Development of Web UX Pattern System for Wordpress Service, and Design Suggestion for Wordpress Theme Filtering Service

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ABSTRACT

This study focused on realizing the UX pattern elements for Wordpress service, and applying the UX pattern approach to enhance UX consideration in Wordpress theme service. The Wordpress UX pattern system was developed based on web UX pattern analysis, and on characteristics of Wordpress components and theme filtering tags. The Wordpress UX pattern system was further analyzed in 22 popular Wordpress themes and 20 web UX scenarios, to evaluate its working by defining theme UX as a case study. The Wordpress theme filtering service GUI was designed based on the Wordpress UX pattern system as a design suggestion. Web technology is evolving rapidly, and web design has become a ready-made service with less user experience consideration, or design creativity. This study directs to keep track of UX value in an emerging web service paradigm.

Key words: *Web UX Pattern, Web Design, Wordpress Theme.*

1. INTRODUCTION

1.1 Pattern based approach in Design

Design pattern means methodological approach providing a guide for implementing solutions in a consistent manner for the recurrent problems occurred in a certain design domain.

Since C. Alexander (1979) introduced design pattern in his design domain, Architecture, the concept of design pattern has influenced widely on design approaches in many research domains [1]. More recently, design pattern has been adopted by technology-related design disciplines such as programming language design, interaction design, and games design. Because design pattern mainly deal with well-known problems in a specific field, the application field should have sufficient technological experiences and use cases so that the field could discover overall and repetitive patterns of context-problem-solution relationships in the domain. Web design field is a good application domain for pattern driven approach since it has varieties of user experiences from early 1990s, and web technology has come in quite mature and stable stage.

1.2 Web design and Web development patterns

Pattern based approach in web design is shown early-2000, but they are constantly updated by late-2000 due to technological changes and new web service domains are emerged. The list of web experiences and related UI design patterns which provide guidance for user-centered design in web services, has been evolved and added in form of guidebook editions, or of web based pattern service updates [22], [28].

P. Diaz et al. (2008) developed web pattern catalog, called Hyper patterns, in online form using ontological structure in pattern description. She studied the differences and concerns of end users pattern search strategy according to different user's goals: adhering to design goals, recreating similar systems, and looking for ideas. Then compared users' pattern usage strategies and usability of pattern description components [3]. I noticed on the user context of 'recreating similar systems', that users tend to browse visual design (image) of sites in pattern catalog, where design defined by the pattern elements.

In web development technology, Contents Management System(CMS), a novel form of web development service is emerged which is modular, pattern driven software service to improve quality and speed up development time. Wordpress is a free, open-source CMS service established 2003, and becomes most popular CMS service which occupies 59.2% of all the websites whose contents management system, 26.6% of all web services [29]. Wordpress service consists of modular file system and data templates so that it provides core contents structure, while additional functions are implemented by various plug-ins according to developer or contents provider's needs. Wordpress like CMS services changed main activity of web development to assemble modular components which enables fast implementation and easy management.

Table 1. Main Wordpress template elements of Wordpress theme files group

File category	Files	Role of the file
Page presentation template files	index.php	Home page contents Main template of theme
	single.php	Page template of other pages besides home
Page component template files	header.php	Header contents of page
	sidebar.php	Sidebar contents of page
	footer.php	Footer contents of page
	search-form.php	Search form template
	comments.php	Comments form of post page
Design/ function Template files	style.css	Design & layout of site
	functions.php	User defined functions

1.3 Web design and UX patterns in Wordpress

Web design in Wordpress is very different process in comparison to conventional web design. Web design in Wordpress is defined by 'Theme' files, which are a set of files implement looking and interaction of Wordpress contents.

Wordpress service defines that Wordpress theme controls the general look and feel of web site including things like page layout, widget locations, and default font and color choices.

Wordpress service provides a wide range of themes for users to choose from in the Theme Showcase where each theme has an about page that includes features and instructions. New themes are always being added, so users can change the theme as often as they like [31].

Such separation of design from contents in web service development enables to apply various design solutions for one service. Wordpress.com which is web hosting platform based on Wordpress service provides over 370 themes, and the number of theme is continuously growing. Users can choose any design theme from them and apply at any time, even in the middle of web service. These changes brings novel design problem in web design: What is the right theme design for user's desired service? How can user find the right theme in hundreds of design choices? Wordpress theme design is based on visual variation of modular components of web development pattern elements, so it does not apply UX viewpoints. Wordpress users can not find the right theme design in terms of user experiences because themes are not introduced or browsed by UX view point. This study focused on finding the UX pattern elements for Wordpress service, and applied UX pattern approach to enhance UX consideration in Wordpress theme service.

2. METHODS

To find out the relationships between web UX pattern and Wordpress theme design, I tried to construct standard web UX pattern structure from various UX pattern references. There are many UX pattern research references in guide books or in online contents services, but they have different strategies for defining UX pattern elements with different viewpoints. So I found most common pattern structure and matched that with Wordpress components to relate the two different worlds.

