Website Design for Effective Digital Audience Engagement: A Conceptual Framework

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Abstract. *The transformative power of digital technologies alters every sector of our society and provides unparalleled opportunities for value creation. The challenge for today's organizations is to communicate in ways that resonate with the digital audiences and forge meaningful interactions. Leveraging digital opportunities requires organizations to develop digital fluency and tailor an effective digital strategy. At the heart of the digital strategy is the website – the digital communication interface, the foundation that provides avenues for connecting with the audience. In this respect, website design has emerged as a critical issue. This paper aims to devise a conceptual framework for website design. It identifies the key aspects for achieving a successful website and equips the managers, web designers, and communicators with the knowledge of crafting an effective communication platform.*

Keywords: Website design; Digital content; Content design; User experience; Digital communication.

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1. Introduction

Since the publishing of the world's first website in 1991, by the British physicist Tim Berners-Lee, the World Wide Web has grown to over 1.8 billion websites (Internet Live Stats). A website is regarded as a digital marketing tool that delivers a platform for communication with the audience, via digital devices connected to the internet. Websites represent "the most durable communication activity on the Internet and allow brand managers to control what information will be presented, in what order, and for how long" (Obadă, 2014b).

The purpose of a website is to inform, engage, and to compel the user to take a certain action. Hence, building an effective website is a prerequisite for effective marketing communication in the digital realm and beyond. "Marketing is engaging customers and managing profitable customer relationships" (Kotler *et al.*, 2018). In the experience economy, the role of marketing has evolved and has become vital to an organization's success. It has changed along with the technological advancements and "the other kind of marketing, the effective kind, is about understanding our customers' worldview and desires so we can connect with them" (Godin, 2018). Extrapolating these definitions, we can say that a website is a digital avenue for connecting with the audience and engaging it in meaningful experiences. Thus, a website does not act as a digital window shop or a digital lobby, neither a comprehensive informative brochure nor a collection of items for sale. It should be an extension of the physical experience and it should align with the values and the goals of the organization. It should echo its voice and feel.

The first step of marketing is "to invent a thing worth making" and the second one is to "design it in a way people will benefit from it" (Godin, 2018). In this respect, the design process emerges as fundamental for organizations of any kind. Indirectly, design shapes the external image of an organization. Global economic changes shape the structure of design practice, leading to "a convergence between design and other commercial practices such as advertising, management consultancy and public relations" (Julier, 2007, 24) .Thus, design has become instrumental in framing brand identity, in forging value for organizations, creating a great customer experience, and delivering the promises of New Economy "faster, better, cheaper" (Julier, 2007, 43). Because digital media is so ubiquitous, the way designers envisage the shape and the interactivity of digital environments is consequential.

All the things that we use are designed - from automobiles, fashion, and furniture to complex electronic devices and machines. Not all designed things involve physical construct. Curriculum, services, communication campaigns, and organizational structures "do not have physical mechanisms, but their rules of operation have to be designed, sometimes informally, sometimes precisely recorded and specified" (Norman, 2013b, 4).

The conceptual framework I propose in this paper stems from interaction design and experience design. Interaction design pinpoints how people understand and

use technology. It emphasizes readability and usability and aims to provide a pleasurable experience. Experience design "is practice of designing products, processes, services, events, and environments with a focus placed on the quality and enjoyment of the total experience" (Norman, 2013b, 5). The novelty of this paper comes from a holistic approach of web design, where content and the message represent a core part of design and have a considerable impact on user experience. Managers, web designers, and communicators operate in a technology enabled world. To serve their customers in a better way and to communicate with purpose, it is imperative to integrate technology and digital tools in a way that compliments their core assets. A website provides the digital infrastructure for presenting the core assets of an organization in a dynamic, interactive way. The question that frequently arises is what are the elements that count most in the design of user experience? Is it the style or the color palette? Is it the ease of use? Is it the comprehensive and clear information or the feeling of secure navigation? The proposed framework for website design identifies the key aspects for achieving a successful website.

2. Website design principles

The purpose of design is to offer a convenient solution and to create an extraordinary experience. Don Norman (2013) proposes "human-centered design" as a "design philosophy". The key for good design is "human-centered design (HCD), an approach that puts human needs, capabilities, and behavior first, then designs to accommodate those needs, capabilities, and ways of behaving" (Norman, 2013a, 8).

Drawing from the seven principles of Universal Design (Ronald Mace, North Carolina State University, 1997)[1], the process of website design should be guided by the following principles:

1. Equitable use. A website must be appealing and easy to navigate for all users. It should guarantee privacy, security, and safety to all users (for people with vision and hearing impairment, color vision deficiency, limited reading skills, or low information literacy).
2. Flexibility in use. A website structure and navigation should adapt to the user's pace, facilitate veracity and precision, and provide multiple forms of use and features.
3. Simple and intuitive use. The use of the website must be easy to understand by different types of users, regardless of concentration level. It should follow con-

1 The 7 Principles of Universal Design were developed in 1997 by a working group of architects, product designers, engineers and environmental design researchers, led by Ronald Mace in the North Carolina State University.The purpose of the Principles is to guide the design of environments, products and communications. Retrieved August 4, 2020, from: http://universaldesign.ie/What-is-Universal-Design/The-7-Principles/.

sistent information architecture and should provide feedback during and after task fulfilment, (e.g., a thank you message after registering for a newsletter or a message with further instructions needed to complete an online payment).

4. Perceptible information. The design must effectively convey the necessary information. Different types of content (video, image, text, audio) should be accessible across different digital devices. The design should maximize legibility and provide a contrast between essential information and its background. The information on the website should be accessible to disabled visitors and non-traditional internet device users.
5. Tolerance for error. The website design should provide a safe digital environment and make visible the messages that ensure visitor that their input data are safe.
6. Low physical effort. The design of a website should make navigation efficient and comfortable, minimizing the pathway to a certain outcome.
7. Size and space for approach and use. The design should consider an appropriate size and space for each element of the website. All types of media content should have a clear line of placement. The structure of the website should provide adequate means for browsing, searching, and useful ways of interacting with the media (e.g., downloading videos, zooming in images, highlighting text). It should provide adequate space across all digital devices. Content should be accessible to all crawler-driven search engines and directories.

