

Clicking Through Endless Seas: Understanding User Experience in the Design of Journalistic Websites

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Abstract. The research explores the visual design of journalistic content websites, from a producer and user perspective, to understand the forces underlying the design. A genre analysis approach is combined with an understanding of user experience (UX) in interaction design to investigate the meaning embedded in the design features of three websites. Ethnographic Content Analysis (ECA), observation tasks, and in-depth interviews reveal a negotiation process between users and producers in achieving their purposes through the website product.

Keywords: User experience · Website design · Ethnographic content analysis

1 Introduction

Media content today is produced in an environment of media convergence, characterized by the tendency for media products to become less segmented and distinguished by form and function, or production and consumption, as content flows across multiple media platforms [1]. The convergence process characterizes a rapidly changing paradigm of editorial and journalistic content production and consumption. This shift has altered not just where content is consumed, and in which media, but has also fundamentally changed the nature of content consumption to being less committed and more intermittent [2].

In this media environment, website design has played an influential role in how content consumers access and navigate online media. The multimodality and hypertextuality, inherent in online media, changes the way journalistic products are produced and consumed. The evolution of content production and consumption in new media has instigated a closer connection of multimedia design with the production of online content, and has increased the importance of website design for audience access, reception and understanding of content.

The present research explores the nature of website design for three journalistic content publishers. In particular, the research approach aims to incorporate both the user and the producer perspective of UX, as manifest in the visual website design. In studies of journalism and editorial content in new media, a focus on the social aspects of web-based communication and information, as well as the structural and

organizational changes in production have left a crevasse of knowledge where these two forces collide – namely, the website product itself.

This paper aims to incorporate a UX perspective into established media research approaches. The research employs genre analysis, applied within an interaction design paradigm, with the objective of understanding the website design of journalistic content websites. Genre analysis identifies meaning embedded in media artifacts, established through convention [3]. Since the media artifacts in question are digital interactive products, the interaction design worldview specifically deals with examining UX in these environments.

Research Question. How can the website design of online journalistic content be understood through a producer-oriented and user-oriented analysis of the website product and its use?

Note that this research question is exploratory in nature. The approach developed aims to understand website design in the context-rich environment of media production and consumption. Bargas-Avila and Hornbæk [4] note that researchers of UX emphasize the heavy influence that context of use has on the concept. They explain that when, where and with whom a product is used influences the type and quality of experiences triggered. In addition, questions of why a website is produced, for whom, and how (with which technologies) introduces another level of context to be understood in website design. The present research therefore aims to develop a more holistic approach to understanding the nature and influence of visual website design within the contexts of social, cultural, economic, and technological forces surrounding its production and consumption.

The research conducted is based around ECA from a producer perspective with a designer as expert coder. A user analysis including open-use observation and in-depth interviews with 10 online news consumers contribute a unique view of user motivations and behavior that is examined relative to the content analysis data.

2 Approach

Law et al. [5] surveyed UX researchers and practitioners to determine commonalities in a collective understanding of UX. Professional consensus converged on the dynamic, context-dependent, and subjective nature of UX. Hassenzahl et al.'s operationalization of such an understanding separates perception of product attributes, from their evaluation [6–8]. Three classes of attribute perception are described [7]:

Pragmatic Quality – Synonymous with usability, these attributes are connected to users' need to achieve behavioral goals. Hedonic Quality (Identification) – Referring to the self-oriented human need to express oneself through objects. Hedonic Quality (Stimulation) – Another self-oriented need for stimulation, novelty, and challenge as a prerequisite for personal development.

The independence of attribute perceptions and product evaluations means that the model can be applied to different contexts without assuming conceptual relationships. The model captures holistic product attributions, which can be related to various

consequences such as emotions, evaluations, or behavior. With this understanding of UX, the present aim is to develop an evaluative framework for analyzing UX through website design, tied to the contexts in which the product is designed and interacted with.