Wordpress themes are browsed by theme filtering tag in popular Wordpress theme markets. I explored three Wordpress markets and analyzed problems of theme filtering system and UX issues of theme design. Then I developed Wordpress UX pattern system based on web UX pattern analysis and characteristics of Wordpress components and filtering tags.

I tested my Wordpress UX pattern system in 22 popular Wordpress themes to find out it works for defining theme UX as a case study.

As a final research result, I suggested Wordpress theme filtering service GUI, so that users could find right themes by UX centered theme browsing. New Wordpress theme filtering service has two version, one is a set of filtering tag list for experienced, design savvy users, the other is a set of pop up page guides for novice, non-designer users.
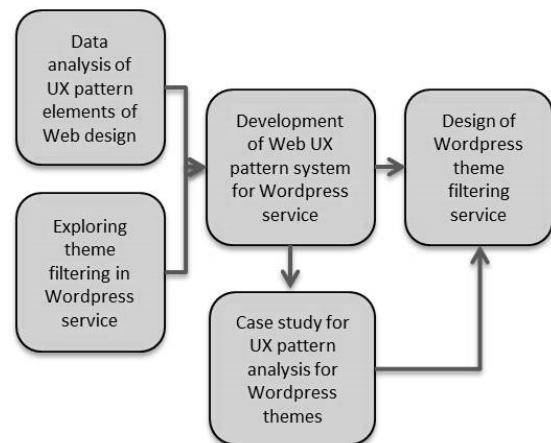

Fig. 1. Research process

3. FINDINGS

3.1 Web UX pattern elements

I analyzed pattern structures of 3 web pattern book references, 2 online web pattern services, and collected web pattern key words from 28 online articles about annual web trends, which issued from 2013 to 2015, to find out common web pattern structure and its elements. Up-to-date and widely known references in web pattern design are searched and chosen as the research resources. For web trends information, I googled with key word "web trends 2013(or 2014, 2015)" then selected articles from well-known web magazine or web service portal, for example, awwwards.com [2], [4]-[22], [25]-[28], [30], [33]-[39].

Hyper patterns of P.Diaz et al.(2008) is not relevant for this study because that does not include up-to-date web experiences and the patterns are broad scope including web experience in general, rather than web design experiences [3].

From all the resources, I categorized 4 UX pattern structures: contents pattern, structure pattern, GUI pattern and functional pattern. The focus of pattern categories are different by resources, for example, book references and online pattern services have richer pattern descriptions and cases on structure patterns, while web trends articles have more focus on GUI patterns. For functional patterns, which consists of patterns for social service, e-commerce service and interaction style, but those are provided mainly by additional plug-ins in Wordpress service, which are not dependent on main features of design theme. For contents pattern, only D.K. Van Duyne et al.(2007) deals with it in significance, but Wordpress theme tags have rich information on contents pattern. So it should be included as main pattern categories for Wordpress UX pattern research. Each pattern element of all resources are restructured and positioned into this 4 category pattern structures so that any pattern can be positioned and related in the unified pattern system. Table 3 and Table 4 shows structural pattern and GUI pattern of UX pattern structure collections, which analyzed from the selected resources and its' related Wordpress tags.

3.2 Wordpress Theme Filtering Service and tags

I explored Wordpress theme markets of Wordpress.com, which is the most popular Wordpress-based hosting service, and of Themeforest.net, which is the biggest Wordpress theme market, to see how users browse themes they want. Each Wordpress theme has a set of tags which describes design characteristics of the theme. Both Wordpress theme markets provides keyword search by tags and theme filtering service with structured tag list. For theme filtering, Wordpress.com has filtering category, which consists of contents type, features, layout, color and price selections while Themeforest only provides contents category. Theme filtering is the only place to find and describe the design themes in a structural way [24], [31].

Table 2. Wordpress theme filtering categories and selective options (Wordpress.com, January 20th, 2015)

Theme Filtering Category	Selective Options
Colors	Black Blue Brown Gray Green Orange Pink Purple Red Silver Tan White Yellow Dark Light
Columns	One column Two Columns Three Columns Four Columns Left Sidebar Right Sidebar
Layouts	Fixed Layout Fluid Layout Responsive Layout
Subjects	Announcement Art Artwork Blog Business Cartoon Cities and Government Collaboration Craft Design Education Fashion Food Gaming Holiday Hotel Journal Lifestream Magazine Major League Baseball MLB Music Nature News Outdoors Partner Photoblogging
	Photography Portfolio Productivity Real Estate School Scrapbooking Seasonal Sports Travel Tumblelog Video Wedding
Features	Author Bio/Accessivility Ready/Custom Background/ Custom Colors/Custom Design/ Custom Header/Custom Menu Editor Style/Featured Images/Featured Header/Flexible Header Front Page/ Post Form/Full Width Template/ Infinite Scroll Microformats/Post Formats/Post Slider/RTL Language/ Support Site Logo/Sticky Post/Theme Options/WordAds/ Threaded Comments/Translation Ready
Styles	Abstract Artistic Bright Clean Colorful Conservative Contemporary Curved Dark Earthy Elegant Faded Flamboyant Flowery Formal Funny Futuristic Geometric Glamorous Grungy Hand Drawn Handcrafted Humorous Industrial Light Metallic Minimal Modern Natural Paper-Made Playful Professional Retro Simple Sophisticated Tech Textured Traditional Urban Vibrant Whimsical

