

System and Software Architecture Description (SSAD)

Arts and Crafts Website

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Version History

Date	Author	Version	Changes made	Rationale
10/14/12	SJ	1.0	Added section 2.1.1 -2.1.3	Initial version of SSAD
10/24/12	SJ	1.1	Updated section 2.1.3	After inputs from IIV and V changes made to System Context Diagram and added a new use case for a new requirement
10/30/12	SJ	1.2	Updated section 2.1.1, 2.1.2 and 2.1.3	Changes made in System Context Diagram, Artifacts and Information Diagrams and modified use cases as per comments received for Evaluation of Draft FC Package.
11/03/12	SJ	2.0	Added section 3.1-3.3	Changes are made as part of the DCP package
11/25/12	SJ	3.0	Updated section 2.1.1, 2.1.3, 2.1.3. 3.1, 3.2, 3.3	Changes made in System Context Diagram, Artifacts and Information Diagrams and modified use cases as per comments received for Evaluation of Development Core Package. Changes made in the NDI/NCS Interoperability section due to change in the NDI.
11/30/12	SJ	3.1	Updated section 2.1.1, 2.1.3, 2.1.3.	Changes made for the DCR ARB Session
12/02/12	SJ	3.2	Updated section 2.1.1, 2.1.3, 2.1.3.	Changes made after evaluation of draft TRR package
12/08/12	SJ	3.3	Updated section 2.1.1	Changes made after comments received from DCR ARB
12/15/12	SJ	3.4	Updated section 2.1.1, 2.1.2,2.1.3	Changes made after evaluation of TRR package.

Table of Contents

System and Software Architecture Description (SSAD)	i
Version History	ii
Table of Contents	iii
Table of Tables	iv
Table of Figures.....	v
1. Introduction.....	1
1.1 Purpose of the SSAD.....	1
1.2 Status of the SSAD	1
2. System Analysis.....	2
2.1 System Analysis Overview.....	2
3. NDI/NCS Interoperability Analysis	111
3.1 Introduction	111
3.2 System Structure	112
3.3 Evaluation Summary	112

Table of Tables

<i>Table 1: Actors Summary</i>	3
<i>Table 2: Artifacts and Information Summary</i>	4
<i>Table 3: Process Description(View Product Listing)</i>	5
<i>Table 4: Typical Course of Action (View Product Listing)</i>	5
<i>Table 5: Process Description (View Product Details)</i>	5
<i>Table 6: Typical Course of Action (View Product Details)</i>	5
<i>Table 7: Process Description (Add Product)</i>	6
<i>Table 8: Typical Course of Action (Add Product))</i>	6
<i>Table 9: Process Description (Remove Product)</i>	6
<i>Table 10: Typical Course of Action (Remove Product)</i>	6
<i>Table 11: Process Description (Purchase Product)</i>	7
<i>Table 12: Typical Course of Action (Purchase Product)</i>	7
<i>Table 13: Exceptional Course of Action (Purchase Product)</i>	7
<i>Table 14: Process Description (Write a Blog Comment)</i>	8
<i>Table 15: Typical Course of Action (Write a Blog Comment)</i>	8
<i>Table 16: Process Description (Sign up for Updates)</i>	8
<i>Table 17: Typical Course of Action (Sign up for updates)</i>	8
<i>Table 18: Alternate Course of Action (Sign up for updates)</i>	9
<i>Table 19: Process Description (Social Media)</i>	9
<i>Table 20: Table 20: Typical Course of Action (Social Media)</i>	9
<i>Table 21: Alternate Course of Action (Social Media)</i>	9
<i>Table 22: Process Description (Maintain Blog)</i>	10
<i>Table 23: Typical Course of Action (Maintain Blog)</i>	10
<i>Table 24: NDI Products Listing</i>	11
<i>Table 25: NDI Evaluation</i>	12

Table of Figures

<i>Figure 1: System Context Diagram</i>	<i>2</i>
<i>Figure 2: Artifacts and Information Diagram.....</i>	<i>3</i>
<i>Figure 3: Process Diagram</i>	<i>4</i>

1. Introduction

1.1 Purpose of the SSAD

The purpose of the SSAD is to document the results of the object-oriented analysis and design (OOA&D) of the website being developed. The SSAD is used by developers as reference to the system architecture. The website being developed should be faithful to the architecture specified in the SSAD. Furthermore, the SSAD is used by the maintainer and clients to help understand the structure of the system once the proposed website is delivered.