Genre analysis similarly seeks to understand media products, through a context-sensitive analysis of the attributes of a designed product, relative to the community of producers, designers and users. Genre analysis has been utilized widely in media and communications research to analyze the conventions of form and function within a text and how those conventions shape discursive meanings ascertained from a media product. Genre analysis recognizes that documents contain styles and conventions, which can be interpreted as forming the social realities of the actors involved [3]. Frow [9] refers to this process as a cognitive organization of knowledge by schema, “making patterns of meaning relative to particular communicative functions and situations” (p. 133).

For the purposes of developing the present approach for studying website design as a text, a Swalesian understanding of genre is invoked. Swales [10] studies genre as an epistemological discipline, rather than a realist phenomenon. In this understanding, mutually understood communicative purposes characterize genre and are treated as the privileged criterion for genre analysis. Furthermore, it is recognized that the conventionalized constraints of genre are often exploited to achieve private intentions [11].

Digital genre. Askehave and Nielsen [12] suggest that the media and genre distinction is confounded when analyzing digital texts because of the nature of information interaction. Applying the Swalesian model of genre analysis, Askehave and Nielsen [12] propose that analysis of internet genres should consider the user’s movements between the traditional sense of textual generic conventions, and the conventions surrounding hypertextual media characteristics. That is conceptualized as two user modes: Reading mode, represented by the traditional reception of texts, and navigating mode, represented by personal construction of a path through one or several sites [12, 13]. A key upshot of this model for the methodological approach being developed here is that the analyst considers the roles of both text producer and text receiver in the construction of meaning from generic artifacts.

2.1 A Framework for Website Design Evaluation

In order to examine communicative purposes in website design a framework is developed to structure methodologies from a user and producer orientation. Figure 1 represents the phenomenon of interest in each orientation – product design and product use. These are analyzed through the lens of three modalities which focus analysis on the central concepts of UX and communicative purpose in the website design.

Producer Orientation. The producer orientation incorporates a systematic and inductive analysis of the product design. According to Thorlacius’ [14] model of visual communication focusing on web design, the implicit addresser (the designer or producer) can be analyzed via the expressive function of the product – the attitudes,

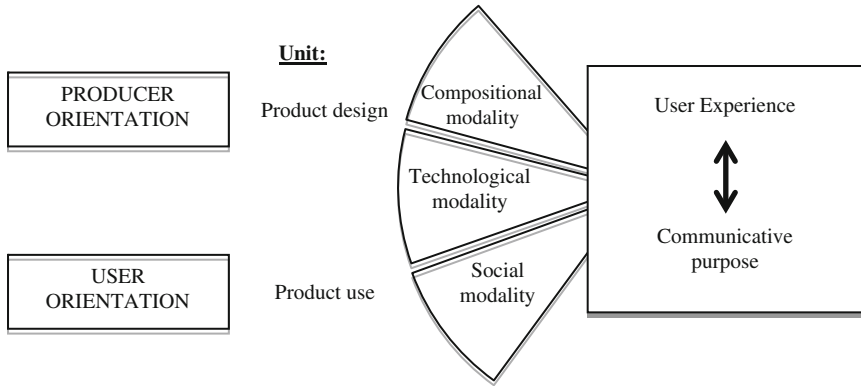


Fig. 1. A framework for website visual design evaluation

feelings and opinions expressed in the product. This view echoes the perspective in genre analysis that a text, is not just a neutral reflection of content placed by the publisher. But the website constructs the socio-cultural relationship between producer and user, and that reality is produced through conventions in the product [4].

Rose's [15] visual methodologies framework guides methodological procedures for analysis of visual texts based on three modalities which denote the meanings in an image. The model is adapted here to suit a visual analysis of website design focused on user interaction. *Compositional modality*: Referring to the actual visual elements and their material properties e.g. layout, typography, symbols and icons, color, and size. *Technological modality*: The technological aspects of the internet such as hypertext and multimedia, which guide navigation, structure information, and influence attention and perception processes. *Social modality*: The organizational context in which the websites are produced including the motivations and strategies of the producer, relative to social, economic and technological contexts of production.

In the present research, a qualitative media analysis approach was pursued to explore the design of journalistic content websites. This adapted Altheide's [16] method of ECA to the context of web design, coding components in websites based on the producer-oriented modality framework.