The areas of design relevant to website design are interaction design and experience design. Thus, good website design should also incorporate the principles of interaction and experience. In his influential book *The design of everyday things*, Don Norman states the following fundamental principles of interaction: affordances, signifiers, constraints, mappings, feedback, and conceptual models (Norman, 2013a, 10).

Affordance is about the relationship between a website and a user. It refers to an attribute of the website that allows users to discover how to use it. For example, buttons afford clicking; a search bar affords writing and searching for a piece of specific information. For effective design, affordances must be visible and provide a clear understanding of how to execute various commands (Norman, 2013a).

A signifier "refers to any mark or sound, any perceivable indicator that communicates appropriate behavior to a person" (Norman, 2013a, 14). Perceived words and graphical illustrations that indicate what actions are possible and how they can be done are signifiers. In design, signifiers are vital for good user interaction and are more important than affordances, as Norman argues. Most often, digital signifiers are associated with hyperlinks - the cursor that turns into a pointed hand on the clickable text. Other effective signifiers are arrows that compel to hit the button, magnifiers for indicating that an image can be zoomed in, and headphones to indicate an audio content.

Constraints are imperative for web design, as they limit the possible actions and allow dismissing all unnecessary complexities. Constraints make the content discoverable, relevant, easy to read, and to use. There are four classes of universal constraints—physical, cultural, semantic, and logical (Norman, 2013a). One example of a constraint is a short navigation bar, which reduces the number of tabs.

The concept of mapping in web design is related to navigation and layout. Mapping is understanding the user flow and establishing a good relationship between navigation and outcomes. A good web design should aim for a natural mapping, one that is grounded in the principles of grouping and proximity. This makes the digital information clear and accessible, fostering an enjoyable interaction.

Each interaction between a website touchpoint and a user concludes with feedback. Feedback provides information about what has happened and what we should do about it. For example, after submitting our details for the purchase of an online ticket to an event we should see a thank you message, which further reassures the safety of the transaction and provides instructions about how to use the electronic ticket. Poor design of the feedback can deter users from submitting a question, subscribing to a newsletter, completing a survey, making a reservation, or online payment. Feedback conveys a sense of trust and empowerment. It should be planned and carefully integrated into the design process.

Conceptual models predict the effects of specific actions. The conceptual model of a website is a useful and simplified explanation about the goal of the website and how it works. Layout, navigation, and all visible elements suggest the conceptual model. For users, it looks like a coherent image or story, while in reality separate pieces of information are located in the cloud. Good conceptual models make the information clear and the experience enjoyable (Norman, 2013a).

The way people interact with a website determines their experience and perception about the website and the organization it stands for. Difficult and confusing interactions create frustration and strong negative emotions. Whereas a discoverable, accessible, and understandable web page "can lead to a feeling of control, of mastery, and satisfaction or even pride—all strong positive emotions. Cognition and emotion are tightly intertwined, which means that the designers must design with both in mind" (Norman, 2013a, 10).

Effective interactions create a great experience. Pine and Gilmore (1998), pioneers of the experience economy, have stated five key experience-design principles. To enrich the user experience and help organizations attain their goals, web design must employ the following principles:

1. Theme the experience. All elements of website design should stage a themed experience and converge toward a coherent story.
2. Harmonize impressions with positive cues. The website design must incorporate visual and audio cues that affirm the nature of the experience and convey a positive effect.

3. Eliminate negative cues. The design of a web page must dismiss any meaningless content or labyrinthine pathways.
4. Mix in memorabilia. Experiences stick in our memory if we have a physical reminder. In the case of a website, digital collectibles are examples of memorabilia. For example, a theatre that provides acting classes for children may offer digital cards and stickers. An opera website may offer subscribers downloadable versions of anniversary albums with a special message from the director or a featured artist.
5. Engage all five senses. The theme of a website and the overall feel can be emphasized by engaging all five senses. Embedding sensory triggers in experience makes it more powerful and memorable. BRAND sense study revealed that maximizing sensory touchpoints lead to higher activation of sensory memories. The intense sensory activation contributed to a stronger bonding between brand and consumer (Lindstrom, 2005, 69).

The principles of good design are universal and apply to all physical and non-physical objects that are created by humans. The principles described in the above section are relevant and paramount for website design. Yet, for a more accurate and comprehensive perspective, the process of web design should be rooted in web standards. Jeffrey Zeldman, the initiator of The Web Standards Project (1998) and the author of *Designing with web standards*, asserts that web design should be tailored to meet web standards. The purpose is to make adaptable, dynamic, and accessible web pages with "easy-to-find (and beautifully styled) content" (Zeldman & Marcotte, 2009, XX). Web standards achieve this purpose by offering guidelines for each of the three components of any web page: (1) Structure, (2) Presentation, (3) Behavior, which form the "trinity of web standards". Structure pertains to a markup language (HTML, XHTML, and XML) and it provides the backbone for accessible content and navigation across all web browsers and digital devices. Presentation (CSS) refers to the way content is presented on a web page. It includes layouts, typography, colors. Behavior (DOM Script) enables sophisticated effects that work well across multiple platforms and browsers. It refers to how a website behaves on different browsers and digital devices, anywhere in the world.

The World Wide Web Consortium (W3C) is a Web standards organization founded in 1994, which develops specifications, guidelines, software, and tools to lead the Web to its full potential. W3C's mission is to develop guidelines and principles that ensure long-term growth for the Web. The principles of web design proposed by W3C enable the creation of a web landscape that is accessible, usable, and inclusive for all and on everything, in a way that fosters trust and confidence. Tim Berners-Lee, the inventor of the World Wide Web (1989) and the Director of the W3C has articulated six design axioms of the web: simplicity, modularity, decentralization, tolerance, the test of independent invention, the principle of least power (The World Wide Web Consortium website – https://www.w3.org).