1.2 Status of the SSAD

The status of the SSAD is currently at the Transition phase version number 3.4. This version of the document includes changes in use cases and Context Diagram after evaluation of TRR Package.

2. System Analysis

2.1 System Analysis Overview

The primary purpose of the Arts and Crafts Website is to build a website where the client Amy Hvitfeldtsen can display arts and crafts products for users to buy. The main objective is to donate a part of the profit to a charity. The website will allow the users to view product images and then buy the products. A blog feature will also be available on the website where the client can add blog entries and users can comment on the blog entries. Also, there is an optional newsletter available for the customers where the customers can register so that they can be updated now and then with the new products coming up.

2.1.1 System Context

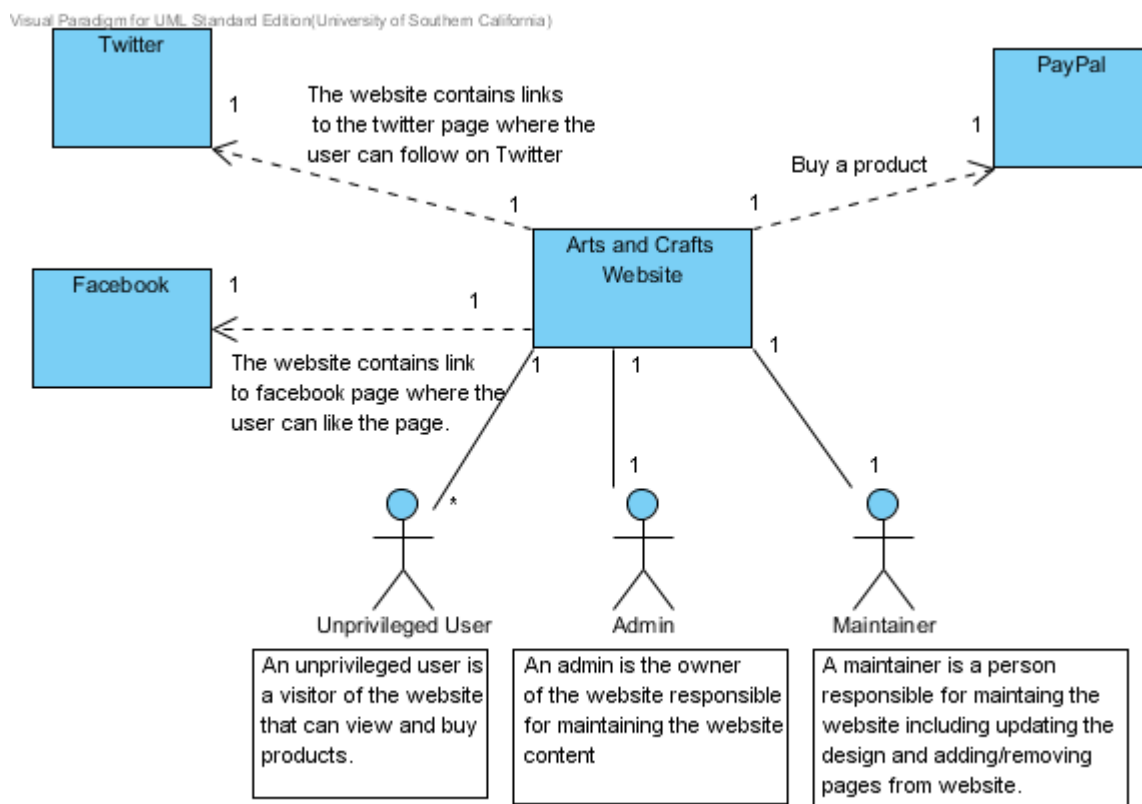


Figure 1: System Context Diagram

Table 1: Actors Summary

Actor	Description	Responsibilities
Unprivileged User	Any person who visits the website	<ul style="list-style-type: none"> Purchase Product View Product Listings Write a Blog Comment
Administrator	The person who is owner of the site	<ul style="list-style-type: none"> Add a blog entry Add/Remove/Update Products Add new pages Change website designs Track visitor for website
Maintainer	The person who maintains the website	<ul style="list-style-type: none"> Add/Remove/Update Products Add new pages Change website designs

2.1.2 Artifacts & Information

The Artifacts and Information Diagram below shows different artifacts of the website. Charity and Product is the information displayed on the website. Customer contains the details of the customer i.e. name and email of the customers who have signed up for the newsletter. Blog contains the different Blog entries and Blog Comments. Customer can buy or view products and similarly, customers can also write Blog Comments.