By building affinities for theme filtering experiences, 4 main problem domains are discovered. First, filtering results are not satisfactory because that the range of difference of the results list is minimal. Second, color or mood filtering is not much meaningful since it is very easy to customize the color of design theme through theme customization dash board at any time. Third, theme filtering service provides many contents filtering selections, but they are not much clearly segmented. Forth, conventional web UX pattern elements such as contents structure or navigation elements are not provided as filtering tag so that users can hardly understand the site structure of the theme.

And theme descriptions and tags often uses trendy words such as 'responsive', or 'one page layout' to stand out new themes like promoting fashion items. Wordpress themes are spend out as often as ready-made fashion, so it is sensitive to media trends, uses fancy tags to attract users' attention. It is challenging to map these trendy characters with stable, and consistent UX pattern approach.

Table 3. Structural pattern elements from the Selected Resources and Related Wordpress Tags
(Resources: Designing Interface(A), Rich Interface Design(B), Design of the sites(C), User Interface Design Pattern(D), Yahoo Design Library(E), Web Design Trends 2013(13), Web Design Trends 2014(14), Web Design Trends 2015(15), wordpress.com(F) themeforest.com(G))

Structural Elements			Pattern Book	Online Pattern Library	Web Design Trends 2013 ~ 15	Wordpress Tag
Site	Layout	Theme			Responsive web (13, 14, 15) Single Page (13) Layout inspiration from print (13) One Page web (14) Minimalize (15)	Responsive Layout(F) Responsive(G) Fluid Layout(F) Fixed Layout(F) One page(G) Theme Options(F) Full Width Template(F) Retina(G)
		Layout Grid	Visual Framework (A) Grid of Equals (A) Center Stage (A) Right/ Left Alignment (A) Diagonal Balance (A) Modular (B) Overlay (B) Grid Layout (C) Fluid Layout (C) Fixed Layout (C)		Dynamic Grid Layout(13) Vertical Split Layout (13)(15) Breaking chunks of content (14) Tile Layout (15) Modular Grid Layouts(15)	One Column(F) Two Columns(F) Three Columns(F) Four Columns(F)
		Mobile	Stacked (A) Infinite List (A) Thumbnail and Text List (A) Generous Borders(A)	Mobile(E)	Mobile Optimization(15)	
Page	Data Presen-taion	List	Row Striping (A) The List (A) Cascading Lists (A) Grouped List (B)	Thumbnail(D) Article List(D)		Threaded Comments(F)
		Table	Tree Table (A) Radial Table (A) Sortable Table (A)			
		Image	Carousel (A)	Carousel(D)(E) Slideshow(D) Gallery(D) Image Zoom(D)		Slider(G) Gallery(G)
		Alignment	Pyramid (A) New-Item Row (A)	Alphanumeric Filter Link(E)		
		Map	Sequence Map (A) Tree map (A)	Copy Box(D)		
		Scrolling	Annotated Scrollbar (A)		Parallax scroll (13) Infinite Scrolling (13) More scroll (14) Click-like scroll (15) Innovative Scrolling(15)	Infinite Scroll(F) Parallax(G)
		Etc.		Tag Cloud(D) Event Calendar(D)		
	Inter-action	Recognition	Progress Indicator(A)(B) Always Visible Tools (B) Multi-level Tools (B) Action Invitation (B) Browsing (B) Error message (C)	Cursor Invitation(E) Drop Invitation(E) Hover Invitation(E) Tooltip Invitation(E)		Sticky Post(F)
		Mouse Action	Hover Tools (A) Drag and Drop (B) Toggle (B) Mouse over (B)	Drag and Drop Modules(E)	Rollover Effects (13)	
	Form	Blank/ Write	Fill-in-the-Blanks (A)	Captcha(D) In place Editor(D)	Inline editing (13)	Front Page Post Form(F) Page Builder(G) Micro formats(F) Post Formats(F) Editor Style(F)