User Orientation. Product use is the phenomenon to be analyzed in the user-oriented aspect of the approach. This is also scrutinized through the lens of compositional, technological and social modalities, which characterize the contextual meanings of the website design from the user perspective. *Compositional modality*: User perception of the website's design features. *Technological modality*: How those features are attributed hedonic and pragmatic value, and influence user evaluations and behavior. *Social modality*: How the website design reflects on the evaluation of website content and the relationship between the user and the producer.

The present research supports the ECA of visual website design through a qualitative analysis of observed user interaction on the websites studied, and semi-structured interviews. The procedure is described below.

3 Method

The method revolves around a systematic and comprehensive deconstruction of the visual design of three journalistic content websites. This examines context-sensitive meanings in website design features, that are relevant for producers and users. With this overview of the product, preliminary user observation and in-depth interviews contribute further analytical rigor to the methodology.

3.1 Producer Orientation

Website Sampling. Three US-based websites were chosen for the research, which had a range of variation in the visual design style and components. The Huffington Post (www.huffingtonpost.com), Upworthy (www.upworthy.com), and Matter (www.medium.com/matter/). These websites were purposively sampled to represent a variation in producer motivations for content delivery, variation in user reception motivations, and for the diversity of visual design features. Paly [17] explains that implicit in purposive sampling is that the sampling strategy is tied to the research objectives. In this case, the research aims to understand website design relative to different contexts of production and use. Each of the websites is a ‘digital native’ content producer. That is, they produce journalistic content that is only published and distributed online. Critically, the sampled websites each project editorial values, in that the content is published and mass distributed under the overall publication brand, and attributed to individual authors and journalists.

ECA. Qualitative coding of the websites focused on the article webpage layouts on each website to limit the study to analyzing the design of content pages. The coding procedure followed prescriptions of ECA, moving reflexively between data, analysis and interpretation in a process of constant comparison and refinement [16].

An initial survey of the three websites served to identify and familiarize with the visual elements to be analyzed. This informed the development of a coding protocol, structured around Rose’s [15] modalities previously outlined. Individual design components of each website were listed and described, identifying a total of 40 components in The Huffington Post (HP), 24 in Upworthy, and 19 in Matter.

In the initial phase of coding the lead researcher assigned codes to each component, in all three modalities. Questions were formulated to characterize the coding frame, ensuring that all codes flow from a single principle in each modality [18].

- *Compositional modality.* “What kind of information and/or information structure was this element designed to represent?”
- *Technological modality.* “In what ways might the component influence how the website is processed, consumed, or navigated?”
- *Social modality.* “What is the producer’s apparent motive and purpose in how the component is represented on the website?”

Codes were defined and redefined by analytic memos in this first phase. Multiple codes were simultaneously applied to each component in each modality since multiple meaning descriptions and inferences were justified [19]. Codes were gradually added,

deleted, combined and conceptualized during the process of coding, across each of the websites. With a list of the initial defined codes, and an empty coding sheet, a second coder went through the same coding process. The second coder is an experienced graphic design professional who has worked extensively on website design projects.

At a point when both coders felt that they had comprehensively accounted for each component across the three modalities they compared worksheets. Code-by-code and, component-by-component the coding protocol was discussed and refined. Areas of difference were collaboratively deliberated and reconceptualized to achieve ‘interpretive convergence’ in describing the design phenomena across the websites [19]. The function, purpose and design principles guiding each component’s scheme within the layout were discussed to arrive at that description.

3.2 User Orientation: Data Collection and Analysis

Participants. Participants for the experimental and interview component of the study were selected as a convenience sample. All participants were consumers of online journalistic content. 10 participants were sampled, 5 males and 5 females, with ages ranging from 24-38. Surveys identified some key factors of the participants’ internet use. 90 % of participants reported to spend more than 10 h per week surfing the internet. On average, 66.5 % of the time spent surfing the internet was on a desktop computer or laptop, the remainder spread across mobile phone and tablet devices. All participants reported that they source daily news from online news sources. 7 out of 10 reported online as their only news source. This data depicts the participants as accustomed internet and online content consumers.