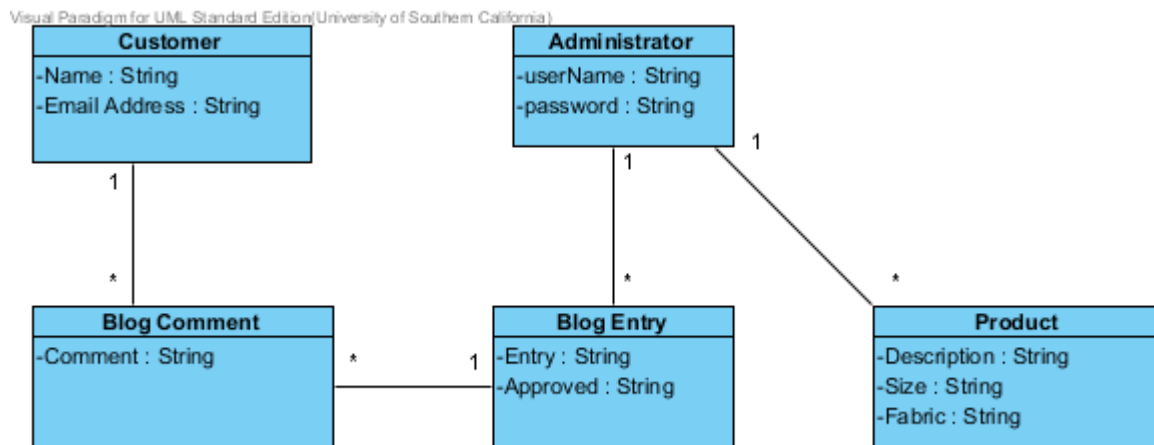
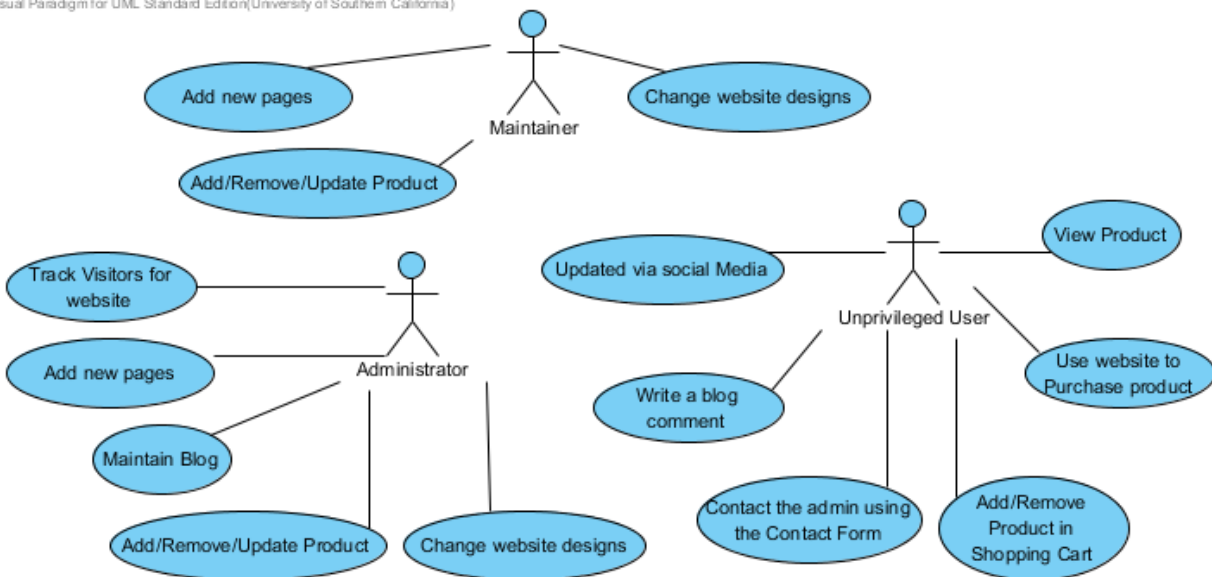
**Figure 2: Artifacts and Information Diagram**

Table 2: Artifacts and Information Summary

Artifact	Purpose
Customer	Helps the admin to send updates about the product to the people present in the newsletter list.
Product	Gives the visitor information about the product such as size, fabric, etc.
Administrator	The username and password of the administrator
Blog Comment	The blog comments written by the customer
Blog Entry	The blog entries added by the administrator

2.1.3 Behavior

Visual Paradigm for UML Standard Edition (University of Southern California)

**Figure 3: Process Diagram**

2.1.3.1 View Product Listing

Table 3: Process Description (View Product Listing)

Identifier	UC-1 View Product Listing
Purpose	Allows the customer to view images of the all the products.
Requirements	WC_1551
Development Risks	None
Pre-conditions	The user must go to the Shop Page
Post-conditions	All the products images are displayed on the Shop page.