		Selection	Dropdown Chooser (A) Toggle selection(B) Collected Selection(B) Object Selection (B) Multi selection (B) Drill down option (C)	Calendar Picker(D)(E)		
		Input Assistance	Multi-Level Help (A) Input Prompt (A) Clear Entry Points(A) Password Strength Meter (A) Input Hints (A) Auto completion (A) Same-Page Error Messages (A) Good Defaults (A) Preview (B) Auto complete (A)(B) Process feedback(C)	Good Defaults(D) Input Prompt(D) Live Preview(D) Password Strength Meter(D) Input Feedback(D) Forgiving Format(D)		
Navi-gation	Type	In Content Internal/ Anchor	Process> Box overlay process (B) Static Single page process (B) Inline assistant process (B) Interactive Single page process (B)	Wizard(D) Inline Help Box(D) Tour(D) Blank Slate (Process Preview)(D) Steps Left (D)		
			Links> Deep-linked State(A) Breadcrumbs (A) Contents link (C) Current page link (C) Quick Menu (C)	Home Link (D) Bread crumbs (D) Shortcut Dropdown (D)		
		In Content External	Escape Hatch (A) External Link (C)			
		Search Filter		Live Filter(D) Table Filter(D)		
		Search Filtering widget	Alphabet Scroller (A)	Auto complete (D)(E)		
		Menu Tab	Module Tabs (A) Browsing Tabs (C)	Navigation Tabs (D)(E) Module Tabs (D)(E)		
		Dropdown / Accordion Menu	Collapsible Panels (A) Accordion (A)	Horizontal Dropdown Menu(D) Vertical Dropdown Menu(D) Accordion Menu(D)		
		Header/ Footer Menu	Fat Footer (A)	Fat Footer(D)		
		Sitemap	Sitemap Footer (A) Site map (C)			
		Pagination	Titled Sections (A) Pagenation (A)	Pagination(D) (E) Item Pagination(E)		Post Slider(F)
	Bar Posi-tion	Fixed			Fixed Header Bar (13) Static headers (13) Fixed navigation (14) Navigation Widget(15) Sticky menu (15)	
		Hidden			Hamburger menu (13) Hidden Navigation (15) Collapsible Menu (15)	
		Left/ Right/ Top		Top Navigation Bar(E) Left Navigation Bar(E)	Left navigation (13)	Right Side bar(F) Left Side bar(F)

Table 4. GUI pattern elements from the Selected Resources and Related Wordpress Tags
(Resources: Designing Interface(A), Rich Interface Design(B), Design of the sites(C), User Interface Design Pattern(D), Yahoo Design Library(E), Web Design Trends 2013(13), Web Design Trends 2014(14), Web Design Trends 2015(15), wordpress.com(F) themeforest.com(G))

GUI elements			Pattern Book	Pattern Library(E)	Web Design Trends (2013-2015)	Wordpress tag (F) (G)
Site Style	Visual	Mood			Simple Visual(13) Metro Design(13) Minimalism(13,14) Typography (13,14.15) Flat Design(14,15) Monochromatic- Design(14) App Stile GUI(14) Use of White Spaces (14) Low Poly Style(15) Bigger is better(15) Mesh-up UI(15) Pattern(15) Non-box shape (15)	Custom Style , Conservative, Urban Futuristic, Humorous, Professional, Elegant Sophisticated, Modern, Contemporary, Vibrant, Funny, Earthy, Formal, Glamorous, Whimsical, Artistic, Retro, Tech, Playful, Faded, Natural, Abstract, Traditional, Whimsical, Industrial, Flamboyant------- (F) Elegant, Clean, Minimal, Simple, Modern, Flat - -----(G)
		Color/ Texture				Bright, Dark, Colorful, Handcrafted, Grungy, Paper Made, Curved, Geometric, Flowery, Textured, Metallic (F)
	Transition (Interaction)		Animated Transition (A) Movable Panels (A) Lighten (B) Enlargement (B) Blurring (B) Animation (B) Spot light (B)	Animate, Dim, Slide, Collapse Expand, Cross Fade, Brighten, Self Healing, Spotlight, Fade In / Out	CSS3 animations(13) Spoonful of animation less Pop-over(15)	Translation Ready(F)
	Navigation Style				Non-linear Navigation(13) Full Screen Navigation(15) Perfection of the Super-sized Menu(15)	Features Header(F) Flexible Header(F)
Page Style	Visual Element		Hairlines (A)		Circular Design (13) Elements(13) Animated Page (13) CSS Transparency(13) Deep Box Shadows(13) Supersized buttons(13) SNS Button(13,14) Vector Icons(13,14) Big Graphic Elements(14) Geometric Design (14) Perpetual Loading Screens(14) Infographic(14,15) Ghost button(14,15) line Icon(15) Hand-drawn Elements(15) Interactive Infographic(15)	Site Logo(F) Custom Colors(F) Custom Header(F)
	Media	Photo, Image — Content			GIF(13,14) Hero Images(13,14) Custom Illustrations(14) Full Screen Image(14) Cinema Graph(15) Handmade illustrations that humanize(15)	Features Images(F) Photography(G)
		Photo, Image — Viewer			Image Slider(13) Box-Slider(14) Full width slider(15)	
		Video			Short presentation (14) videos re-emerge(14) Infinite Looping (14) Engaging videos (15) Instead of words (15)	Video(G)
	Typo-graphy	Style	Contrasting Font Weights (A) Borders That Echo Fonts (A)		Vintage Typography(13) Mix &Match Typography(13) Flat Design Typography(14) Characterized Typography(14) Letter-press Typography(15) Typographic interplay on headlines and	

			taglines(15) Massive Typography(13,15)	
Font			Handwritten Font(13,15) Icon Font(15)	
Background	Deep Background (A)		Large Image (13) Background(13) Full screen Background(14) Background Video(14,15) Patterned Backgrounds(15)	Custom Background (F)