Combining and condensing principles from universal design, interaction design, experience design, and web standards, I propose the following website design fundamentals:

- Designing for engagement – stage an experience.
- Designing for storytelling – communicate a cohesive image and tell a meaningful story.
- Designing for persona – speak for specific users, answer their questions, alleviate their pain points, delight them with a seamless experience.
- Designing for touch – as touchscreens have become ubiquitous, web design must be optimized for finger.
- Designing for emotion – deliver emotional experiences to establish genuine connections.
- Designing for logic (information hierarchy) – a very clear structure that emphasizes the most significant pieces of information.
- Designing for content – layout must fit the content, not otherwise.
- Designing for performance – content must be provided fast, precise, and convenient.
- Designing for discoverability – content must be easy to find, from anywhere, by anyone.
- Designing for accessibility – content must be easy to read and understand, from any digital device or browsing platform, by all users.
- Designing with audience insights (with big data and small data) – all choices regarding web design must be anchored in a deep understanding of the users.
- Design with web standards and refresh with trends.

3. Website design: a blueprint for effective engagement

"Websites have become the most important public communication portal for most, if not all, businesses and organizations" (Garett *et al.*, 2016). Today, most of the interactions between customers and organizations occur online. It has become commonplace for customers to do their online research prior to a physical interaction with an organization. In this respect, Website design is central for creating an engaging experience for users. A Website "should establish an effective information and communication channel between organizations and their clients" (Rocha, 2012). But more than being marketing and communication channels, Websites are "rich, dynamic places", they are parts of "organizational ecosystems" (Morville, 2014) and are extensions of the organizations in the digital landscape.

The battle for attention is intense and the attention spans are ever shrinking. The proper design can increase user satisfaction, positive attitudes towards the organization, increase retention, and fuel desired outcomes. Design is critical to success in business (Mau & Leonard, 2004). Design is everywhere in our daily lives and

most of it is hidden behind cultural, economic, and environmental structures. Good design is a combination of utility and significance, which brings pleasure, purpose, and beauty to our lives (Pink, 2005).

Two essential characteristics of good design are discoverability and understanding (Norman, 2013a, 3). In web design, discoverability concerns how the users discover Website and content, what tasks they can perform on a website, and how to perform them. Understanding concerns how users perceive the meaning of content, how they can use the features and functions of the Website, and how they can navigate. "Design is concerned with how things work, how they are controlled, and the nature of the interaction between people and technology" (Norman, 2013a, 5).

To stand out in a crowded marketplace, web design must be bold, beautiful, and provide a seamless experience. Web design is a complex activity and a collaborative effort. "It isn't designed against engineering, against marketing, against manufacturing: it is designed together with all these other players" (Norman, 2013a, 243). In a hypercompetitive global marketplace, where the internet and digital devices are intertwined in our daily activities, it is essential to create high-quality websites, "that satisfy the required purpose(s), have a magnetic aesthetic, and have a level of usability that makes it a suitable experience (in 'operational' terms)" (Lawrence & Tavakol, 2007, 8). Likewise, good web design combines artful engineering with an artful presentation to create a functional solution that will enhance people's lives.

The big challenge for web design is to accommodate "two opposing goals": (1) captivating users with a narrative of a fictional universe and (2) facilitating access to a piece of reliable information (Manovich, 2002, 42). The responsibility of a web designer is to "merge database and narrative merge into a new form", one that is organized to frame user's experience (Manovich, 2002, XVIII).

The website design should not be about inspiration, or imitation. However, the key practices employed in web design are stranded between random creativity and imitation. The common framework for understanding the concept of design is defining it as creative work. Hence, the assumption that a good website should have an impressive design and should be the work of inspiration for a creative webmaster. This paradigm reveals the underlying issue – how most humans perceive creativity. The standard understanding of creativity is linked to imagination, originality, and an artistic attitude. Thus, creative work is associated with a work of art, belonging to visual arts, music, drama, dancing, literature, or poetry. Today, "a work of art is generally judged as "fitting" in the aesthetic sense alone and this indicates the current state of fragmentation between art and other areas of life." (Bohm & Peat, 1987, 263). In a similar vein, people think that design is concerned with the good looks, style, harmony, and often disregard the practicality of design. Random originality or unfruitful creativity results in poor outcomes. After all, a website is not a mere window into the physical space of an organization. It is a digital interface that aims to engage users in compelling ways and nurture positive experiences.

Another common practice among web designers is imitation. Design patterns of successful companies are employed by a variety of organizations, no matter their audience, industry, or scope. Web designers assume that it is safe to pursue similar solutions and overly on preexisting designs as "a means of buffering against risk" (Scolere, 2019). This prevalent affliction is called "design fixation" and may have a consequential influence on the economic performance of an organization and its perceived quality. For instance, overlaying menu labels on top of attractive images results in a menu that is hard to read. This would prompt most users to look for better options. For established brands, this would be a minor inconvenience, because customers and fans are motivated to use them due to other factors. Customers are not concerned with the fact that it might have a bad reputation or a poor quality, as they already perceive it as being high quality. Designers may take inspirations from the latest trend and notorious companies, but they should always design for a specific audience and context and conduct their research on user behavior.

The website is not just an information outlet. From the standpoint of user experience, a website is an interaction channel. It is created with a specific intent, for a specific audience, which is guided to experience a journey through a series of touchpoints. For instance, for a theatre attendee, the virtual interaction that takes place on the website has the following touchpoints: (1) browse shows and theatre productions on laptop; (2) call theatre with a question; (3) buy an online ticket on a mobile phone; (4) download tickets. Consequently, the website developer is designing the interaction, not just a repository of information with a stylish interface.

This section aims to devise a strategic framework for website design, focusing on a user-centered standpoint. In this respect, one useful approach is to consider the perspective of website quality perception and assessment. A website plays an essential role in achieving marketing objectives and users have to perceive it as of high quality (Obadă, 2014a). We evaluate the experience and decide to act relative to a perceived quality. The various dimensions that influence the quality perception of a website derive from the structure of a website and should be considered in the design process. Understanding what features and criteria influence users to perceive a website as of high quality may provide useful insight for effective website design.

