows developer to create own website themes or use Artisteer's own generated themes. Artisteer is compatible with the most known CMS and web-platforms, for example Artisteer can export themes straight into Drupal, Joomla, Wordpress, as well as xhtml/css.

Artisteer allows users who are not familiar with coding to use personal and custom themes in Drupal other than the ones found in Drupal community.

The project team chose to use Artisteer in the platform project to easily and quickly design the custom theme and core for CoCo-platform. As the project moved forward and project team gained more insight on Drupal core and its working, it was noticed that Artisteer will not be sufficient as the main theme creation tool. That brings us to the most crucial change between the defining phase and the project plan in actual design.

This change was to drop out Artisteer as theme creation tool. The reasons Artisteer was dropped out in the actual design phase were the following:

Artisteer is very easy to use which causes it also to be very restricted in what the designer can customize and modify. The designer is able only to create his layout, template and theme from selected number of pre-built-in forms and features of Artisteer. Artisteer is probably very efficient tool for amateur web-designer who wants to create simple websites fast, but for larger scale corporate platform project as the CoCo-platform Artisteer limits the possibilities of designing too much.

Artisteer automaticly creates the themes for drupal to use, which causes the code to be split in multiple files. The code in the files is confusing and lacks commenting which makes editing the code extremely difficult and time taking – e.g. the css files have multiple code sets which define style and attributes for a block region. Editing them is extremely time consuming and confusing for the developer as editing one setting doesn't make difference to the site as they must be modified in different ways to actually do something visible to the site. The developer also needs to spend half time commenting the code Artisteer has created so future developers or himself don't have to use hours and hours to go through the code again.

5.6   Previous layouts

Layouts produced for the platform. As visible from some the layouts they are quite simple and do not leave much room for creativity for the designer, this was caused by Artisteer and was also the reason of Artisteer being dropped from use. Below you can see the suggested layout for Christopher Evatts version of the platform. More of the old and previous layouts for the platform created by the project team can be found from the image references page 40 - 43.
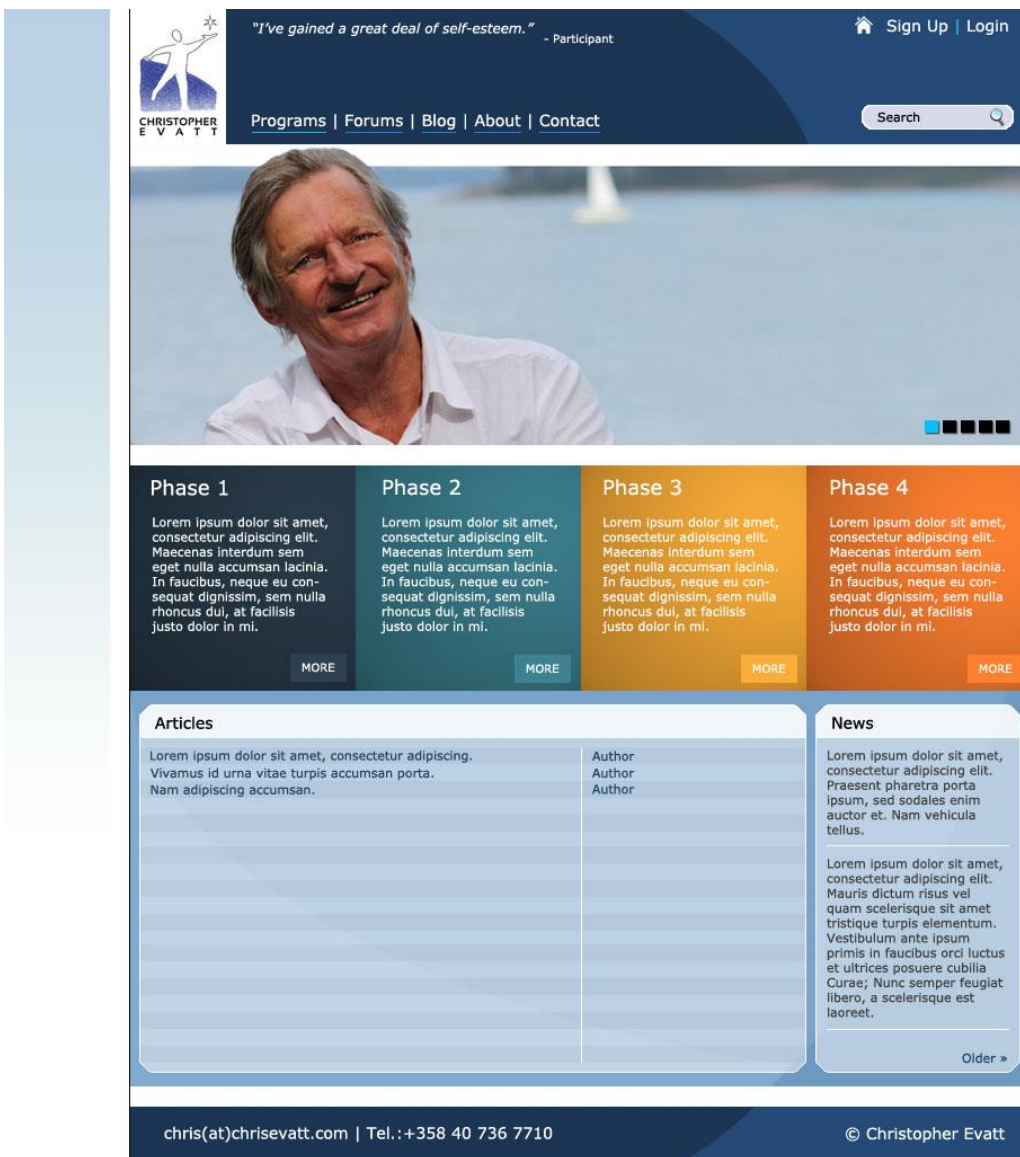
Image: ChrisEvatt.Com layout

5.7   Current state and CoCreationCamp

Current state of the platform differs from the one planned in defining phase by one major change and module changes in the Drupal system, as compatibility problems with some modules and features working together appeared during the development. The platform is currently hosted online on domain: "www.co-creation.fi", the layout design follows mostly the layout designed for Co-Creation Camp but it has more Co-Creation tools and functionalities in it.

Laurea hosted CoCreationCamp event and conference for design oriented people in the spring of 2012. The project team was requested to provide the event a platform that can be used as source of news feed, information panel and communication board(tweeting) as well as part of the workshops in the event.

It was decided to build a light version of the actual platform for this event, as all features of the platform could not be completed by date of the Camp and some of the tools designed for the platform were not actually needed on the Camp. The main focus in the project was to develop an easy-to-use lightweight platform for the CoCo-Camp which can be used as information, interaction and news portal.
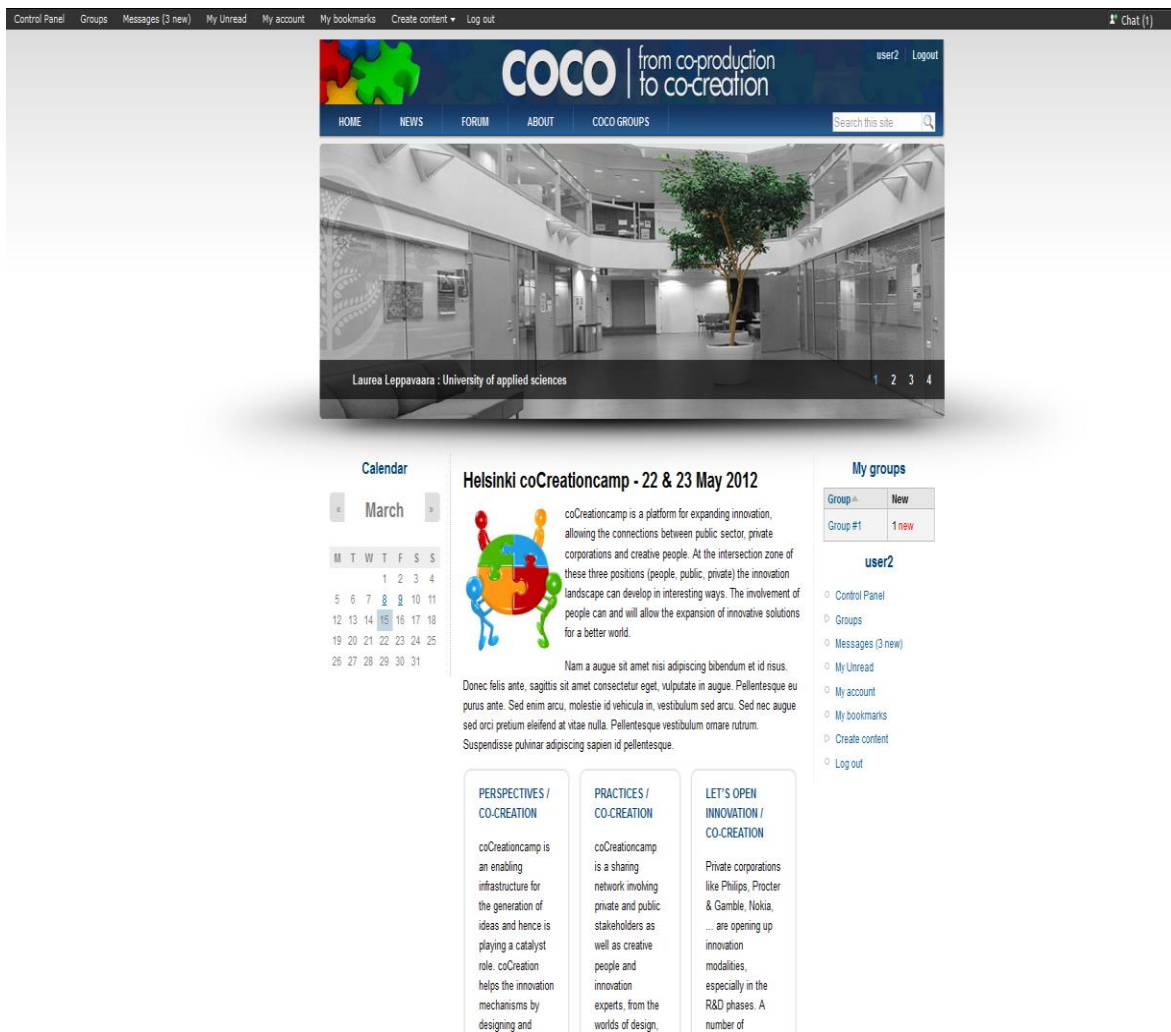
Image: CoCreation-Camp platform layout

Image: CoCo-Platform at its current state, User Account Creation

5.8   Final state of design

Current state of the platform was designed manually. A free to use Drupal theme was used as the base and for the design. The theme was taken apart and customized from scratch to fit the needs of this project. Building the layout from scratch gained advantage to actually get exactly what was required; on the other hand this saved the project team countless hours of work to manually code the core theme that Drupal uses or to go through the code Artisteer created in its theme.