3.3 UX pattern system for Wordpress service

I compared and matched web UX pattern elements, which are constructed from various resources to Wordpress development components so that UX pattern can be defined by Wordpress development pattern elements. Then users can describe desired experiences with Wordpress component in a systematic way.

I designed UX pattern system for Wordpress, which consists of 3-depth hierarchy; it mainly defines structural composition of a web service with functional options. The main UX pattern structure consists of a site(home page), sub pages, which are static contents, a post page which is dynamic blogging contents, and navigation elements that users move to other page destinations. Each main structure element has sub pattern elements that connect UX and Wordpress development pattern components. This system enables users to know what their visitors see and do in a certain functional page status (home/ static/ post) and how they move within the site, in terms of Wordpress development components, which also can be used in theme filtering tags. And additional 4 contents categories, which are blog, news, portfolio, and business help users to plan the main experiences of the web services.

Table 5. Structural UX pattern elements for Wordpress service and Possible filtering tags

1-depth	2-depth	3-depth	Possible Filtering Tags
Site (Home page)	Layout	Theme(a)	Full Width
		Layout Grid(b)	Grid (Gallery) Column
		Mobile(c)	Responsive
		Header Image(d)	Image Slider (Normal Image) Background Image Custom Image Logo Image
		Image Slider(e) (Post Slider)	Post Image Slider
Page	Static Page (Data Presentation)	Image(f)	Image Slider (not in home) Background Image
		Form(g)	User Input form (Contact, Subscribe)
		Formatted Page(h)	About page Testimonials
Post Page		Text(i)	Custom Format
		Image/Video(j)	Video/Audio format Header Image Slider
		Post Categories(k)	Post Categories
Navigation	Type	Menu(l)	Drop down menu
			Footer menu
		Sitemap(m)	Sitemap
	Bar Position	Left/ Right/ Top(n)	Top menu bar
			Side menu bar(L/R/LR)
		Fixed(o)	Fixed Top bar
		Hidden(p)	Hide Top bar
SNS Links		(q)	SNS / Feed links
Archives		(r)	Archives
Etc. features		(s)	Address

3.4 Case Study: UX pattern analysis on Sample Wordpress themes

To finalize and verify the UX pattern system for Wordpress theme, I tested this UX pattern system on sample themes in Wordpress.com to see the suggested filtering tags are working to define theme design and it differentiate its UX from other theme designs. I selected 5-6 sample themes from the most popular theme list by 4 contents categories which I suggested: blog, magazine, portfolio, and business in Wordpress.com's theme directory.

First step of this case study, I analyzed the composition of UX pattern system elements in all sample themes as in Table 7 and Table 8. Then I observed how each UX pattern system

elements works across the themes to see it is appropriate to characterize each theme's UX design.

Table 6. Sample Theme List to verify UX pattern system for Wordpress theme service by 4 contents categories

Blog	Magazine/News	Portfolio	Business
Chateau	Moka	Eighties	Big
Ryu	Modern News	Gridspace	Brother
Reddle	MH Magazine	Sketch	Linen
Splendio	The morning	Photographer	Motif
Cubic	after	Ubud	Edin
Hemingway-rewritten	Zuki	Illustratr	Oxygen

The composition of UX pattern elements varies according to themes and also to contents categories, home page's layout and header image elements show the most divergent composition by the themes. But all the themes have identical for post category options and subscription form options. As a second step, I sampled 5 Wordpress site design demos with different UX scenarios from Wordpress theme directory for each 4 content categories. Then analyzed the selected 20 designs' UX pattern elements, then simulate what themes of the sample theme list can be recommended with the analyzed UX pattern system composition.

Although sampled site demos made from other Wordpress themes, which is outside of sample theme list of this research, these sites can be made with themes of sample theme list with small customization, since they share UX pattern elements.

This is a double check process to ensure that the UX pattern system works for theme recommendation. 13 themes from 22 sample themes of Table 6 are chosen as theme recommendation for selected 20 UX scenarios. Edin theme is recommended for 10 scenarios showing that some themes are worked for general UX requirements across the contents categories. Hemingway-rewritten, Moka, Gridspace themes are works for over 3 scenarios within the given contents categories.