Observation and Interview. The sessions were conducted with all participants in a familiar, comfortable location – either their own home or workspace. Participants started their website interaction on the homepage for each publication and had 15 min to freely browse the content. The open-use task was employed to overcome the pitfalls of tightly controlled tasks that do not emulate real-world interactions [4]. All observations were conducted on the same MacBook Pro 15” laptop computer and the screen was recorded using ScreenFlow software. The order of presentation of the three websites was rotated for each participant.

Videos of each participant’s interaction on each website were analyzed by notation to track the user’s activity within and between pages. Interactions were noted by time elapsed, description of the website feature interacted with, and outcome of the interaction. Observation notes also recorded a description of the participant’s activity, focusing on the article pages. The URL of all articles pages visited was recorded and the researcher visited those pages and listed the design features particular to that page.

30–60 min interviews were conducted after participants had finished all observation tasks and surveys. All three websites were opened on a computer so that the participant could refer to particular design elements when necessary. Discussion was structured around the same modalities that drove the website content analysis. Interviews were partially transcribed and annotated with researcher notes and analytic memos, drawing attention to particular salient concepts.

4 Results and Analysis

4.1 Producer Orientation

Producer Rationales in Website Design. Figure 2 depicts the formalized concepts that were identified by ECA. Review of the final coding scheme structured the analysis into distinct rationales that describe the communicative purpose of design features in each of the three modalities. The model includes representational goals, user focuses, and organizational motivations. Organizations may place higher importance on particular rationales when designing the website, however all surveyed websites showed some influence for each of the rationales. Since a particular visual feature may be able to actualize more than one of the concepts within a modality, the rationales overlap.

Five Representational Goals. These goals explain the kind of information or information structure that individual graphic features represented.

‘Content goal’¹ – The goal to represent the primary journalistic content of any given page. ‘Structure goal’ – Many elements had the goal to structure information, either by visually segmenting the page, or representing categorized information. ‘Navigation goal’ – The goal to represent a possibility for navigation to another page. ‘Promotion goal’ – A goal related to representing a feature in a way so as to promote that function or feature. ‘Relational goal’ – A goal in the website design to represent hedonic aspects of the publication and the content.

These goals were observed through the design features on all of the surveyed websites. Matter was dominant on the content and relational goals, since most of the design was centered on representing the content with a pleasing aesthetic. HP had features pursuing each of these goals, due to the comprehensiveness of the content and navigation options on that website. The promotional goal was evident in the crowding of content suggestions, and dedicated advertising units on article layouts. Upworthy design features exhibited the content and promotion goals.

Two User Focuses. The codes in the technological modality describe how the features were purposively designed in relation to user interaction.

‘User-centered focus’ – Design features which aided users in their core motive of content consumption. ‘User-influence focus’ – Design features intended to influence user interaction in pursuance of the producer’s goals.

The user-centered focus and the user-influence focus may operate in parallel through different features on a web page. These concepts are a means to define the functional and technological purpose of the visuals in a website. Advertising units on HP could be considered ‘user-influence’ since it is designed to be prominent and not related to the user’s primary purpose. In this case the user-influence focus is in contradistinction to the user-centered focus. The social media share buttons on the same layout invoke both focuses. The buttons are presented to make sharing easy for the user and communicate social proof for the content quality. However they also serve to influence users to share the content to increase the potential audience for the website.

¹ Individual codes and rationales from the model indicated by single quotation marks.