Table 4: Typical Course of Action (View Product Listing)

Seq#	Actor's Action	System's Response
1	The user goes to the Shop page	The products images are displayed.

2.1.3.2 View Product Details

Table 5: Process Description (View Product Details)

Identifier	UC-2 View Product Details
Purpose	Allows the customer to view description of the product selected.
Requirements	WC_1280,WC_1282
Development Risks	None
Pre-conditions	The user must go to the Shop Page and click on the product image for which description needs to be viewed.
Post-conditions	The selected products images and description is displayed on the Shop Page.

Table 6: Typical Course of Action (View Product Details)

Seq#	Actor's Action	System's Response
1	The user goes to the Shop page and click on Product image.	The product's images and description is displayed.

2.1.3.3 Add Product to Shopping Cart

Table 7: Process Description (Add Product)

Identifier	UC-3 Add Product to Shopping Cart
Purpose	Allows the customer to add product in the Shopping Cart
Requirements	WC_1266
Development Risks	None
Pre-conditions	The user must go to the Shop page and click on the product image.
Post-conditions	The selected Product is added in the Shopping Cart

Table 8: Typical Course of Action (Add Product)

Seq#	Actor's Action	System's Response
1	The user clicks on Product image on Shop Page	The product images and description along with Add to Cart button is displayed
2	The user clicks on the Add to Cart button	The selected product is added to the Cart

2.1.3.4 Remove Product from Shopping Cart

Table 9: Process Description (Remove Product)

Identifier	UC-4 Remove Product from Shopping Cart
Purpose	Allows the customer to remove products from the Shopping Cart
Requirements	WC_1266
Development Risks	None
Pre-conditions	The user is on the Shop page and product selected to remove must already be added in the Shopping Cart.
Post-conditions	The selected Product is removed from the shopping cart.

Table 10: Typical Course of Action (Remove Product)

Seq#	Actor's Action	System's Response
1	The user clicks on View Cart button on the Shop Page.	All the products are added in the shopping cart are listed
2	Select the product to remove and click on remove button	The selected product is removed from the Cart.

2.1.3.5 Purchase Product

Table 11: Process Description (Purchase Product)

Identifier	UC-5 Purchase Product
Purpose	Allows the customer to purchase product.
Requirements	WC_1264
Development Risks	None
Pre-conditions	The user is on the Shop page and has at least one product in the shopping Cart.
Post-conditions	The user is directed to the Pay-pal service

Table 12: Typical Course of Action (Purchase Product)

Seq#	Actor's Action	System's Response
1	The user clicks on Checkout Button	The user is shown a list of all the items in the shopping cart and a 'Pay with PayPal' Button
2	The user clicks on the Pay with PayPal button	The user is directed to Payment Gateway.

Table 13: Exceptional Course of Action (Purchase Product)

Seq#	Actor's Action	System's Response
1	The user clicks on Checkout Button	The user is shown a list of all the items in the shopping cart and a 'Pay with PayPal' Button
2	The user clicks on the Pay with PayPal button	In case the PayPal service is down and a transaction cannot be made, an error message is displayed 'Unable To Proceed, Try again Later.'

2.1.3.6 Write a Blog comment

Table 14: Process Description (Write a Blog Comment)

Identifier	UC-6 Write a Blog Comment
Purpose	Allows the customer to comment on a blog
Requirements	WC_1267
Development Risks	None
Pre-conditions	The user must click on the Blog Link. This link is present at the bottom of all pages.
Post-conditions	The comment written by the user is sent to admin to confirm.

Table 15: Typical Course of Action (Write a Blog Comment)

Seq#	Actor's Action	System's Response
1	The user clicks on the Blogs Link.	The Blogs Page is displayed in a new window.
2	The user enters name, email and comment and clicks on Post Comment	The comment is sent to admin for confirmation.