Table 7. The UX pattern elements comparison of Sample themes (1)
((a)~(s) stands for each pattern elements' name of the UX pattern system of table 5)

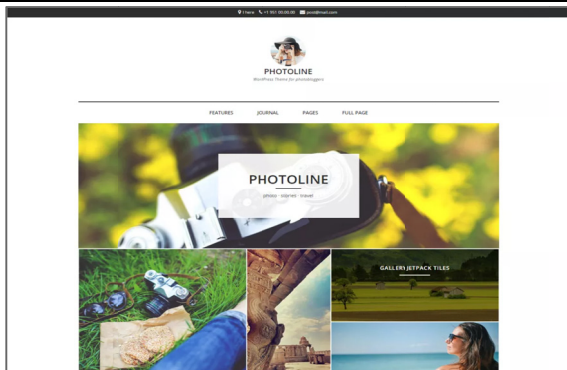| pattern 3rd	Possible Filtering Tags	Chateau	Ryu	Reddle	Splendio	Cubic	Hemingway Rewritten	Edin	Linen	Oxygen	Big Brother	Motif	Zuki	Moka	Modern News	MH Magazine	The Morning After	Eighties	Grid space	Sketch	Photographer	Ubud	Illustratr
					Blog					Business					Magazine					Portflio			
a	Full Width	O	O			O	O	O			O		O	O		O	O	O		O	O	O	
b	Grid					O													O	O	O	O	O
	Column	1-2	1	2	1-3	1	1-2	1-3	1-2	1,3	1-2	1-2	1-2	2	1-3	1-2	1-3	1	2	1-2	1-2	1	1
	Colum	5	3	3	5		3	3	4	1		3		1-4	2	2-3				3	1-3	1-5	1-3
c	Responsive	O	O	O		O	O	O		O	O	O	O	O		O)		O	O			O	O
d	Image Slider												O	O		O		O	O	O	O	O	O
	Background Image								O			O											
	Custom Image	O		O	O		O	O	O	O	O	O											
	Logo Image		O			O		O		O	O	O		O	O	O	O	O	O	O	O	O	O
e	Home Image Slider												O	O					O				O
f	Image Slider (not in home)													O		O				O	O		
	Background Image		O			O		O					O								O		
g	User Input form (Contact, Subscribe)	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
h	About page													O									
	Testimonials							O				O											

Table 8. The UX pattern elements comparison of Sample themes (2)
((a)~(s) stands for each pattern elements' name of the UX pattern system of table 5)

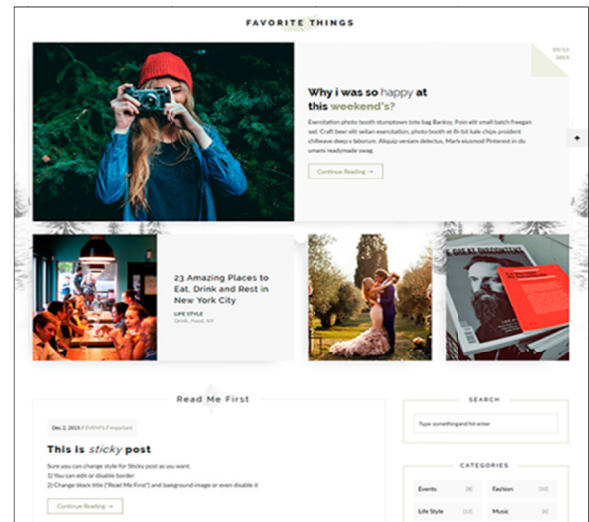| pattern		Blog						Business					Magazine					Protflio					
3rd	Possible Filtering Tags	Chateau	Ryu	Reddle	Splendio	Cubic	Hemingway Rewritten	Edin	Linen	Oxygen	Big Brother	Motif	Zuki	Moka	Modern News	MH Magazine	The Morning After	Eighties	Grid space	Sketch	Photographer	Ubud	Illustratr
i	Custom Format	O	O	O		O	O	O			O	O	Ɔ	O)			O	O	O	O	O)		O
j	Header Image Slider	O	O	O		O	O	O			O	O		O				O	O	O			O
	Video/Audio format	O	O			O	O	O			O	O						O	O	O			O
k	Post Categories	O	O	O	O	O	O	O	O	O	O	O	Ɔ	O	O	O	O	O	O	O	O	O	O
l	Drop down menu	O	O	O	O		O	O	O	O	O	O	Ɔ		O	O	O		O	O	O	O	O
	Footer menu	O		O	O		O	O	O	O			Ɔ	O	O	O		O	O			O	O
m	Sitemap								O				Ɔ		O	O	O			O	O	O	O
n	Top menu bar	O	O	O	O	O	O	O	O		O	O		Left	Right	Right	Right		Left	Right	Right		
	Side menu bar(L/R/LR)	L		L	L		R	L	L						RL	RL							
o	Fixed Top bar													O								O	
p	Hide Top bar		O					O															
q	SNS Links	O	O	O	O	O	O	O	O	O	O	O	Ɔ	O	O	O	O	O	O	O	O	O	O
r	Archives	O	O	O	O	O	O	O	O	O	O	O	Ɔ	O	O	O	O	O	O	O	O	O	O
s	Etc. (Address)	O	O	O	O	O	O	O	O	O	O	O	Ɔ	O	O	O	O	O	O	O	O	O	O