The project team started working on the layout without Artisteer by getting a base layout from Drupal.org. Then the team began to customize the layout regions and blocks from the core files of the theme (e.g. front-page.tpl.php, page.tpl.php, template.php and style.css). By rearranging the regions and blocks of the theme teams developers gained possibility to put the content and features where we want them easily within the Drupal block management system (allows administrator to insert content block into specified pre-defined region/area).

Drupal modules also forced the project team to do minor changes on the platform system, most of these modules have had some problems working with other modules or the Drupal version 6.22. One of these modules is chatroom which caused a DOS (Denial of Service) bug on Apache and caused it to crash randomly from time to time. After long researching which gave no solution for the problem no other option was found but to remove the module and change it to Drupal chat module, which is Facebook style chat for Drupal pages. Other example of module that caused trouble is graphmind which was decided to be useless as it can be re-placed with Stickynotes module to produce almost same service with a lot less effort and that is more user friendly in many ways.

Image: Current State, Co-Creation.fi (Source: www.co-creation.fi).

6   Summary

This thesis work is based on internship experience and decisions made during the internship project in Laurea University of Applied Sciences project "From Co-Production to Co-Creation" (CoCo). The goal was to produce an interactive and working virtual platform for the use of Coco project and its partner companies. In our opinion we achieved the goals given to us and we learnt a lot during our time with the project.

The project produced a lot of different data that we used to put up this thesis work. We managed to produce the informal knowledge package of the platform development and also an insight to the technical features and information of the Drupal content management system.

The project gave us a deep insight into web-design and web-development projects within a large organization and community. We had the opportunity to meet different kind of people from different field of businesses and from different countries and to connect their needs in a one virtual platform. We learned a lot about web-design itself but we also had the opportunity to learn about different cultures and different working methods within different organizations.

The project produced a working platform which is currently in use of the case organization and can be found at www.co-creation.fi. The results of the project were a flexible web-layout which can be easily modified and implemented for use of different customers. All the pre-built modules and functionalities of the website are ready to use on new projects and websites with minor configuration and customization by the developer or the customer. These functionalities and modules include features such as Facebook style chat system, discussion boards, Personal user profile with e-mail and calendar features, various Co-Creation tools including sticky notes for user group brainstorming. The platform also has the basic website functionalities. Development of the platform has been continued after our retiring from the project in Laurea and case companies.

7   References

Open Source Internet documentation and references:

Drupal:
http://drupal.org/documentation

W3Schools:
http://www.w3schools.com/

Linux CentOS:
http://wiki.centos.org/

PhP:
http://php.net/

PhPmyAdmin:
http://www.phpmyadmin.net/home_page/index.php

Quote references:

From co-production to co-creation (CoCo):
1. Laurea University of Applied Sciences, SID Leppävaara in co-operation with VTT; "From co-production to co-creation (CoCo)"; Page 2; 31.12.2012

2. Laurea University of Applied Sciences, SID Leppävaara in co-operation with VTT; "From co-production to co-creation (CoCo)"; Page 13; 31.12.2012

3. Laurea University of Applied Sciences, SID Leppävaara in co-operation with VTT; "From co-production to co-creation (CoCo)"; Page 15; 31.12.2012

4. Laurea University of Applied Sciences, SID Leppävaara in co-operation with VTT; "From co-production to co-creation (CoCo)"; Page 14; 31.12.2012

Laurea

Laurea.fi; http://www.laurea.fi/en/information_on_Laurea/Pages/default.aspx)

Tekes

1. Tekes: http://www.tekes.fi/programmes/serve
2. Tekes: http://www.tekes.fi/en/community/Tekes/339/Tekes/1279

Books used on development process:

Drupal 6 social networking : build a social or community web site with friends lists, groups, custom user profiles, and much more / Michael Peacock. Birmingham : Packt Publishing, 2009

Pro Drupal Development / by John K. VanDyk : Expert's voice in open source; Learn how to use the content management framework to create powerful customized web sites / [Berkeley, Calif.] APRESS, 2008

Front end Drupal : designing, theming, scripting / Emma Jane Hogbin, Konstantin Käfer. Upper Saddle River, NJ : Prentice Hall, 2009

Building powerful and robust websites with Drupal 6 : build your own professional blog, forum, portal or community website with Drupal 6 / David Mercer; Birmingham : Packt Publishing, 2008.

Documents used as reference:

CoCo Virtual Platform Project plan:
Toni Hymander; Janne Rautell; Joonas Saikkonen : Laurea University of Applied Sciences, 2011.

From Co-Production to Co-Creation (CoCo):
From co-production to co-creation (CoCo) : Laurea University of Applied Sciences, SID Leppävaara in co-operation with VTT, 2012.
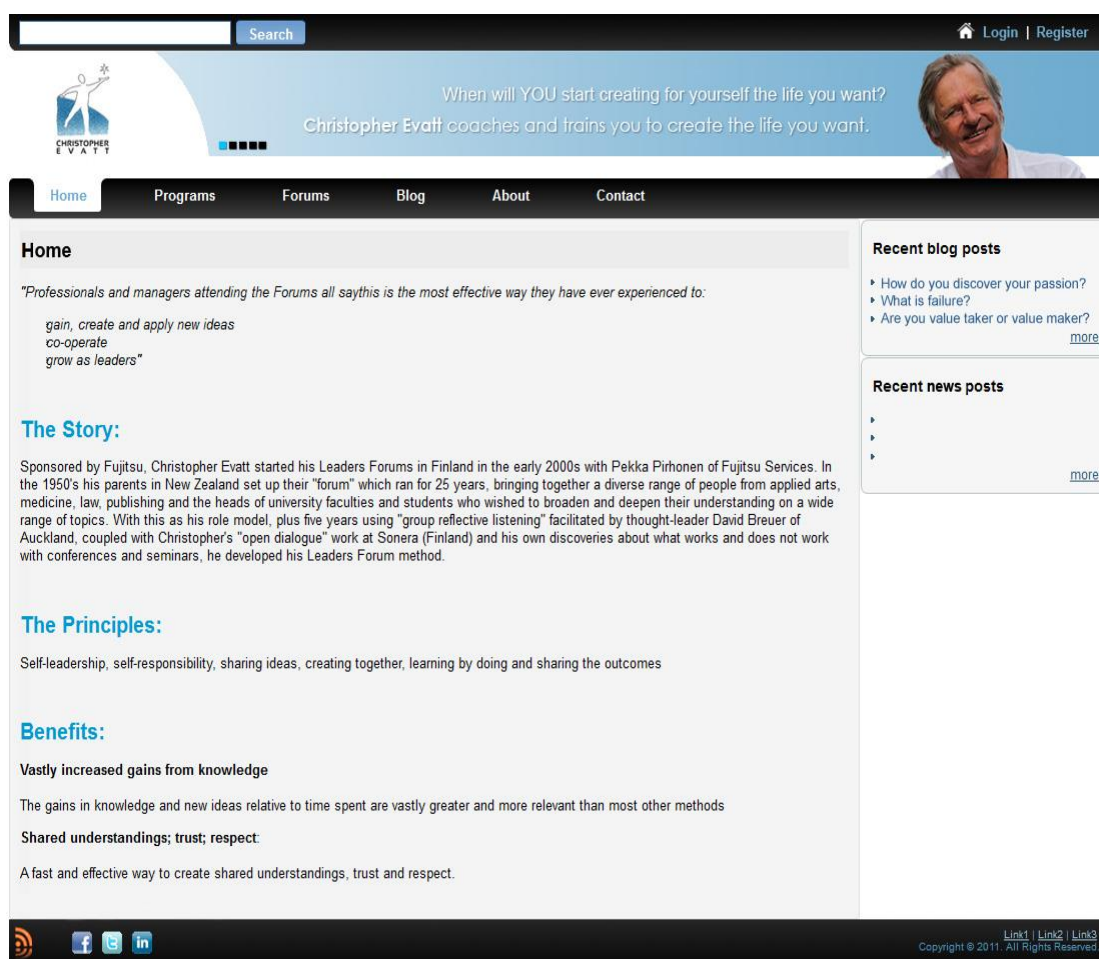
CoCo Website Solutions using Drupal 6.x:
Toni Hymander; Joonas Saikkonen : Laurea University of Applied Sciences, 2011-2012.

Laurea Course 00164 Report:
Toni Hymander, Joonas Saikkonen : Laurea University of Applied Sciences, 2012.