Perceived quality is a multifaceted entity, a result of designer/customer convention, and can be seen differently by the different research schools of thought (e.g. philosophy, marketing science, engineering, manufacturing), so it is crucial to establish definitions (Stylidis *et al.*, 2019). "Perceived quality can be defined as the customer's perception of the overall quality or superiority of a product or service concerning its intended purpose, relative to alternatives" (Aaker, 2009). Together with brand loyalty and awareness, perceived quality is a strategic brand asset. Because the perceived quality influences purchase decisions, "it can make all elements of the marketing program more effective" (Aaker, 2009).

But the question is who evaluates the quality and on what criteria? Is it the general audience, the users, the owner of the website, other web developers, or maybe experts judges deciding which website to award? What is the purpose of website design? To win awards or to achieve organizational goals? WebAward judging process includes seven criteria: design, innovation, content, technology, interactivity, copywriting, ease of use. One can easily see that these criteria are disparate and overlap. For example, innovation can be attributed to design and technology, interactivity can be associated with ease of use. It is not clear how the assessment of these criteria can reveal if a website accomplishes its marketing purpose and provides meaningful interaction with the organization. The problem is that experts judge websites for which they are not the end-user. Even if a select group of industry leaders evaluates the websites, the opinion is highly subjective and may have little relevance for the specific audience of the websites. Furthermore, an award trophy is not a guarantee for effective web design in terms of engagement and generating revenue. Instead, framing this recognition of excellence into the design of the website can help the organization to win attention, credibility, and build relationships. So, it all comes to content, and how an organization integrates it in the experience it provides and the technology it uses to make it available.

Rocha (2012) proposes three criteria for quality evaluation of a website: (1) content quality, (2) service quality, and (3) technical quality. The attributes for content quality are accuracy, completeness, relevance, opportunity, consistency, coherence, updates, orthography, and syntax. The evaluation of service quality focuses on security, reliability, privacy, performance, efficiency, accuracy, opportunity, availability, response time, time-saving, empathy, reputation, and personalization. The technical quality assessment considers factors such as navigation map, path, search engine, download time of pages, browser compatibility, broken links, and accessibility. Rocha asserts that a framework that is structured on these three dimensions can enable "a broad, integrated, transversal, and detailed quality evaluation of a website."

The subject of website quality has been studied extensively since 2000. Different scholars propose different dimensions. Most applied evaluation systems of web quality are WEBQUAL or E-QUAL (Kaynama & Black, 2000), SITEQUAL (Yoo & Donthu, 2001), PIRQUAL (Francis & White, 2002), WebQualTM (Loiacono *et al.*, 2002), eTailQ (Celsi & Gilly, 2003). WEBQUAL or E-QUAL evaluates the following 7 attributes: content and purpose, accessibility, navigation, design and presentation, responsiveness, background, personalization, and customization. WebQualTM assesses 12 dimensions: informational fit-to-task, interactivity, trust, response time, ease of understanding, intuitive operations, visual appeal, innovativeness, flow/emotional appeal, consistent image, online completeness, and better than alternative channels. eTailQ measures the following 9 dimensions: fulfillment/reliability, customer service, personalization, usability, experiential/atmospheric, ease of use, informativeness, selection, and security/privacy.

The problem with these systems is that they do not exhibit a structured framework that would provide proper guidelines for web designers and website owners. The measured dimensions are rather disparate and are not integrated into a cohesive system. Some of the dimensions are components of a web page (background, visual appeal, navigation), while others are attributes (interactivity, accessibility, customization, innovativeness).

3.1. A conceptual framework for website design

In this paper, I propose a conceptual framework for designing a website. The purpose is to provide a blueprint for effective digital audience engagement through design. It can also become a starting point for the development of systems for website quality audits. Within this framework, the four pillars of the website design are (1) content, (2) aesthetics, (3) software architecture (usability + utility), (4) security. These elements are interrelated, they condition each other, and are determined by the nature and the purpose of the website. Content formats shape aesthetic choices, how the elements interact and behave, and how to manage data protection. The aesthetic identity of an organization impacts how content is organized. Usability shapes the pathway to a piece of content and determines how the users can access and interact with the content. If security is a primary concern of a website (e.g., governmental websites) then certain features related to aesthetics, usability, or content may be accommodated accordingly.

The enabler of the four pillars is research. This foundational process crystallizes the intent of the stakeholders and the true nature of the users. Finally, the proposed solution, rooted in clear understanding, integrates and harmonizes content, aesthetics, usability, utility, and security into one meaningful experience that deeply engages users and creates longlasting connections that will support organizational goals and decide its wellbeing.

Above all, the experience has to be consistent with the overall “look” and “feel” of the organization, displayed across all other touchpoints, online or offline. For evaluating the user experience, Peter Morville, co-creator of modern information architecture provides a valuable concept - “user experience honeycomb” with a set of seven requirements for a good information system. On this account, a good website should be usable, useful, findable, valuable, credible, desirable, accessible. We can easily see that these features apply to each of the four pillars and each category has a role in conveying usability, usefulness, findability, value, credibility, desirability, and accessibility. Such a holistic approach is imperative for a successful web design project and is possible only through a collaborative effort.

Considering the 4 dimensions, I propose a conceptual framework of website design, depicted in Figure 1.