Table 9. UX pattern elements by Sample Scenarios with site design demo(Image) for Blog contents categories and Recommended Wordpress themes in Sample theme list by Wordpress UX pattern system

UX pattern elements from sample scenario1(blog category): Image thumbnail in home page, Logo image in header, Top bar Navigation, Photo blog

Chateau, Reddle, Cubic, Hemingway Rewritten, Edin, Zuki themes are recommended

UX pattern elements from sample scenario 4 (blog category): New, popular post on Home page, Use post category as menu, Magazine style layout

Splendio, Hemingway Rewritten, Zuki themes are recommended

4. DISCUSSION

4.1 Strategies for enhancing UX unerstanding of Wordpress Theme Design Markets

As Wordpress theme market observation shows in 3.2, Wordpress themes are sensitive to design trends. So trendy new themes are presented according to yearly web trends, which are much focused on graphic design characters. Trendy characters such as font, background effect, colors lure users with freshness and prevent considering UX effect of the theme. But those trendy characters are too much easy to change by theme customization in Wordpress so those are not relevant attributes for theme selection process. Design trend is a factor to disturb UX consideration, but on the other hand, it is an attractive factor to users who want to bring new design as often as possible with Wordpress service. New design themes help Wordpress theme market active. So I suggest to bring trendy attributes into Wordpress UX pattern system as filtering tags to link UX elements to trends. So the contents of filtering tags are flexible and open due to seasonal trends. For example, full width layout, image slider, or testimonials can be mapped as filtering tags under 3rd level of UX pattern structure as Table 5. Possible theme filtering tags could be managed with flexibility and kept trendy in theme filtering service.

Second, for user's view point, the pattern attributes of a theme design could be analyzed by pages, attributes in home page and navigation first, then static or post page will be opened and analyzed. I observed the pattern inspection process is confused because the pattern system's structure does not apply user's site viewing flow. So the system structure should be reorganized by page unit, for example, navigation attributes should come together with home page attributes since users will check home page and main navigation together.

Third, all functional features such as SNS Links, Archives, and Etc. features (address) attributes did not differentiate theme design, except one theme in case study. And those features are possible with plug-ins when a theme does not provide them. So the UX pattern system does not need to include them.

Forth, home page's header image attribute is important for site differentiation as in 3.4's observation. It needs to be stand out in pattern system as upper structure. And all home page's image sliders of sample themes are located in header position, so homepage's header image and image slider can go together.

Fifth, high quality images in theme simulation also take users' attention, which is not relevant information to find theme design. Wordpress users who use themes in Wordpress market are mainly contents providers rather than professional designers. Users need to understand what is an important factor and what is not, to find the right Wordpress design theme for web service visitor's needs. So there is a need to procedural guide for users to focus user-centered design when users find Wordpress deign theme. It is possible to provide relevant information service according to users' theme finding process in theme browsing page. And more active approach is building community for Wordpress users to connect each other, and learn about smart web design with Wordpress service.

4.2 Design Suggestion for Wordpress Theme filtering service based on Wordpress UX pattern system

Based on the case study results, I organized Wordpress theme filtering attributes using the Wordpress UX pattern system to guide users how the themes in filtered list provide UX for their service visitors. Filtering attributes' order and selection options are delicately designed according to user's view point. And I proposed filtering set function, which enables users save their filtering composition for later usage. This Wordpress theme filtering service has two version, one is a set of filtering tag list for experienced, design savvy users, and the other is a set of pop up page guides for novice, non-designer users.

Pop up guide service provides 6 step by step guide contents with graphic presentations and user experience summaries to plan main user experiences of their web service. When users finish the guide service, user's preference selections are presented in organized filtering tag list in header of Wordpress theme browsing page.
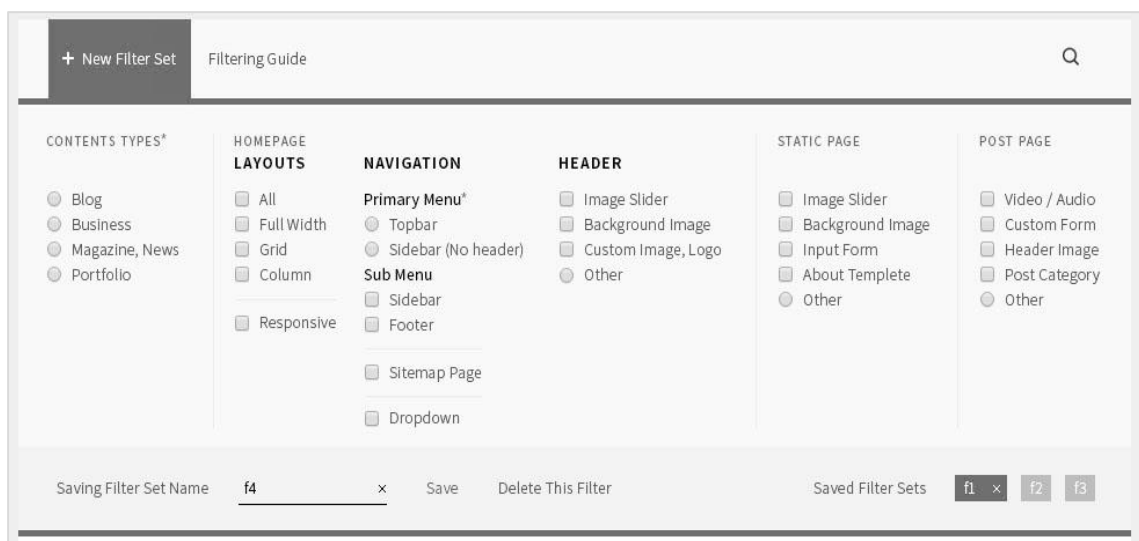