Illustrations

MindMap1 Christopher Evatt's MindMap on Platform content

Picture 3. ChrisEvatt.Com layout

Picture 4. ChrisEvatt.Com layout

Picture 5. ChrisEvatt.Com layout

Picture 6. ChrisEvatt.Com layout

Picture 9. Current State, Co-Creation.fi

Source: http://www.co-creation.fi

Wireframe Sketch 2. Christopher Evatt - site wireframe sketch
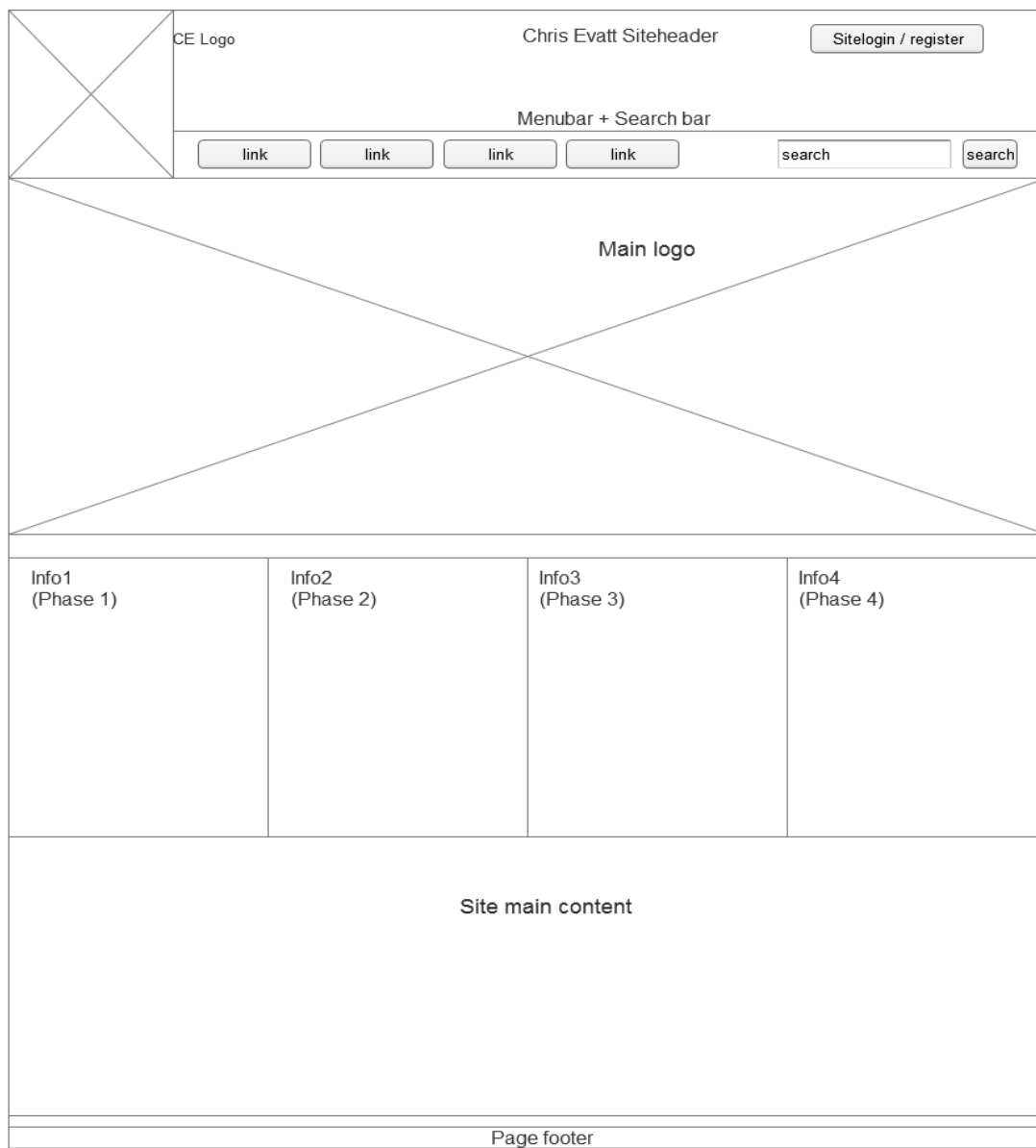
Wireframe Sketch 3. Co-Creation Camp wireframe sketch

Drupal User/Admin panel for shortcut navigation / Page administration

COCO Banner

Menubar + Search bar

link	link	link	link	link		search	search

Jquery Carouselle / Main logo

Placeholder module (f .e Calendar)	Site main content	Placeholder module2 (f .e User navigation / User controlpanel)

Page footer Co-creation information / co-creation links
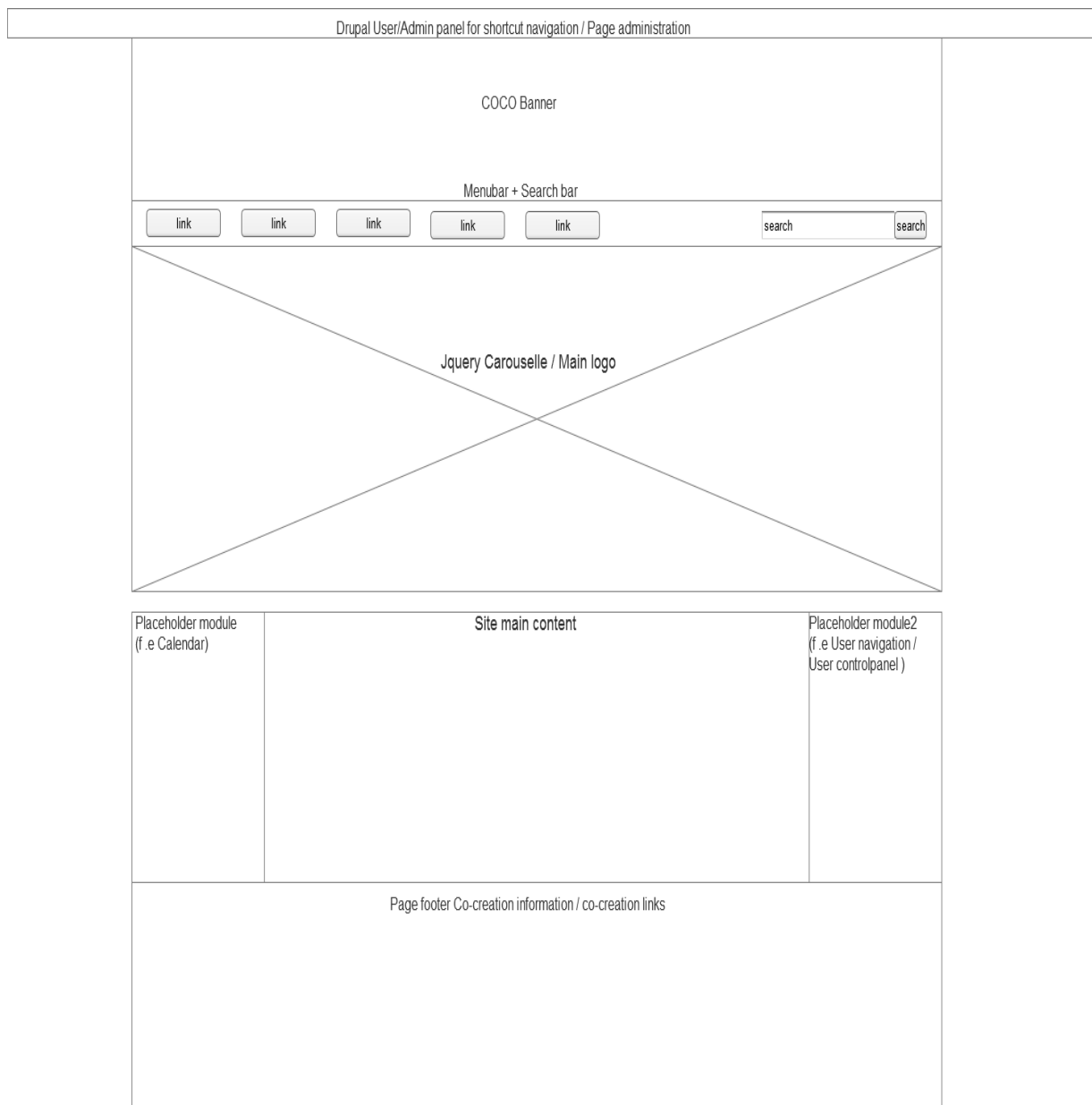
Appendices

CoCo Website Solutions using Drupal 6.x

Site purpose

This section describes the purpose of the website and the basic features the site organizer needs to run the website.

CoCo website

Purpose: The purpose of the website changes depending on company using it. The current purpose is to co-create a community who wish to personally progress and to make a positive in the lives of others.

Modules:
Color (Optional core module)
User (Core module)
Organic Groups (http://drupal.org/project/og)
Control Panel (http://drupal.org/project/controlpanel)

Features:
The ability to change the theme and content of the website easily depending on the company using it.
Users need to be able make user accounts.
The site organizer needs the ability to make different user groups.
The site organizer needs to be able to add and show different site sponsors.
Site functionalities

This section describes the basic functionalities the website needs to be able to perform.

Video broadcasts (Free)

Purpose: Provide personal progress advice and success stories to the users of the website.

Modules: Upload (Optional core module)

Features:
The ability post videos on the website.
The video posting feature needs to usable by both the site organizer as well as the community.

"BreakFree" training program

Purpose: The purpose is to provide users with training modules that consist of text, videos and exercises. After working on the modules as groups (3-7), the trainees send in questions that will be answered in 30 minute webinars once a month.

Modules:
Content Access (http://drupal.org/project/content_access)
Chat Room (http://drupal.org/project/chatroom)
DrupalChat (http://drupal.org/project/drupalchat)
Contact (Optional core module)
Live Streaming (http://drupal.org/project/vls)
Blog (Optional core module)
Private (http://drupal.org/project/private)
Simple Access (http://drupal.org/project/simple_access)

Features:
Ability for the site organizer to create groups and content that only a certain group can see.
Ability for the trainees to communicate.
Enable trainees to send questions to an email address.
Ability for the site organizer to hold a webinar (video/audio stream).

The "BreakFree" book needs to be supplied as part of the "BreakFree" training program at no additional charge.

The trainees participating in the "BreakFree" training program need to be able to maintain their own "BreakFree" blog.

E-Store

Purpose:
Sell products online.

Modules:
e-Commerce (http://drupal.org/project/ecommerce)
Simple Payments (http://drupal.org/project/simple_payments)

Features:
Provide different products. These products are books, "Break Free program and programs provided by others.
Receive affiliate fees from selling programs provided by others.
Provide different payment options. E.G. Paypal; Visa etc.

Site sub-communities (Wiki)

This section describes features and tools needed by the sub-communities using the website.

Structured communities

Purpose: To give users the ability to create and manage sub-communities. These sub-communities need to be easy to find and join.