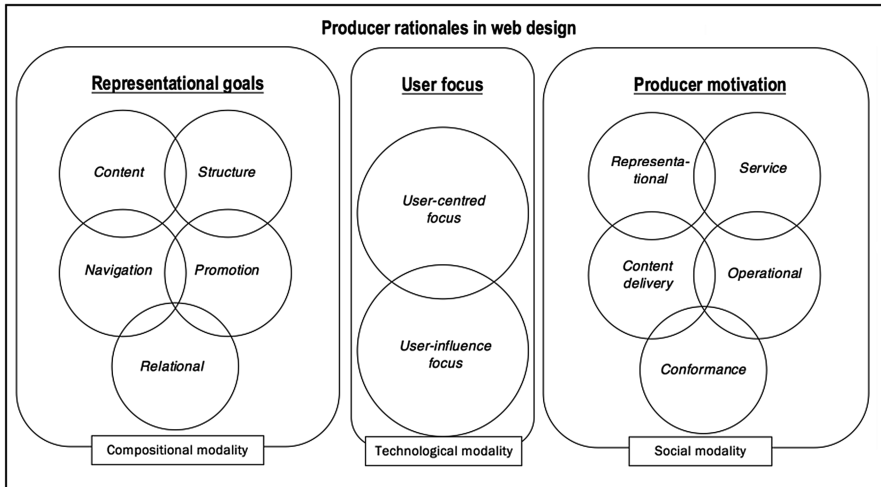


Fig. 2. Producer rationales in web design

Five Producer Motivations. Analyzing producer motivations in the design entailed looking at the wider context of the space in which the publication operated.

‘Identification motivation’ – The producer’s motivation to develop a brand identity for the publication. ‘Service motivation’ – Features which provide a functional (pragmatic) or emotional (hedonic) service to the user. ‘Content delivery motivation’ – The design activities with a primary function of displaying content. ‘Operational motivation’ – Some design elements depict the producer’s broader motivations for publishing journalistic content, such as advertising. ‘Conformance’ – Some design features conform to design standards for websites, or from offline media.

These producer motivations can also be pursued in parallel or in opposition. For example –Matter has an identification motivation in removing dis’tractions from their article layouts, in that their brand is based around appealing and dedicated content publishing. That might be in opposition to an operational motivation to promote other content or social media sharing. The result is that these forces play out in the design decision-making, defining the communicative purpose of the producer.

The following section further interprets the model with respect to the three analyzed website designs, and the unifying concepts of UX and communicative purpose.

The Huffington Post. The size and diversity of HP as a publication means that structure and navigation are important representational goals in their design. They are focused on both ‘user-centered’ features and ‘user-influence’. They have an operational motivation to encourage users to stay on the website and view as many pages as possible, in order to earn advertising revenue. But this is balanced against a motivation to deliver content and a service to users who wish to be entertained or informed by the content. Data from the user-orientation revealed that participants found the design confusing and overwhelming, and they would visit this kind of news site when they were distracting themselves. The HP design plays a role in this, with features supporting user distraction

by promoting many content suggestions to entice users to view –more pages with more advertising.

Upworthy represents content as easy to consume and easy to share on social media. This can be interpreted as having a ‘user-centered focus’. But prominent, intrusive promotional design elements like large share buttons and popup boxes also have a ‘user-influence focus’. Understanding the context of social media sharing in online content distribution helps to understand the communicative purpose in the design. The design features come together in a distinct style that aggressively pushes sharing and makes user interaction simple. This supports the site’s overall operational motivation to build an audience, and to deliver the content that is curated.

Matter. *Matter* has an alternative layout design compared to many journalistic content websites. There is a clear visual focus on the content itself and less prominence for social media connection and content suggestion. That was reflected in the coding process with 8 out of the 19 (42 %) components labeled as ‘content’ (compared to 25 % on *Upworthy* and 28 % on *HP*).

Many visual components within the *Matter* layout emphasize classical aesthetic qualities in design – those focused on ordered structure and clarity [20]. Dominant rationales in the design were the representational ‘content goal’, and the ‘content delivery’ motivation. Many of the design features on *Matter* have a ‘user-centered focus’. This reflects that *Matter* does not have a dominant operational motive evident in the design. This harmony between the producer’s and user’s communicative purpose explains participants’ favorable user evaluations of *Matter*.

4.2 User Orientation

Interview and observation data supported the ECA examination of rationales that play out in website design. Navigation strategies and level of content immersion of participants indicated design influences on user modes of reception.

Reading mode and navigating mode. Askehave and Nielsen [12] proposed that the distinction between a user reading mode and navigating mode is pertinent in genre analysis because two different cognitive capacities and behavior patterns define interaction with the document. The results from the current research support this assessment. Participants had different approaches for finding content, and then different levels of engagement with that content. Some would browse for a long time with no observable strategy in finding content they were interested in. Particularly on *Matter*, participants spent more overall time searching for an interesting article, possibly because of the greater commitment involved for the longer, more in-depth content.