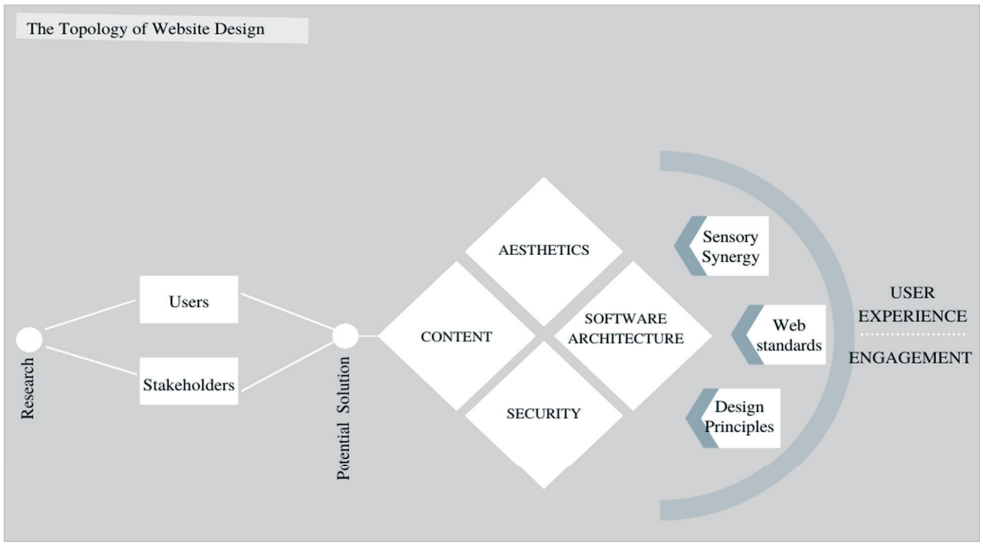

Figure 1. The Topology of Website Design

3.1.1. Content design

Content is the core asset of an organization and the design of a website should start from the content out. Amid the digital revolution, content "has become a hidden asset of great value" (McGovern, 2006, 38). "The web content industry is at pretty much the same point as the oil industry was in the 1930s: the beginning of a big, long boom" (McGovern, 2006, 41). The design of a website must fit the content not otherwise. "Nothing is better than a site that's designed to serve specific words, themes, and messages; nothing's worse than a beautiful template that, when you dump words into it, turns out to hinder the site's communication." (Zeldman & Marcotte, 2009, 347).

Content must embody the needs of the intended audience and scope of the website (Lawrence & Tavakol 2007, 8). Content that is relevant for the users becomes findable on the web and search engines are pushing it "to the top of the digital data pile." (Lawrence & Tavakol, 2007, 70). This means that proper and relevant content comes first in the search results, without having to pay for SEO or ads. Research from the field of information foraging suggests that web design should (1) support short visits, (2) encourage users to return using a newsletter or other reminders, and (3) ensure search engine visibility. Guidelines from information foraging theory suggest that web design should prioritize recurrent visits and maximize the rate at which users will find useful content upon visitation (Pirolli, 2007, 169).

Content refers to text, images, audio, and video integrated into the information architecture. The text refers to language and words used for value propositions, call to actions, descriptions, messages (error message, message after submitting a form).

Additionally, words are used for menu labeling. Words are both interface and infrastructure (Morville, 2014). Words help us use the website (website as interface) and support us in understanding the whole (words as infrastructure).

When creating content, we should consider the following: categories, formats, features, and purpose. Examples of content formats are section descriptions (e.g., organization team, history), articles, portfolio, product or service information, press releases, marketing materials, blog posts, employee biographies, FAQs pages, videos, forms, functional pages (e.g., registration for events), PDFs and other downloadables. All of these have to be collected in a "content inventory" (Halvorson, 2009; Garett, 2011) and serve as the foundation for the design process.

The purpose of a piece of content and user requirements should drive the choice of content formats. One purpose can be fulfilled through different formats. For instance, providing access to commonly needed information can be fulfilled by a FAQs page (Garrett, 2010, 72), by creating different pages for addressing each question, or by offering answers in a video or an infographic. The size of a content element is a feature. The number of words for texts, length of words for labels, pixel dimensions for images or video, file sizes for downloadable content (PDF documents, audio, and video files), are features that have a significant impact on user experience and design. Large media files do not perform well on old devices and ones with a slow Internet connection. Downloadable high-resolution images and HD files require different design approaches. "Knowing in advance the size of the content elements we have to accommodate enables us to make smart, informed decisions along the way" (Garrett, 2010, 73).

Other key points to consider when designing contents are metadata and information architecture. Metadata is content behind content and is essential for findability. Each web page and piece of content on the website are associated with information that allows web search engines to index them and make them findable by the users. "Metadata enables content to be retrieved, tracked and assembled automatically" (Halvorson, 2009, 58). Examples of such information are HTML tags, keywords, header tags, page description tags, alt text, and captions for images.

Information architecture is "the arrangement of content elements to facilitate human understanding" (Garrett, 2010, 30). It is concerned with how information is organized, how content conveys meaning. Good information architecture allows users and search engines to find the information easy and to make sense of it. There are several approaches for creating the information architecture (Garrett, 2010, 89–95): a top-down approach, bottom-up approach, architectural (node, tree, matrix, organic, sequential). The type and the scope of the website drives the approach. No matter the approach, information architecture starts with understanding how people process information, with understanding the intent of users and the stakeholders, the needs of the users, and the organizational objectives. Essentially, it all starts with the research process. In a world that is changing fast, it has to be ongoing,

well-planned, and broad. This will ensure the content is relevant and enjoyable for target users, is aligned with the organizational strategy, and adds long-term value.

Design principles for content

Kristina Halvorson, a leading content strategist, argues that content should be useful, usable, and enjoyable (Halvorson, 2009, 80). The World Wide Web Consortium (W3C), the world authority in web standards, have outlined the following basic principles for accessible web content: (1) content must be perceivable; (2) interface elements in the content must be operable; (3) content and controls must be understandable; (4) content must be robust enough to work with current and future technologies.

Gerry McGovern has introduced the framework of "Six Cs" for "killer content" (2006, 73):

1. Care – content for people who care.
2. Compelling – words that matter for the target audience.
3. Clear – complex information communicated in a simple manner.
4. Complete – all the necessary information to help people complete a task and make sense on their own.
5. Concise – information distilled to its core.
6. Correct – true information and accurate grammar.

Another two essential attributes of content are accessibility and findability. Accessible web content means it can be retrieved and consumed by a variety of people (with or without disabilities) in all kinds of contexts. For example, for people who are using a website in a noisy environment content has to be more visual, whereas for people with vision impairment, who can't read well or for people who have their eyes busy content is accessible if they can hear or feel it.