Modules:
Organic Groups (http://drupal.org/project/og)
Wikitools (http://drupal.org/project/wikitools)
Search (Optional core module)
Upload (Optional core module)
GraphMind (http://drupal.org/project/graphmind)
Blog (Optional core module)
Web File Manager (http://drupal.org/project/webfm)

Features:
Users need to be able to create and manage sub-communities.
Each sub-community needs to have a profile that contains information (description, projects, status of projects, sponsors, stakeholders and links to stakeholder's websites) about the sub-community in question.
Users need to be able to search for different sub-communities as well as members of those sub-communities.
Users that are part of the sub-community need to be able to produce and upload content (documents, videos) for the sub-community.
Each sub-community also needs tools (mind maps, file sharing) and information channels (blog) to work on projects.
Sub-communities need the ability to post advertisements that show what kind of help and resources they offer as well as what kind of help and resources they need.

Recommended

This section describes the rating features the website needs to give to the users using the website.
Ratings

Purpose: The website needs to be able to promote recommended organization. Users of the website also need the ability to rate different products and services.

Modules: Fivestar (http://drupal.org/project/fivestar)

Features:
Provide users the ability to rate products and services.
Allow the site organizer to add a list of recommended organizations.

Project Plan of CoCo Project

Simplified and minified version of Platforms project plan:

---

1. Introduction

The basic idea is to define and design a virtual platform for the use of Christopher Evatt, his company and his customers. Customers should be able to stream live video-audio data, and be able to create their own profiles and connect to each other. Our goal is also to produce a platform that is versatile enough to be customised for the use of any organization or any social media.

 Preliminary Knowledge

CoCo –project: From Co-production to Co-Creation; A research project 2010-2012 funded by Tekes' Serve program (Finnish Funding Agency for Technology and Innovation. Christopher Evatt has been in collaboration with Laurea University of Applied sciences for a few years, and has given some lectures for the students of Laurea about better communication and being an open personality. He is in key position with this CoCo – project, he pilots the Coco-project lectures for the courses students, and guides them in the creation of student projects.

Project organization

The project team working on the virtual platform consists of three project workers: Toni Hymander, Janne Rautell and Joonas Saikkonen.

The project team will be working closely with Christopher Evatt's employee, our project coach: Senior lecturer, and Christopher Evatt. The virtual platform team has the technical responsibility on designing and building a working prototype of the virtual platform for the CoCo-project.
Krista Keränen is the project manager.

On a later day some interest groups will be added here.

Timetable

The basic idea is to meet with the project group once every week until the project plan is complete.

We did a timetable for the project on Excel sheet. from now (week 11) to week 12 on the year 2012.

The schedule is preliminary, and it can be changed while the project advances. Also, the hopes of client should be heard also.

Picture1.1 Project Timetable

Project Schedule

The project uses a slightly modified waterfall model to demonstrate the schedule of the project. After the schedule proposed here, the other customers will test the platform and the project spirals back to the beginning phase. The schedule is divided into different phases that have smaller activities in them. All the activities in the phases fall under two different parts.

The first part includes information gathering and production of software. The second part includes the documentation of all made decisions and software related diagrams.

Project planning phase

This phase is kind of a feasibility study phase, where the goal is to make a preliminary overview on how the system should operate to satisfy the customer needs.

Part 1:

Gathering information about the project, defining contact persons and defining areas of responsibilities.

Defining the characteristic details of the project and the functions and processes required from the platform by the customer.

Part 2:

Documentation of the information gathered during project planning phase.

Producing a preliminary project plan, which is to be finalized during the defining phase.

Producing a requirement analysis for the project.
Planning phase milestones

Defining phase

In the defining phase, the goal is to clarify the customer requirements and collect as much information about the needs of the client as possible. After successfully analyzing these requirements, it is possible to create the system specifications, which make it possible to start examining the functional require-ments and ways to make the customer requirements a reality. The real meaning of the defining phase is to answer the question "what is the system supposed to do?"

Part 1:

Gather information about the customer requirements and then find technical solutions that will satisfy the customer requirements.

Defining the system specifications that are required for the platform.

Decide which systems and technical solutions (coding languages, server specifications, hosting specifica-tions).

Part 2:

Improvement of the project plan.

Documentation of the information gathered and produced in the defining phase of the project.

Producing documentation of estimated costs of technical system (servers, hosting, domain, etc...).
Defining phase milestones

Milestone 1. Defining areas of responsibilities and contact persons.
Milestone 2. Gathering customer requirements on the virtual platform.
Milestone 3. Gathering technical data, on usable CMS's (Content Management Software) and their exten-sions. The project team choose to use Drupal-CMS after testing different platforms.
Milestone 4. Drawing Use-Cases. 1. "Login" 2. "Functionalities" 3.

Designing phase

In the designing phase, the goal is to create and document the system architecture based on the cus-tomer requirements. The designing phase also consists of the creation of system diagrams that showcase how the different functions of the system operate. The real meaning of the defining phase is to answer the question "How is the system supposed to go about its duties?"

Part 1:

Designing the functionalities and the graphical outlooks for the portal (Layout), so that the customer can decide the one he likes most.

Start doing preliminary coding of the platform, so the layout and code walk hand-in-hand.

Part 2:

Produce documentation about the graphical solutions used and the code produced with it.

Creation of different system diagrams that demonstrate the functionalities of the system.

Production phase

In the production phase, the goal is to create the previously designed system and create the layouts, modules and codes for the platform.

Part 1:

Continue coding the started in the designing phase and setting up the needed services on server systems for the platform to work.

Testing of the modules coded into the portal, which leads to a partly functional prototype of the portal being finished during production phase.

Part 2:

Produce documentation of the systems and modules used and created.

Adding proper comments to the code that describe the functionalities.

Test reports of modules that are tested. Produce introduction document of the prototype platform to help test users to understand the concept.
Testing

The testing phase is kind of a part of the production phase and as such overlaps the production and designing phases. The reason for this is to minimize risks by starting the tests on the system in an early phase. This ensures that all major bugs in the system are found and fixed before the deployment of the platform.

Part 1:

Test all modules and systems of the platform and fix anything that is not working or is lacking in usability.

Part 2:

Documentation of the results found during the tests and reports on the fixes done to the platform to eradicate possible bugs and problems.
Deployment phase

The goal of the deployment phase is to finalize the platform and integrate it into other possible support systems. This phase ends with the platform going public.

Part 1:

Deployment of the final product to the system it is supposed to run on in future. Run final tests on the product before handing it over to the customer.

Part 2:

Produce documentation of the deployment and the final tests of the platform and server systems. Produce a presentation to the customer of the platform created.

Maintenance / Development phase

The goal of the maintenance and development phase is to uphold the integrity and functionality of the system as well as develop possible new ideas and features to the platform. After this phase is reached, the project has come to a close in its lifecycle and goes back to the start of the spiral.

Part 1:

Maintenance of the platform and the addition of new modules.

Administrative duties concerning users.

Part 2:

Documentation of the maintenance updates and new systems implemented to the platform.

Requirement specification

We need these specifications to make a complete Project plan and how to design the virtual platform. Requirements specifications chapter contains in itself the requirements of the project itself by demanded by the customer and the requirements that are needed to keep the project in motion. Requirements are also used to hold the project as well as project team and customer together and keep the project going to the way that everyone wants. With clear requirements for the project, project team is able to keep the product itself defragmented.

Purpose of the site:

To co-create a community who wish to personally progress and to make a positive in the lives of others.

Areas of the Virtual Platform:

Here is a list of the requirements that we've received for the virtual platform while talking to Christopher Evatt at the 4th of April 2011, and from his notes.

Video broadcasts (free)
Personal progress advice
Success stories
Posted by site organizer / Posted by community
"Break Free"
A net delivered training program on how to have the life and career you want. Users "Pay" for program.
Five training modules
Access all or any at any time. Text; exercises; short videos.

Trainees will work in net groups 3 to 7

Could use Skype or Facebook

Webinars

Run monthly for trainees. Answer trainees questions.
30 mins. Could use Skype or Facebook; 2nd Life.
Questions emailed in to a designated site
Access all or any at any time

"Break Free" book

Supplied as part of the training program at no additional charge

Break Free blog
Shop
Books

"Break Free" program
Programs provided by others, Receive affiliate fees.
Payment options: All common ways E.G. Paypal; Visa etc.

a free forum for customers for talk on different topics

A system to share and communicate, with profiles like in Facebook

Possible to create groups which can communicate and collaborate
Wiki to hold information of each sub-community

Accessed by: subject e.g. clean water; re-newable energy
Community name e.g. Red Cross
Location e.g. Christchurch; New Zealand
A Google –like search is needed
Updated by community members

Wiki information: Profile of each sub-community
Sub-community members
Sub-community project(s):
Description; Status of project; project documents; videos; Stakeholders, links to stakeholders web sites;
(degree of access decided by sub-community)

Community (users) Management

Public users (free)
Members (subscription)
Sub-communities based on interests, links to advertiser, project and sub-community.

Help and resources wanted

Help and resources offered
Blog for each sub-community

Members profiles and links to members

Sub-community profile

A "news" board: For each member, for each sub-community, for the community; Text video.

Collaboration Co-creation tools:
Mind Mapping, Skype, Document sharing,
Blog.

Linked to Wiki.

Sponsors

Site sponsors
Project sponsors
Sub-community sponsors
(paid by sponsors)

Recommended

Organizations
Products; services
(Star ratings given by users)
(Payment "by click" & % of sale)

Architecture planning

In this chapter has been presented the Architectural planning of the platform project, including the project teams vision of possible spiral diagram use in web-development with the resources and the time that the project team currently has available for use to produce and complete the project within the time / resource limits of the project. Demands which are significant from the point of view of the architecture

As the image above demonstrates, the project starts by defining quality requirements, basic functional requirements and secondary functional requirements which are then used as base for the designing the platform and the coded modules of the platform to achieve the most stable and user friendly platform as possible. The data from these research are then implemented in the project and tested for maximum effect.

As we have discussed with Krista Keränen, Laurea's project manager, that we should be using a spiral testing environment which uses the feedback from users to create more usable and user friendly platform.