2.1.3.7 Give Feedback

Table 16: Process Description (Sign up for Updates)

Identifier	UC-7 Give Feedback
Purpose	Allows the customer to send email to the client to give feedback.
Requirements	WC_2271
Development Risks	None
Pre-conditions	The user is on the Contacts Page.
Post-conditions	An email is sent to the client with the feedback given.

Table 17: Typical Course of Action (Sign up for updates)

Seq#	Actor's Action	System's Response
1	The user enter the name, email, subject and comments in the respective text boxes and clicks on Send	A success message is displayed at the bottom of the page and an email is sent to the client with the user's name email and Comments.

Table 18: Alternate Course of Action (Sign up for updates)

Seq#	Actor's Action	System's Response
1	The user enters the comments in the comment text boxes and clicks on Send	An error message is displayed at the bottom of the page that 'Please confirm the fields and submit it again.' The mandatory fields that the left blank are highlighted in red.

2.1.3.8 Updated by Social Media

Table 19: Process Description (Social Media)

Identifier	UC-8 Updated by social media
Purpose	Allows the customer to go the Facebook and twitter pages
Requirements	WC_1276
Development Risks	None
Pre-conditions	The user must click on the Facebook or twitter link. These links are provided at the bottom of all pages
Post-conditions	The user is redirected to the Facebook or twitter page.

Table 20: Typical Course of Action (Social Media)

Seq#	Actor's Action	System's Response
1	The user clicks on Facebook link at the bottom of the Page.	The website page on Facebook is liked by the user.
2	The user clicks on the Twitter link at the bottom of the Page.	The user starts following the website on Twitter.

Table 21: Alternate Course of Action (Social Media)

Seq#	Actor's Action	System's Response
1	The user clicks on Facebook link at the bottom of the Page.	The user is redirected to the Login page of Facebook
2	The user clicks on the Twitter link at the bottom of the Page.	The user is redirected to Login page of Twitter.

2.1.3.9 Add a blog entry

Table 22: Process Description (Maintain Blog)

Identifier	UC-9 Add a blog entry
Purpose	Allows the admin to maintain a blog
Requirements	WC_1273
Development Risks	None
Pre-conditions	The admin is on the Blogs Page
Post-conditions	The entry written by the admin is added in the blog

Table 23: Typical Course of Action (Maintain Blog)

Seq#	Actor's Action	System's Response
1	The admin adds a blog entry	An inbuilt plugin is used for blogs which filters the blog entry for any bad html tags and if correct, stores it in the database. The blog entry added is shown amongst the other blog entries already present in the system.

3. NDI/NCS Interoperability Analysis

3.1 Introduction

Our project is a single NDI project. All of our functionalities are provided by Wordpress. Wordpress is used for building website. The various requirements such as shopping cart, blog and product listings are provided by Wordpress modules. Since all of these modules are present in Wordpress itself, it is needless to discuss the interoperability of these components.

3.1.1 COTS / GOTS / ROTS / Open Source / NCS

Table 24: NDI Products Listing

NDI/NCS Products	Purposes
Wordpress	Platform to provide all functionality in website.

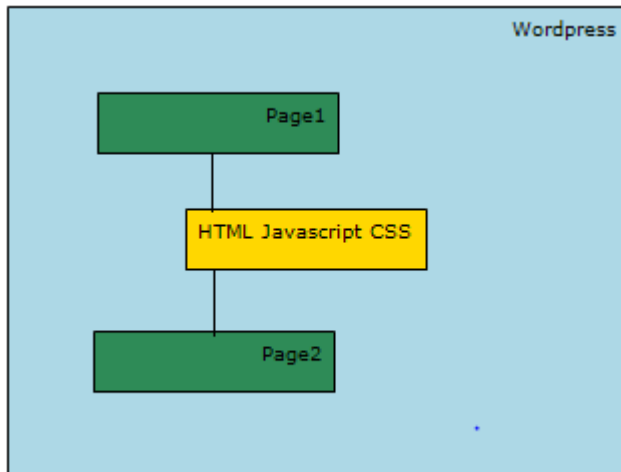
3.1.2 Connectors

We do not have any connectors because we have only one NCS

3.1.3 Legacy System

There is no current system.

3.2 System Structure



3.3 Evaluation Summary

Table 25: NDI Evaluation

NDI	Usages	Comments
Wordpress	Wordpress provides an open source blogging feature and shopping cart module along with the capability to modify the user interface.	Positive Points Ease of use Flexible in designing the user interface Negative Points The website is difficult to maintain in Wordpress than Webs.