3.1.2. Software architecture: Utility and Usability

The second pillar of website design is software architecture. It encompasses two key elements – usability and utility, which must be considered simultaneously when building a website. An information system must be both useful and usable. For instance, "a usable system – one that is easily learned and handled – can be useless, serving no recognizable purpose" (Grudin, 1992). Yet utility and usability are rarely considered together when developing a website. In most projects, the emphasis is on usability.

Jakob Nielsen is the world's authority on web usability and his extensive account on usability has been applied worldwide since the early 1990s. Usability is about how comfortable and seamless it is to use a system. Usability refers "to how quickly people can learn to use something, how efficient they are while using it, how memorable it is, how error-prone it is, and how much users like using it. If people can't or won't use a feature, it might as well not exist" (Nielsen & Loranger,

2006). Steve Krug (2000) has captured the essence of usability in one simple sentence: "Do not make me think!".

Usability bears upon interactions between human and technology, that are similar for most users (Grudin, 1992). How we perceive visual information, how we read information, and how we process information is similar to most humans. While, utility means providing users the features they need (e.g., download, book, pay, make an appointment, send a form), usability concerns how intuitive and enjoyable these features are to use. Utility reflects the functions of the user interface and indicates what is possible to do within it. Usability is about how to use the functions or utilities and how is the experience, it enhances a website's features. For a website to be effective, usability and utility must converge.

People visit a website for its utility, for its features and for what it has to offer. People go online to buy products and services, to book tickets, to read, to watch videos and listen to music, to search for information, to seek advice and answers to a variety of questions, to learn new things, to submit different documents and make payments, to compare offers. Consequently, they need the best tools to complete the desired action. In this respect, utility elements must be instantly recognizable, consistent with industry standards, and offer a complete set of tools. A website is highly functional when users can quickly find a utility when they need it, where they suppose to find it. Therefore, placement emerges as the key element regarding utility. For the most important utility tools (search bar, login, and my account), a prominent placement ensures better visibility and more chances for the elements to be noticed.

Utility actions and tools include search, help/support, sign in / register, contact, reading list, subscribe, choose the language, download PDFs, submit forms, make a payment, book online, print, save, share (this is not an exhaustive list). Utilities are more likely to be predetermined by industry standards and website purpose than by patterns of behavior of target users of an organization. For instance, for an e-governance Website, utilities are mostly the same for people in any country, whereas usability requirements may need to be personalized for different cultures or regions. For an arts organization, utilities may be the same (contact the organization, book tickets, download music, read about actors, subscribe to the newsletter), while usability elements have to be attuned to the target audience – it may be children, affluent adults who expect sophistication or millennials who seek unconventional experiences. Just like usability, the utility has to be tested, to offer website visitors the best possible solution and experience. The tools for testing utility are the same as in the case of usability.

Nielsen Norman Group proposes the following utility guidelines (Farrell, 2015):

- Provide icons with text labels and use them consistently.
- Test navigation icons, for both comprehension and interaction. Hiding mission-critical tools under navigation icons creates confusion and a bad experience, because people tend not access what they do not understand.

- Organize functional icons where people expect to find them, either in the top-right corner or next to the content they. People tend to look at navigation areas quite closely when searching for things they need so it's okay to blend them in with other navigation structures.
- Use familiar looking buttons and language.
- Create a separation between social media icons. The Follow us should be devided from the Share this. Despite looking similar they describe different intentions.
- Research shows people do more sharing with their tools and methods. In addition, social sharing tools present on a web page bring visual clutter, while providing minimal engagement. Hence, it would be wise not to embed social media Share and Like tools or to use them sparingly.
- Provide easy access to subscription tools – newsletter, feeds, follow authors.
- Implement search-tool best practices.
- Instead of flags, use the name of the language.
- Place Log In and Sign Up next to each other.
- Use colors and buttons to pinpoint the essential actions and guide the eye to discover and access the utility area.

Historically, usability has been the zenith of interface design (Aaron 2011, 7). Usability is a multi-dimensional and adaptive property of a user interface or an information environment (a website). It encompasses five attributes (Nielsen, 1993, 26):

1. Learnability: The system should be intuitive so that the user can rapidly learn to use it.
2. Efficiency: The system should allow a high level of productivity, once the user becomes familiar with it.
3. Memorability: The system should be easy to use and empower a casual user to use it any time (s)he returns.
4. Errors: The system should have a low error percentage and allow easy recovery in case of accidental mistakes.
5. Satisfaction: The system should bring pleasure in using it.

Lawrence and Tavakol (2007) have discussed two usability categories - 'straight' and 'curved' usability. They argue that a website identity is established through both straight and curved usability, with an emphasis on one of them, depending on the nature of the website. Straight usability guidelines are simplicity in design, brevity, and clarity, links and selections should be optimized for speed, content should be written for skimming and scanning, speedy and seamless navigation, clear layout of visual and text, a thorough view of website and current location at any time the users navigate through the website. The authors include content quality as an element of usability. This is also consistent with Nielsen's perspective, as

many of the usability guidelines refer to dialogue (or content). However, the stance of this paper is that content is an integral part of web design, independent of usability but strongly related to it. Content is the most valuable asset of an organization and a website provides a platform for communicating and nurturing interactions, whereas usability is how people find content, understand it, and use it.

In the case of curved usability, the simple and agile design is balanced with the need to support the complex nature of some organizations and their extensive content inventory. "Navigation ease and awareness of position within the total map of the site might be something that needs to be made 'less comfortable, more thoughtful, not quite so 'immediate', and perhaps more 'conceptual' to match the desired style and character" (Lawrence & Tavakol, 2007, 116). This would be the case of websites that propose challenges, stimulate thought, or action. For a web designer, the mission is to find the right balance between straightness and curvedness, for the right audience and the purpose of the website.

Nielsen and Loranger (2006) outlined the following usability categories:

1. Search.
2. Findability (information architecture, category name, navigation, links).
3. Page design (readability, layout, style, graphics, scrolling).
4. Information (content, product info, corporate info, prices).
5. Task support (workflow, privacy, forms).
6. Design (multimedia, back button, PDF printing, new window, sound).
7. Other (Presence on web, ads, new site, metaphor).