Project risk analysis

In project risk analysis chapter are presented the risk and hazards consuming the project itself. Risks and hazards for the technical side of the project will be produced within the development phase while the hard- and software solutions are selected and designed.

Project risk analysis

CoCo - Virtual Platform project has many kinds of risks that when happen might endanger success of the project or some module of the project. As listed above we have graded some of the major risks to this project by their probability of happening and their severity to the project. From the table above two risks are considerably above others in the danger they represent to the project, these processes are Insufficient requirement documentation, developing features what customer does not need, we have also included a how-to prevent these hazards from happening by creating a column which represents a "what to do" to avoid them.

We have listed in this risk analysis mostly the risks considering the project itself not the product since the web platform and maintaining the systems need to be considered through the project while developing and designing the platform to make it stable and bug free. Full risk analysis for the technical and designing sides of the project will be produced within the development phase of the project when we go through the use-case scenarios and the system specifications and diagrams for the hard/software side of the project.

The main goal of this risk analysis has been to give the project team and the customer a picture of the following: What the customer wants, what is the most effective and efficient way to produce it, limits of the resources and the systems available so it is clear to the customer as well as the project team what can be produced with the current resources available.

APPENDIX

Project meetings.

First meeting (14.3.2011)

We first met on 14th of March at Laurea Leppävaara's classroom 207A.

People at the project meeting are:

Toni Hymander
Janne Rautell
Joonas Saikkonen

We started the discussion about the CoCo-project, its requirements and the project. We decided to use Drupal as CMS -> Content Management System.

Ideas that came up while talking about the project, and making the portal happen:

Videos are important, we starter to discuss about the technology, and it seems that Adobe Flash Player is the 99% used program around in the Internet.
We decided to all of us to introduce Drupal Content Mangement software morely in our own,
So we can start designing the portal as soon as possible.

Using Drupal seems fair enough – using php for example would make the project timetable much more slow.
We browse through another internet sites, made with Drupal Content Manager, - so we see how the Drupal Modules is used in Web – design.

Second meeting (21.3.2011)

2nd Meeting, CoCo – Virtual Platform project plan meeting at
Laurea, Leppävaara in classroom 207A.

Time   21.3.2011 at 10:00

Place   Laurea Leppävaara, Vanha maantie 9, Espoo

Topic   CoCo –project – Virtual platform Project Plan meeting

Present:
Janne Rautell
Toni Hymander

Absent:
Joonas Saikkonen *(sick)*

Project plan is being written, we did research on ways to create an efficient project plan. We discussed about the use of Drupal cms(content management system) in making of the virtual platform. We discussed more about design forms and timetable. We didn't do changes to the timetable.

Third meeting (28.3.2011)

3rd Meeting CoCo – virtual platform project plan meeting at Laurea, Leppävaara in class room 207A.

Time   28.3.2011 at 12:30

Place   Laurea Leppävaara, Vanha maantie 9, Espoo

Topic   CoCo –project – Virtual platform Project Plan meeting

                        Present: Janne Rautell
                                            Toni Hymander
                                            Joonas Saikkonen

                        Absent: -

Project plan is being written, we do research on good ways to create an effective project plan. Introduction to project plan is being written, timetable also. Next is risk management. Now we need more information on the requirements specification.
Questions to be asked:

What are the needs of participating companies?
- Answered.
What services does the virtual platform need?
- Answered.
What kind of layout should be used in the platform, colors, pictures, logos etc.?
- To be discussed.

Fourth meeting (4.4.2011)

4th meeting Coco – Virtual Platform project plan meeting in Laurea, Leppävaara cafeteria. We met in the school cafeteria with Senior lecturer and Christopher Evatt to discuss about the design and the customer demands of Virtual Platform.

Time: 4.4.2011 at 15.00
Present: Christopher Evatt
Janne Rautell
Joonas Saikkonen
Toni Hymander
Senior lecturer

absent: -

Topics:
Virtual platform Sites content, from the view of Christopher Evatt : (from his own written notes, and the conversation)
Training courses
Christopher Evatt talking – PayPal
Text
Video
BREAK FREE –corner (how to get job/career)- it is kind of FAQ.
Free forum for customers for talk on different topics;
system to share and communicate, with profiles a little bit like in Facebook.
Possible to create groups which can communicate and collaborate.
broadcasts.
access level difference between free and paying users.
Modules
            - Online lectures
            - User profiles (something like in facebook -> To be   discussed further in
project)
            - VODs (Video On Demand)
            - Webinars
            - Forum
            - IM-system (Instant messaging between users as in   for example in face-
book.)
            - Commentating to articles and videos.
            - Shoutbox.
            - E-shop (Bookstore etc…)
Paying methods:
- Paypal
- Credit cards
- Free try-out tickets shared by Christopher Evatt?

Fifth Meeting (26.4.2011)

5th meeting of CoCo – Virtual platform Project plan meeting at Laurea, Leppävaara in class room 207A.

Time   26.4.2011 at 11:30

Place   Laurea Leppävaara, Vanha maantie 9, Espoo

Topic   CoCo –project – Virtual platform Project Plan meeting
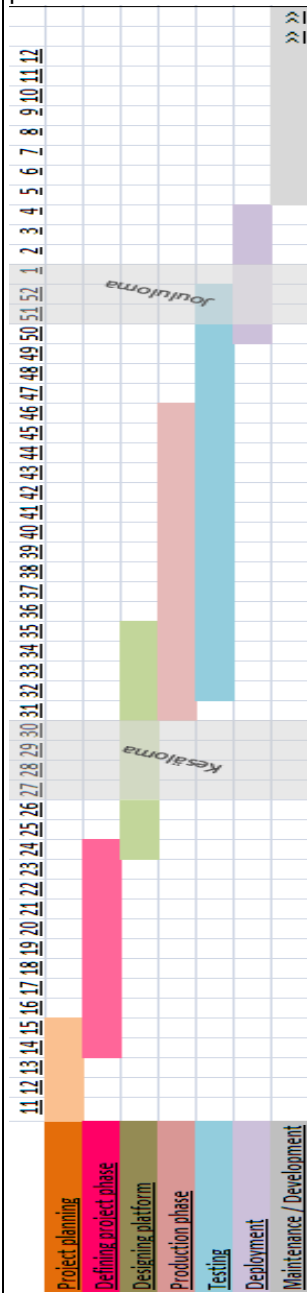

                              Present: Janne Rautell
                                                 Toni Hymander
                                                 Joonas Saikkonen

                              Absent: -

Project plan is being written.. Requirements specification has been written in a longer version now. The Memos has been added to the Appendix. Some guidance has been added on text form under the pictures.

Picture 1.1 Project Timetable (full size)

REFERENCES

Haikala, I. Märijärvi, J. 2004. Ohjelmistotuotanto. 10 painos. Hämeenlinna: Talentum media.

Koskimies Mikkonen 2005. Ohjelmistoarkkitehtuurit. IT Kirjat. Talentum.

Laurea Course 00164 Report

Introduction to the project

The main goal of the project is to create a virtual platform for the Co-creation to Co-production compa-
nies that they can use to interact in the CoCo-Camps(the conferences held in different locations where
people develop ideas and get tutoring in the CoCo-topics).

The customers and the stakeholders of CoCo-project vary from companies f.e Otaverkko from Finland to
Universities like Cambridge in the UK and Laurea university of applied sciences in Finland.

The actual platform is designed and developed by a team from Laurea which consists of staff and stu-
dents as well. Students work in the project as interns, making their thesis or as project work of some
specific course, f.e this 00164 course.

Deciding the platform to be used

We in the project team decided to build the platform using Drupal and more specifically Drupal 6.22
Content Management system(CMS). Drupal is extremely flexible and customizable platform.

We decided to use Drupal as our CMS instead of CMS's like Joomla or CMSmadesimple because Drupal is
fast and effective way to create the basic functionalities that large portal as our platform needs. Drupal
not only being easy and effective to create the basic functions is in our opinion the most flexible and in
other words bendable as it has almost no restrictions from the core processes and modules. Drupal is
also extremely easy for one that understands basics of web-design, php and mysql to get into. Why Dru-
pal 6.22? We selected Drupal 6.22 because it has the best support for modules and 3rd party integra-
tions compared to f.e Drupal 7.0 which has some modules and features that are not yet available in old-
er Drupal versions, on the other hand this hasn't changed our working much as there are workarounds
for almost everything in Drupal 6.22 also.

One reason that we also decided to go for Drupal 6.22 is that one of the customers Christopher Evatt's
site is currently using Drupal 6.22 so it is easy for the customer to start using the new portal as it finish-
es because the main concept stays the same.

Layout

We started the building of the online platform from the layout perspective as in Drupal it is relatively
easy to add functionalities to the site later with the inclusion of different modules.

At first we visited Christopher Evatt's current website to see what kind of design style he is using cur-
rently. After this we browsed through different websites that offered layout designs to see what kind of
designs professionals in the field of web design are offering.

Thinking of different layout possibilities

After getting a good grasp on both Christopher Evatt's current site as well as the copious different layout
styles on the web design sites, we opened up Adobe Photoshop and started creating different layout
possibilities.

The first layouts were just tests with different colour schemes and possibilities, but we eventually
learned which colours worked well with each other and how the layout could be constructed to support
the infrastructure that would be added to it later.