Some participants were very influenced by content suggestions where little time was spent searching, and enticing content was accessed without delay. These observed navigation strategies were mostly seen within a particular website interaction with a particular user. That is, users did not exhibit stable strategies across the three websites. Therefore, design features such as content suggestion influenced user interaction differently depending on the navigation strategy of the user.

Conversely, content immersion could be unstable within a single website session. Low content immersion is characterized by short time on an article page, skim reading, skipping ahead, and scanning images and headings. High immersion entails greater focus on the content and higher likelihood to read or watch from start to finish. Participants tended to have greater content immersion on Matter. They would scroll slower through article pages and stay longer before leaving a page, regardless of article length. On Upworthy users would often skip ahead in a video to see the content faster and move on.

The harmony of producer and user motivations on Matter was also evident in the user data. Participants recognized a context for consuming content on Matter that is more focused and purposeful. The design on Matter supports the reading mode by leaving out elements that encourage a navigation mode.

On Upworthy, simple presentation of visual features allows the user to focus on the content, with clear enticement to navigate or share on social media. Users commonly described the design as simple and easy to understand. On HP, reading and navigating modes can be seen as more interconnected in the design. The profusion of navigation options in the web page layouts makes a navigating mode of interaction constantly accessible in many forms. In this way, HP pursues their producer rationale for navigation, promotion, and an operational motivation based on advertising revenue.

The producer rationales play a role in shaping the design to move users between reading mode and navigating mode, which affects the overall UX for the website. This balances the user motivations for accessing content against the producer motivations for navigation, marketing, and content delivery.

5 Discussion

Interrelation of website design and content perceptions. Participants identified areas where the visual website design specifically contributed to their UX. This was commonly expressed in terms of their perception of the content itself. It was evident from these connections between design and content that the visual representation of content is closely related to evaluations of the content itself. On HP many participants commented that the crowding of content suggestions from all over the website, and also advertising, degraded their perception of the content they accessed.

“I liked the page, but I think it kind of ruined my experience that content that it links to out here [content suggestions column] is of such a different character... It kind of ruins my impression of, not the trustworthiness of the articles... well maybe a bit. The seriousness of this business.” (Participant 8)

User content motivations interact with their experience in navigating and immersing themselves in content, and with their preconceptions. These findings indicate an inextricable link between how an online publication distinguishes itself in the mind of the user, and the visual design of the content. The visual design of the website influences the user perception of the content style and quality, and also indicates to the user what experience they should expect out of their interaction with the website.

Perceived value of the UX. This concept emerged relative to the contexts and motivation states in which users accessed the websites. The perceived value concerns a

personal evaluation made by the user regarding how they spend their time online, and an assessment of the quality of the content they receive in that time.

In reference to the visual website design, participants often discussed the journalistic quality of the content, difficulty in finding desired content, being enticed into content, distraction, and time wasting. This collectively contributes to how the user feels about the whole website experience, whether the website is valued and worthy of time and effort, and how the content should be engaged with.

The influence of web design on UX operates through these myriad perceptions in the context of the interaction. A confusing layout on HP might decrease perceptions of the quality of content, but it supports a distracted mode of navigation to more pieces of content. The perceived value of the experience inputs back into user decisions and assessments of what content is worthy in what situations and to what extent they should interact with the website. By this process, the producer constructs the design to balance their rationales against UX perceptions and associated user interaction that they seek.

6 Conclusion

In Hassenzahl's [6, 7] conceptualization of UX, the analysis here points to links between perceptions of hedonic and pragmatic quality in navigation and content immersion, and overall quality evaluations. The evaluations are played out in user interaction, which is fed back to the producer so that design is optimized to pursue producer rationales, and the desired UX effects. By this process the communicative purposes of producers and users are negotiated and become evident in the website design.

Analyzing the user and producer perspectives of the meanings ascertained from website design features allowed a context-rich view of the forces underlying website design of journalistic content websites. Future research could further explore this approach in more tightly controlled user and website design scenarios.

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