This classification implies that usability is an umbrella term for a broad range of elements – from navigation, content, and security to aesthetics. This is useful as long as we evaluate the overall user experience. Yet, to develop a comprehensive design framework, helpful for web designers, web site owners, and quality assessment, it is important to consider these elements separately. This way, the possibility of overlooking impactful components and attributes is minimal. In addition, such an approach would be helpful to organize and coordinate the entire design process. Certainly, different attributes of content, usability, utility, aesthetics, and security overlap. The borders are not sharp, and some criteria seem to fit both content and usability, or both security and usability. Nevertheless, using the proposed framework to design a website ensures better integration of all elements and increases the value of the outcome.

Usability is not a fixed quality. It has to be methodically assessed and improved. The two most common methods for usability assessment are usability testing and heuristic evaluation. Usability testing is an evaluation method that provides direct information from real users to guide a new version of the interaction. It tests the behavior of real users when navigating on a website. Some typical measurements include: the time users take to complete a certain action; the number of steps necessary to complete an action; the time spent recovering from errors; the number of

user errors; the number of commands or other features that were never used by the user; the number of times the user expresses frustration or joy; the number of users who say that they would prefer using the website over some other competitor; the number of response-time delays; the number of times the user is derailed from accomplishing the real task (Nielsen, 1993, 194).

One method to identify problems in user interface design is heuristic evaluation. It is performed by a small group of evaluators who inspects the website and examines its compliance with usability guidelines or heuristics (Nielsen, 1993, 155). The most common problems that hinder the web user experience relate to search, information architecture, readability, content, product info, category names, layout, workflow, navigation, links, privacy/security, forms/registration, multimedia, graphics/buttons, back button, PDF printing, bug/site performance (Nielsen & Loranger, 2006). The most significant factors in task failure are search, confusing information architecture, content, product information, and workflow.

Drawing from the usability problems, Molich and Nielsen (1990) have summarized a list of 10 usability general guidelines (Nielsen 1993, 20):

1. Simple and natural dialogue: Content display should reflect a clear information architecture and logic order.
2. Speak the users' language: Language should be clear and familiar to the users.
3. Low memory load: Instructions for use of the system should be clear, visible or accessible
4. Consistency: Words, situations, or actions should be clear for everyone.
5. Feedback: Appropriate and timely feedback keeps users informed at each stage in the customer journey.
6. Marked exits: Users often choose system functions by mistake and will need a noticeable "emergency exit" to leave the unwanted state without having to go through multiple points.
7. Shortcuts: The use of timesavers to speed up the interaction and the sought outcome.
8. Thoughtful error messages: They should be stated in plain language, indicate the problem with precision, and suggest a clear solution.
9. Prevent errors: Better than good error messages is a careful consideration for designing a system that prevents errors.
10. Help and documentation: It may be helpful to provide help and documentation. Such information should accessible, concise and focused on the user's objective.

Many of the web usability guidelines have been largely influenced by Information Foraging Theory (Pirolli, 2007, 167). One essential aspect of usability is to forge a clear pathway to the information a website provides (content) and increase its utility, which in turn increases user satisfaction and supports regular visits. In this respect, design communicates informational cues or "information scent" through

links. To improve usability, it is imperative to devise an effective linking strategy. Spool *et al.* (2004) have developed a comprehensive list of specific guidelines, that bring valuable information for web designers and content creators. They have discovered that users do not dislike clicking through multiple pages if they feel they are getting closer to their goal with each click. Links should accurately indicate the content of the next page. Otherwise, users lose confidence in the site. Trigger words need to be understandable. "Jargon and cute marketing terms confuse users". Links in navigation panels should be long enough to be informative and always contain the user's trigger words. Additionally, the ideal link length is between seven and twelve words and links that appear in the top 60 pixels of the page are usually ignored since banner ads are usually placed in this area. Another valuable finding, which goes against the popular approach, is that successful websites approach design from the content pages instead of the home page. To devise the right access to content is to deliver content that reflects the priorities of target users by answering the following critical questions:

- Why are users visiting the site?
- Which page is most relevant to the user?
- How will users discover this page?
- What are the users' trigger words?
- Where the user will look for those words?

3.1.3. Aesthetics

Another critical component of website design is aesthetics – the visual part of a website. It concerns the style of utilities and usability elements. Of all the components of website design, aesthetics is the one that offers visitors cues about the personality of the organization, signaling if it aligns with their expectations and matches their style.

Aesthetics is about what makes a site beautiful and attractive. It is the visual presentation of content, navigation, and interactive elements. "The classical formal dimensions of design – color, contrast, proportion, shape" (Mau & Leonard, 2004) convey information and help website visitors to use the web interface intuitively. The attributes of beautiful design that can be applied in web design are balance, harmony, and simplicity.

Beauty is not a mere decor or extra embellishment. It is a valuable concept for people, and organizations of all kinds. A website that provides the necessary information and speedy navigation will please the users, but adding a distinct flavor and refreshed look will make it stand out and delight visitors. In the age of experience economy, beauty ads value, creates emotional engagement and lasting impression. Thus, a website should not appeal only to functional needs, but also be "pleasing to the eye or compelling to the soul" (Pink, 2005). A website without an emotional component is lifeless and does not connect with people (Saffer, 2009).

Good website design provides a complete experience if the content is appropriate, the functions satisfy the users' scopes, it is easy to use, and it is enjoyable. Aesthetic pleasure plays a significant role in creating an enjoyable and memorable experience. When designing, four types of pleasures have to be considered (Norman, 2004): (1) physio-pleasure – perceived through our senses; (2) socio-pleasure – derived from social interaction; (3) psycho-pleasure – gained from completing a task; (4) ideo-pleasure – derived from appealing to values (e.g., environmental protection, freedom, etc.).