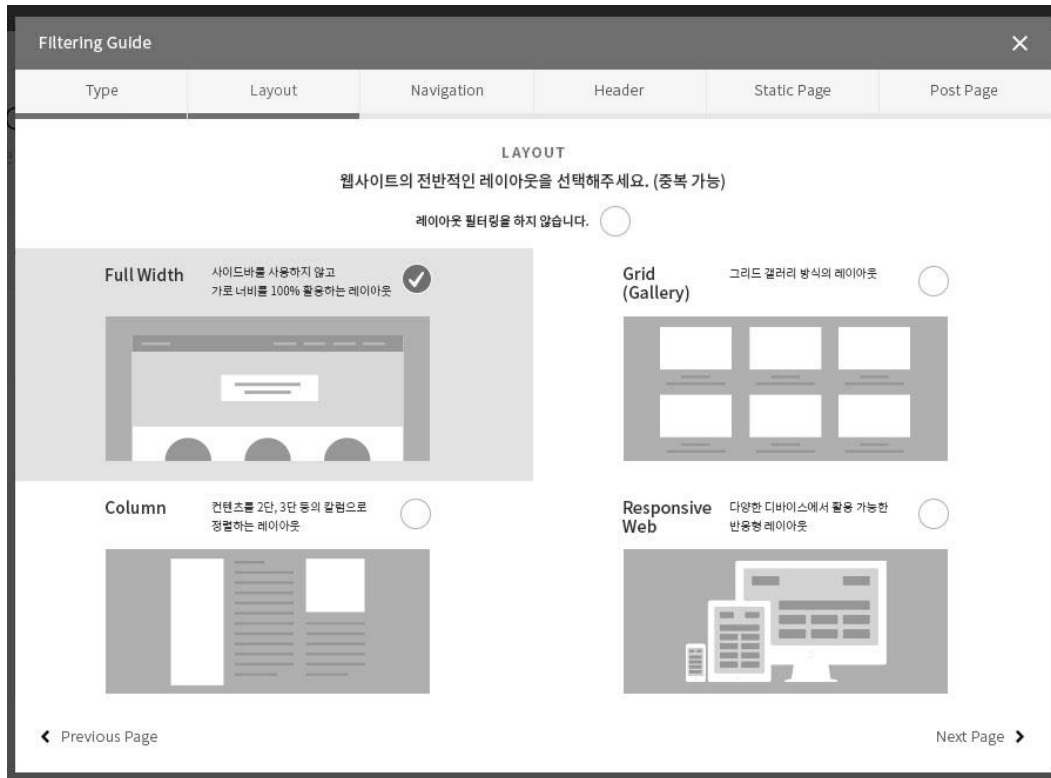Fig. 2. List type GUI Design of Theme filtering in Wordpress theme browsing page

Fig. 3. Guide type GUI design for theme filtering pop-up page (Layout step) in Wordpress theme browsing page

5. CONCLUSION

This study developed Web UX pattern system by analyzing various web pattern resources, then matched this system for Wordpress theme service to find out design theme with UX centered view point. Then the pattern system is tested in the case study, which is sample theme analysis. And theme filtering service GUI for Wordpress is suggested based on research results.

Web technology progress goes fast, has become ready-made service with less user experience consideration or design creativity. This study shows directions to keep track UX value in emerging web service paradigm. Not just for Wordpress service, this study can be extended to other CMS service such as Drupal, or web editor services for planning and enhancing UX of the technology driven web services.

This study has limitations for validating of the study results with small size sampling of the case study. The comprehensive testing should be technically developed and user tested with real world Wordpress users within Wordpress service, which needs collaboration with Wordpress foundation. For the future study, the Wordpress UX pattern system will be proposed and tested in real service environment with users who finding the right themes. In between the small case study and real world service, I am planning to collect community feedback about Wordpress UX pattern and user's theme design problems, then to enhance UX understanding through community sharing with Wordpress web design community.

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