Below is one of the better layouts we came up with. We tried to combine many colours, but not in a
way that would make it too flashy or confusing to the end-user and yet have enough colours to keep the
layout interesting and not bland.
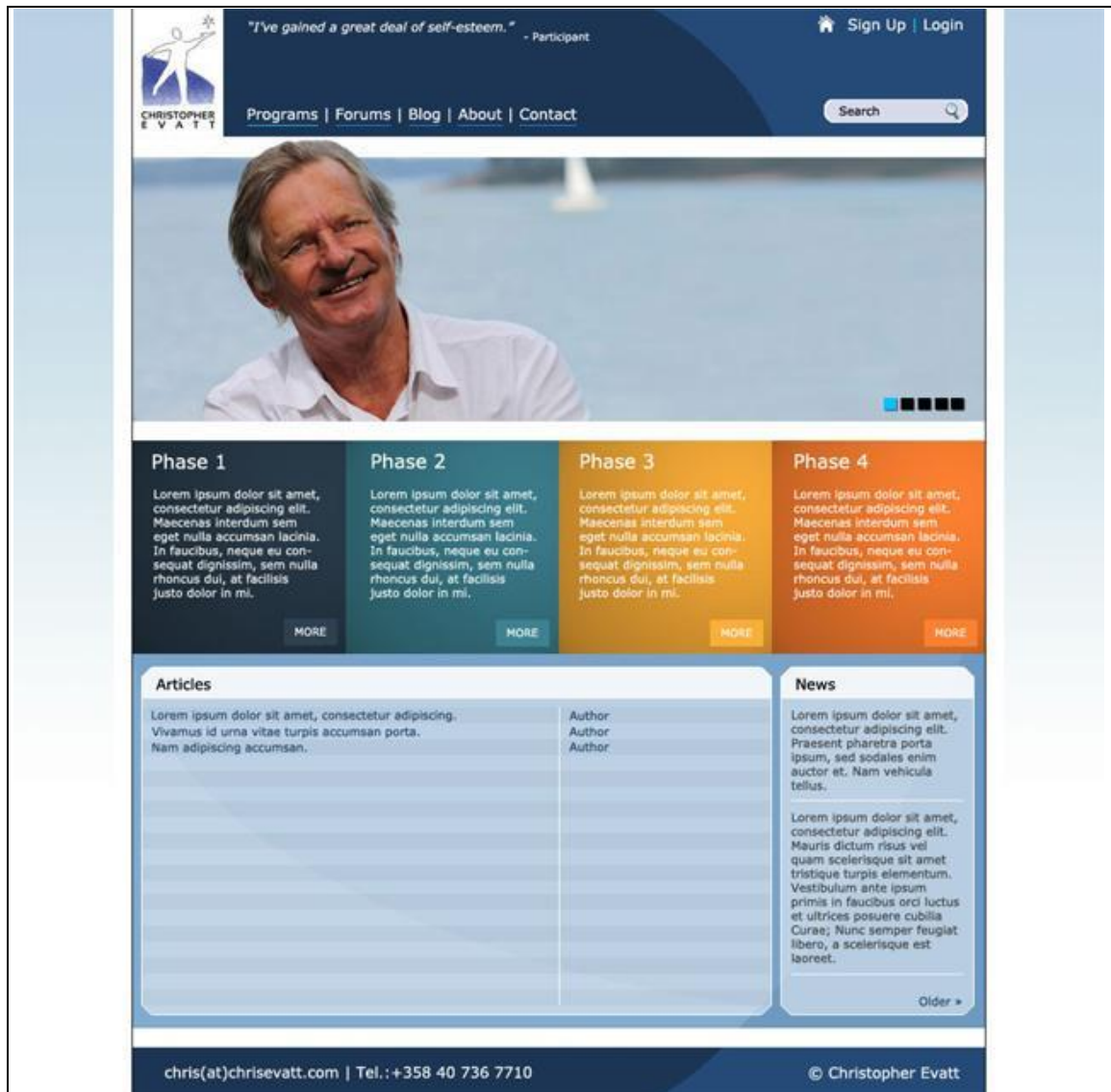
Picture 1: One of the first design with Adobe Photoshop

We presented the layout to Christopher Evatt in a meeting. He liked parts of it, but showed us a website where the design was to his liking. This website was blissclinic.com. Below you can see a picture of the Bliss Clinic layout design.

Picture 2: Bliss Clinic Layout

We bookmarked the blissclinic.com website and later tested how we could incorporate some of the ide-as used in it into our own design. It proved to be a bit more problematic than we first assumed as through quite a few tries we learned that the layouts didn't mix very well. This lead us to go in a slightly different direction by removing some of the information from the front page to make it more simple.
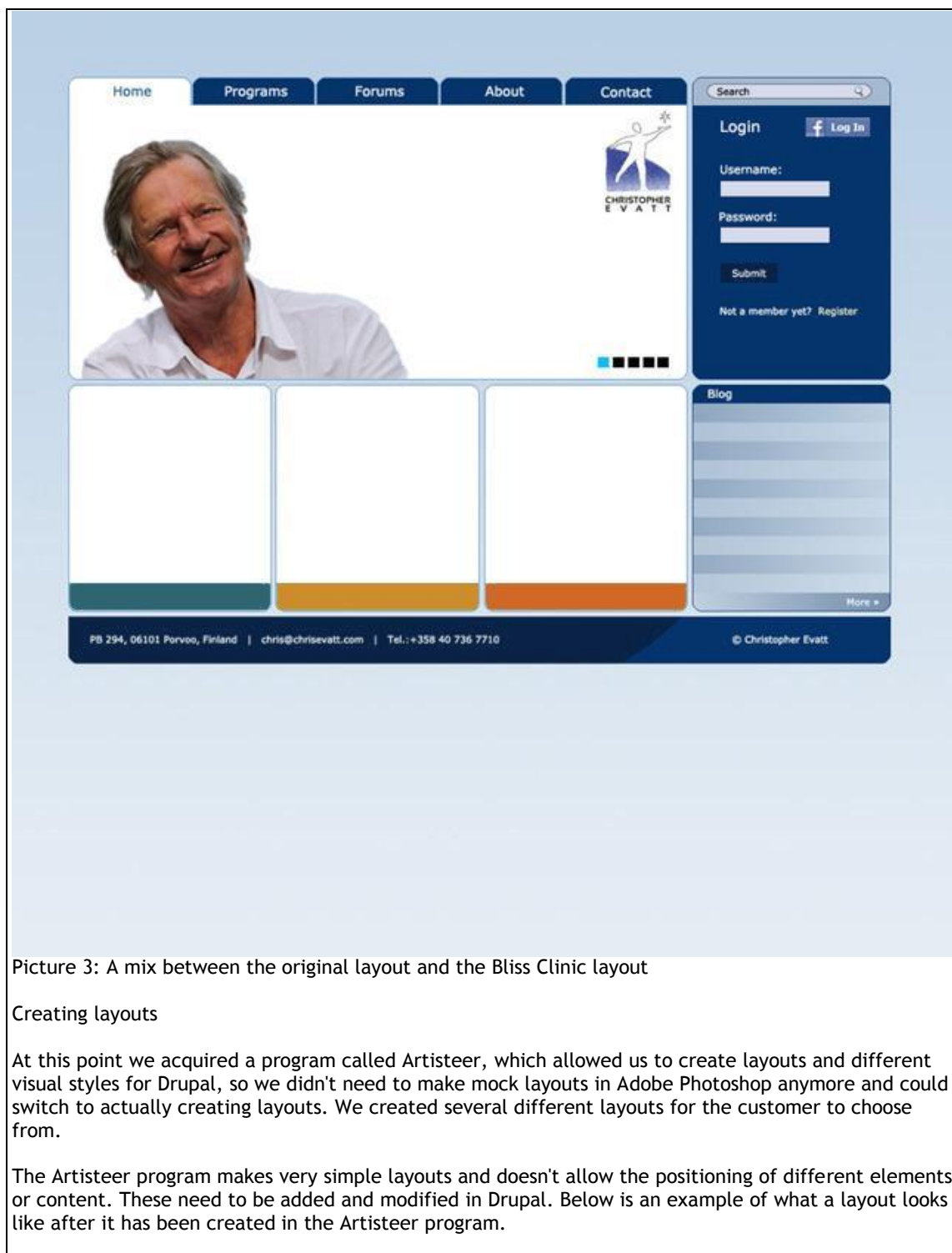
Picture 3: A mix between the original layout and the Bliss Clinic layout

Creating layouts

At this point we acquired a program called Artisteer, which allowed us to create layouts and different visual styles for Drupal, so we didn't need to make mock layouts in Adobe Photoshop anymore and could switch to actually creating layouts. We created several different layouts for the customer to choose from.

The Artisteer program makes very simple layouts and doesn't allow the positioning of different elements or content. These need to be added and modified in Drupal. Below is an example of what a layout looks like after it has been created in the Artisteer program.
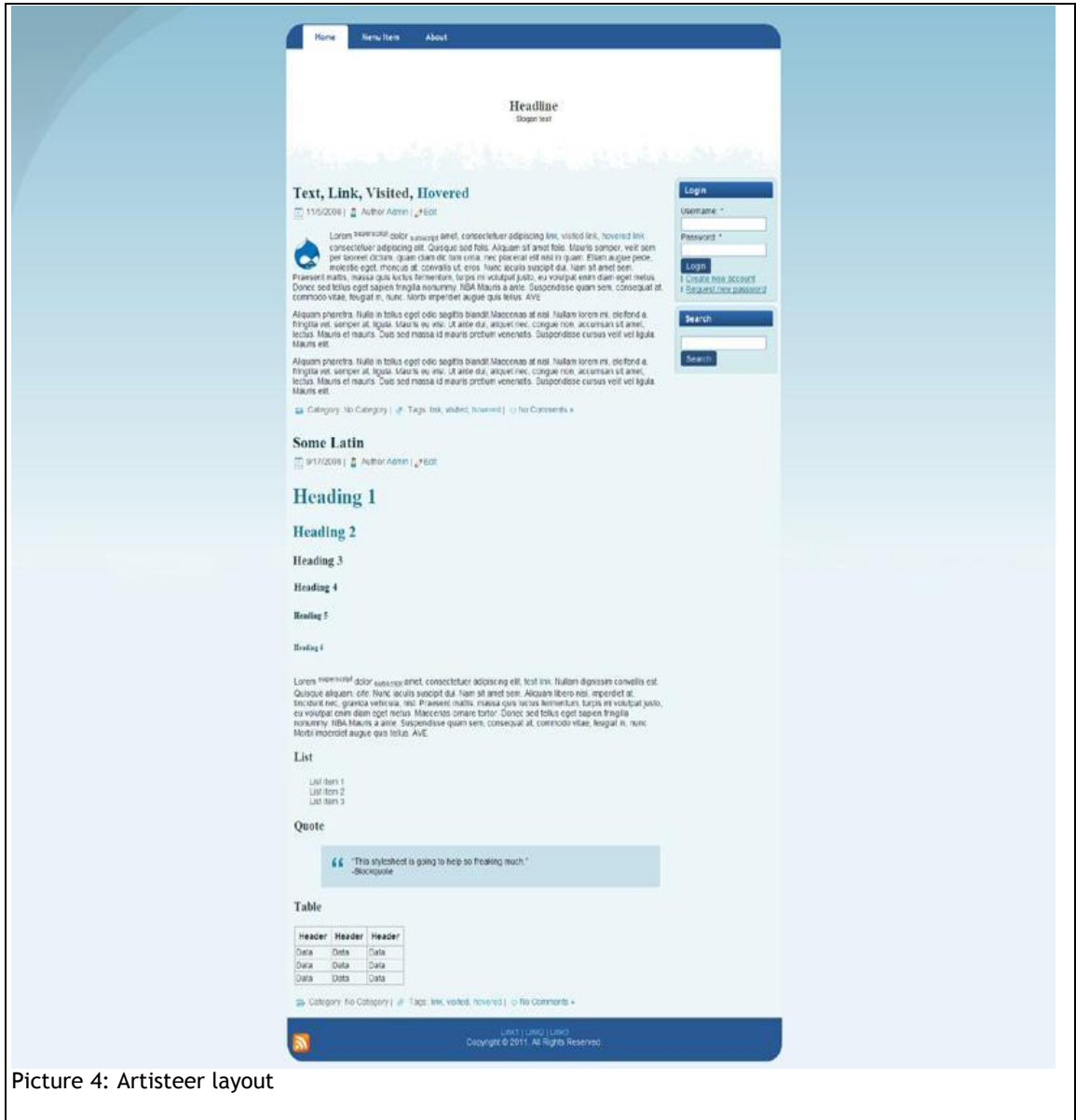
Picture 4: Artisteer layout
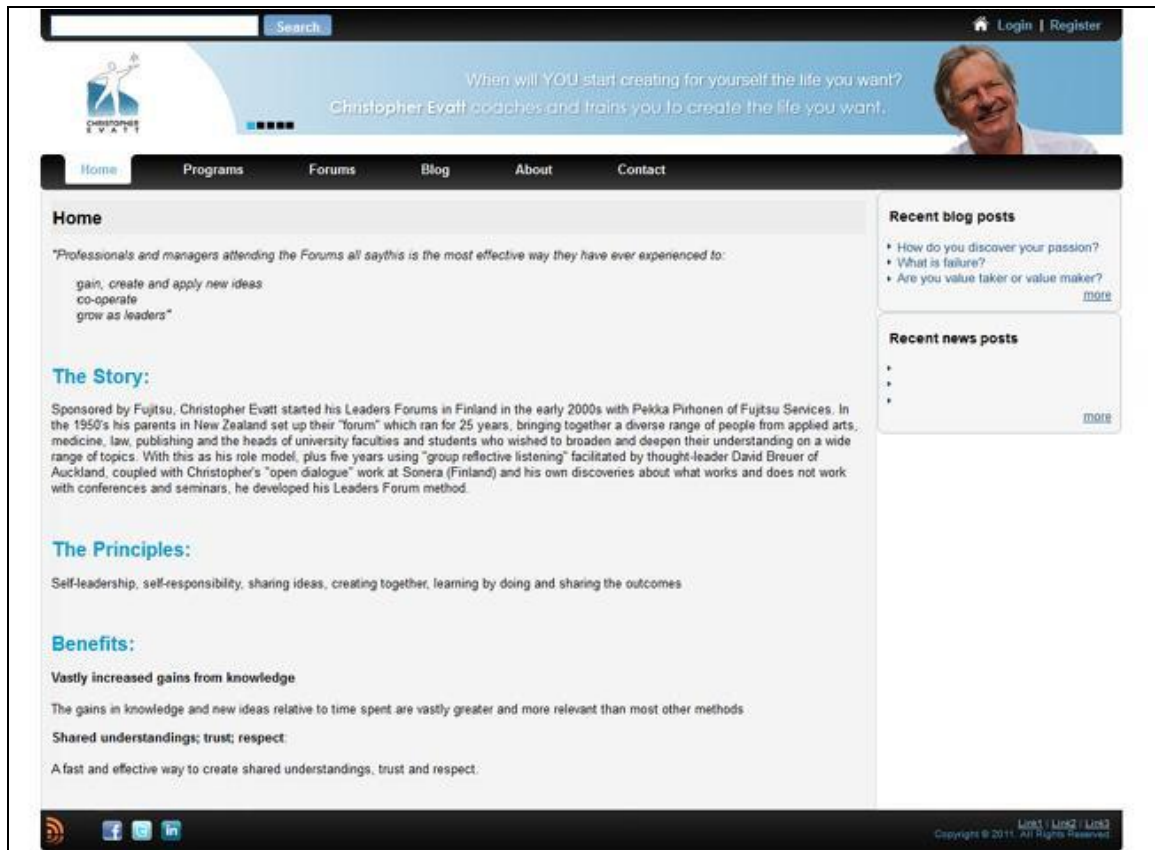
Picture 5: Artisteer layout with pictures and text added to it

Functionalities of the website

Christopher Evatt provided us with a mind map of different functionalities he'd like to have on the website. We studied this mind map and broke it down into a list of functionalities we needed on the website and then started searching for different modules to enable these functionalities.
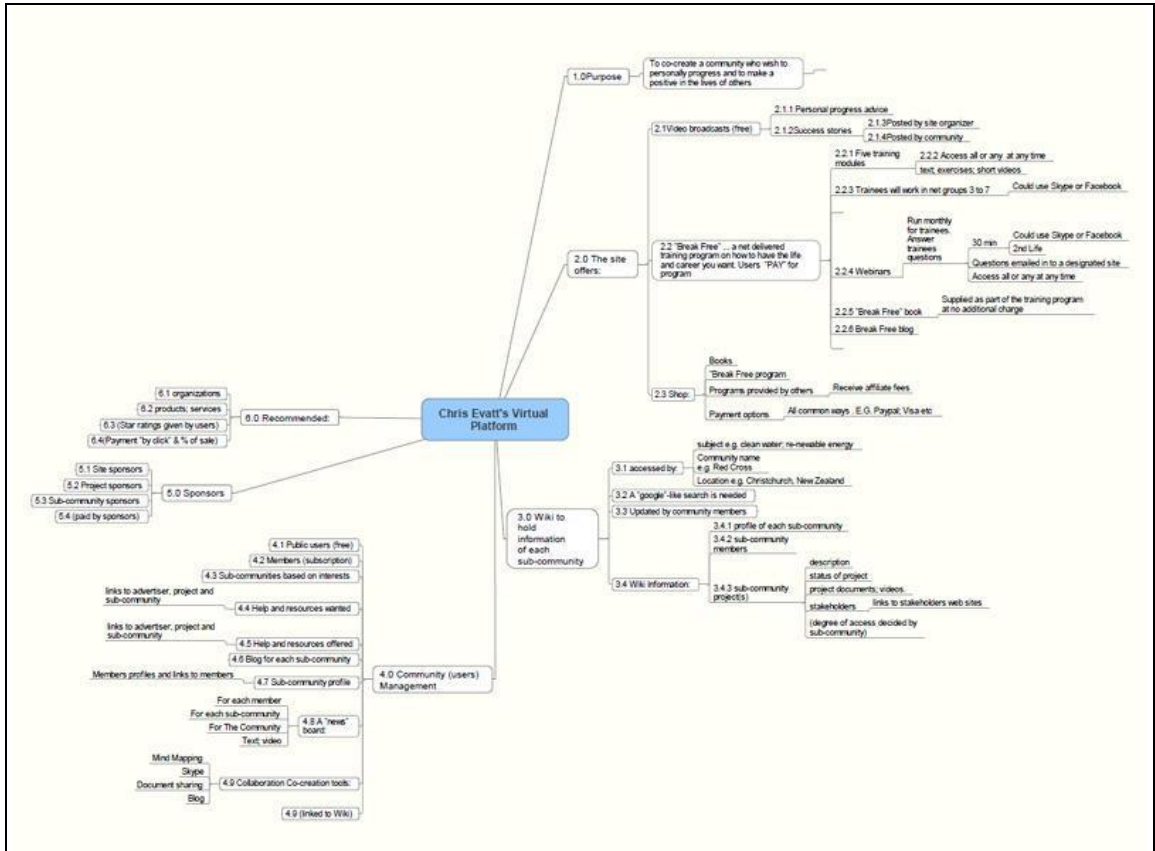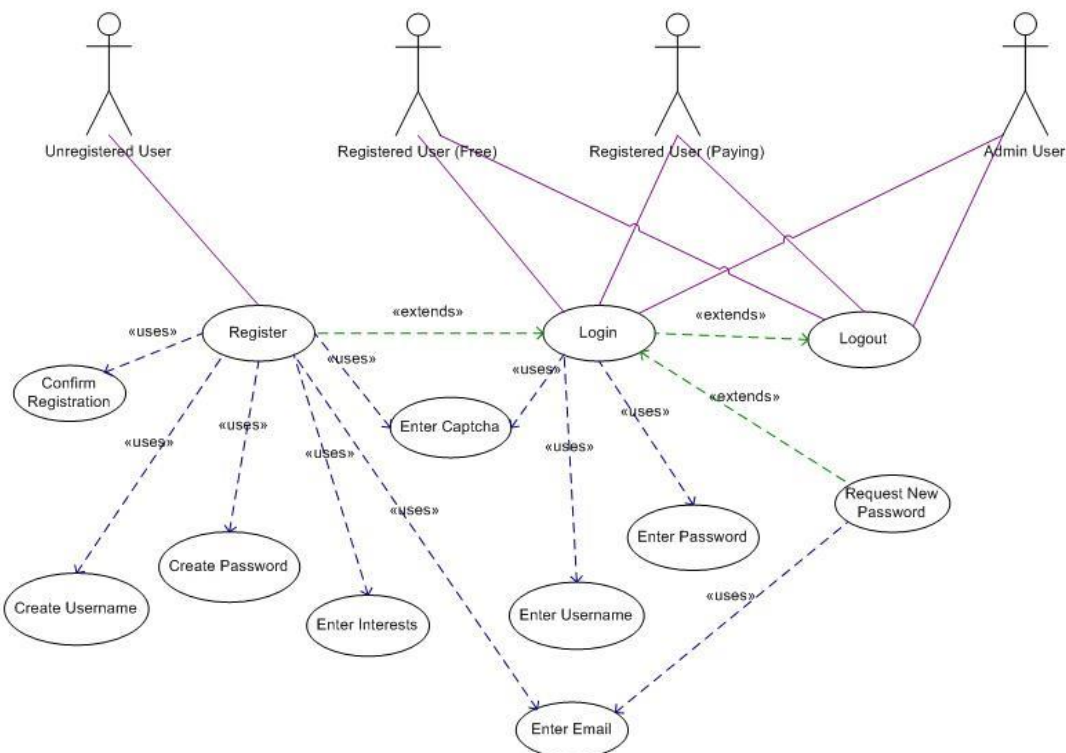
Picture 6: Christopher Evatt's mind map

Defining the core functionalities

We felt that the three biggest things for the website were an open registration- and login system, an e-store and an open community infrastructure. This lead us to create use-case diagrams in UML of all of these functionalities, so that we could understand them and what they do better.

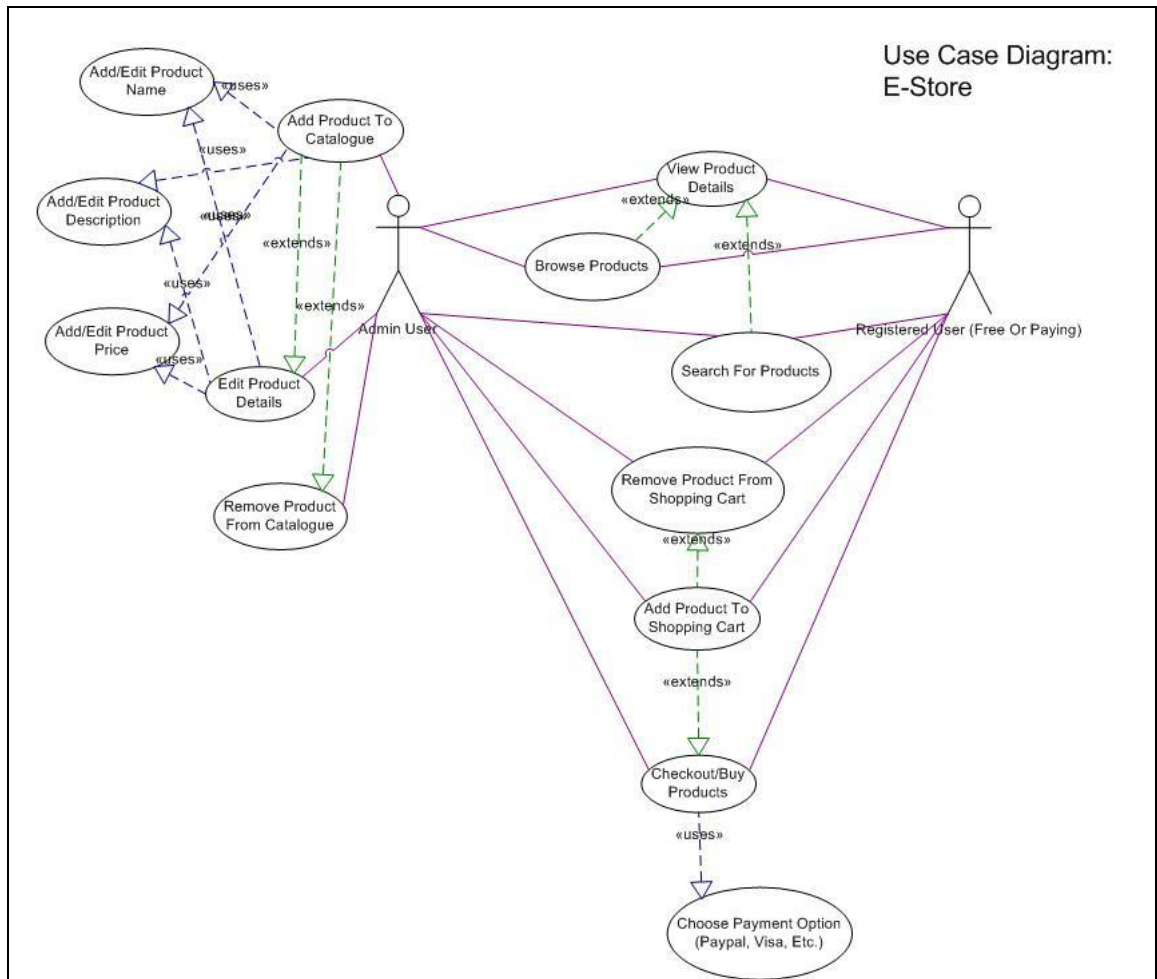Picture 7: Use-case diagram of the registration- and login system

2. Explanation of the registeration- and login system diagram.

The account registeration and sign-up diagram show the functionalitys from non-registered (anonymous) user to the registered free, registered paying and administrator (known) uses.

Unregistered users that enter the platform will receive a registeration function that has which includes features like Creating a U/N(Username), Creating a password, and entering E-mail.
The system will confirm that the user is human by showing him a Captcha image and he has to answer it for the registration to move forward. The system also verifies the users registeration by sending a con-firmation E-mail with an activation link to his/hers E-mail. When a user has activated his account. He can use the login credentials he submited earlier to access the actual content of the platform. The users are asked their U/N and password in the login form with a Captcha which prevents bots from bruteforc-ing accounts from the website.
In the login form users have functionalities that help them receive lost account information like username or password.
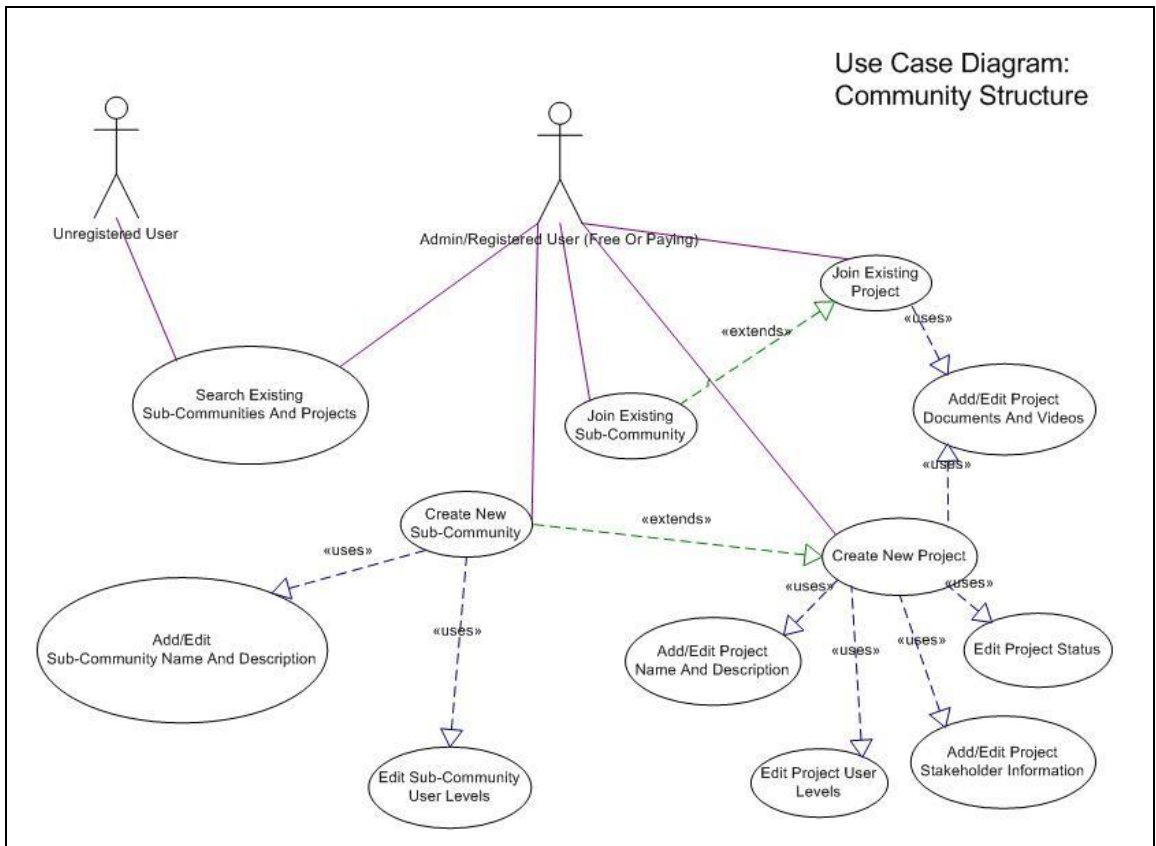
Picture 8: Use-case diagram of the functionalities of the E-store

3. E-store

The main goal of the E-Store is to work as marketing ground for the websites owner, in Christopher Evatts case books and online lectures. Modules we have decided to use are übercart E-store module and the Simple payments module for paypal and credit cart payment.
The Shop is built to provide different products in different categories for the uers (customers) to browse and to buy from. The categories are at start different books/E-books and Break Free programs that are online courses of Christopher Evatt that can be bought from the store. We have planned already to create a affiliate program when other people and companies can also sell their products or services from this site also and pay an "affiliate fee". As I before said we have installed Simple payments module that we are going to use as the base of our creditcard (Visa, Mastercard, etc..) and PayPal payment functionalitys.
We also decided that at first we will make the system work through bank transfers and paypal only because the creditcard systems need alot of testing and benchmarking. As it would not be appreciated by the customers for their account credentials to leak from the website.

Picture 9: Use-case diagram of the community structure

4. Community functionality structure

References

Template Monster | Website Templates | Web Templates: http://www.templatemonster.com/

BLISS CLINIC, Turku:
http://www.blissclinic.fi/

Free Template Designs - All Free Website Templates
http://www.freetemplatedesigns.com/templates.php