In *Emotional Design: Why We Love (or Hate) Everyday Things*, Donald A. Norman (2004), a pioneer in user experience and human-centered design, defines three levels of design: visceral, behavioral, and reflective. The behavioral aspect of design is all about how an object performs its functions or usability. The reflective side of the design is about content, message, about culture, and the purpose of a product or its use. The reflective design evokes personal memories or emphasizes self-image. The visceral dimension of design is about the immediate reaction to physical features – look, feel, and sound. A good design should be an attractive one, it should provide an enticing appearance. The basic principles of visceral design are innate, consistent across people and cultures. A good website should work on all three levels. Nevertheless, the emphasis may vary considerably depending on the type and scope of the website.

Beautiful web design is strongly related to high usability. For example, the level of 'usability comfort' impacts perception about how enjoyable an experience is (Lawrence & Tavakol, 2007, 118). Donald A. Norman points out in his influential book that beauty, cognition, pleasure, and usability go hand in hand. Using an attractive thing creates a positive emotional state, which in turn makes people more creative in finding solutions to the problems they encounter. According to Norman's aesthetic-usability effect, "attractive things work better" and they are perceived as easier to use (Norman, 2004). Similarly, "usability and aesthetics need to be contemplated and designed in close proximity" (Lawrence & Tavakol, 2007, 116).

Seamless navigation, intuitive actions to complete tasks are usability features that need to be taken into consideration when creating the visual identity of a website. An outstanding appearance that disregards the website's target purpose and does not establish a clear pathway to the content hinders the entire user experience. Good website aesthetics must unify language, visual elements, navigation, interactivity characteristics into one canvass that makes the content accessible and usable. Often, great content is wasted because of bad aesthetics. This means that users have trouble finding it, using it, or are detracted by an improper style that makes it unreliable.

The aesthetic dimension is a foundational one. A good solution is always beautiful. Functionality in the absence of art limits the meaning and the potential. "It is art that connects to our life, to human needs and emotions, that allows us to

build a bridge to new possibilities" (Mau & Leonard, 2004). "There is no formula for emotional design, only principles of psychology and human nature to guide you" (Aaron, 2011, 65). A website should be designed in a way that appeals to user emotions and makes the value clear. Important emotions to take into consideration when creating a website are trust and connection. If the user trusts the website she/he will be confident to complete an action (make a payment, subscribe, submit personal details). For website owners, it is important to convince users to spend time with it and encourage repeat visits. The key to effective web design is to find the right balance between functionality (speed, range of options) and aesthetic features (balance, emphasis, movement, pattern, proportion, harmony, and variety), which depend on the intended audience, the purpose, and type of a website.

W3C have outlined several good practices for creating accessible visual design and for complying with Web Content Accessibility Guidelines (WCAG):

- Maintain good contrast between foreground text, buttons and background colors.
- Convey information or differentiate elements by using color in combination with other elements, such as an asterisk to indicate mandatory form fields.
- Provide different styles for interactive elements, such as links and buttons, to increase their visibility. Styles and naming for interactive elements have to be consistent throughout the website.
- Use consistent naming, styling, and positioning, to ensure a seamless navigation across pages within a website.
- Ensure that all fields have a descriptive label, attached right next to the field.
- Display in a noticeable way the critical feedback that requires user action.
- Use whitespace and proximity to mark the relationships between content. Group content by using style headings, diminish information clutter and make it easier to read and understand.
- Create responsive designs. Consider how page information is displayed on different screen sizes, such as mobile phones, tablets or ultrawide cinema monitors. Whining the same website, images and media can be different for each digital device.
- Allow users to easily stop any pop-up forms, animations or auto-playing sound.

3.1.4. Security

A website must ensure a secure interaction between users and the platform. The goal of the security pillar is to protect information, systems, and assets. A well-designed information system must provide reliable, efficient, informative, enjoyable, and secure experience. A website is beautiful, neat, and trendy when content, utilities, usability elements, and security work in concert and are planned from the beginning of the design process. Great content, easy understanding, relevant functions, polished style provide operational satisfaction, performance efficiency, and

reliability. But without security considerations, everything else might be a single-use experience.

Security issues are relevant for all the stakeholders of a website – web designers or web developers, website users, website owners, service providers (hosting, maintenance, content management system). User data confidentiality and privacy are critical aspects of the user experience. If a user feels that his navigation on the website is not secure, she/he will abandon the action and might never return to the website. Actually, without security there is no user experience, there can't be a memorable experience and engagement. Likewise, for website owners, hacker attacks put at risk the entire organization's activity, incur huge costs, and irreversible losses.

The challenge for building and operating a secure architecture is to consider the aesthetic and usability features. Oftentimes, high-security standards may require a more complex authentication process, this, in turn, affects the ease of use and even aesthetics. The GDPR policy which forces websites to show pop-up windows right upon accessing a website is just one popular example. Just like with other design pillars (content, usability and utility, aesthetics), security must be an ongoing process, always seeking to remain relevant for users, following the basic principles, while adapting to new trends and behaviors.

A good website design must incorporate established security standards and protocols at each step of the development process and at all security layers (process, policies, procedures, content, technical details). The World Wide Web Consortium (W3C) provides policy, guidelines, and best practices for creating secure web architectures. Additionally, ISOC, COBIT, IETF provide comprehensive web security frameworks.

4. Conclusion

To design a website for effective digital engagement means to create an emotional attachment. Emotional attachment is not an easy thing to attain and certainly not immediate. It is based on trust that comes from numerous positive experiences (Norman, 2004). Beauty and behavior shape these experiences. People evaluate these two attributes against personal values and perceptions and there is no standard approach for developing a website. But the constant landmarks of great design, beyond trends and preferences, are honesty, consistency and coherence. Brilliant design is one that unveils the personality of an organization in an honest, consistent, and coherent way (Norman, 2013b).

The framework provides a conceptual structure upon which to assemble just the right pieces for the intended audience and organizational goals. It brings a novel approach since it places content, aesthetics and security distinctively. Previous studies have included these categories under the umbrella of usability. I argue

that such an option affords better integration of all key design elements and increases the value of the outcome. Moreover, it provides a structure for methodically assessing and improving web design. The internet has enabled a transactional environment where organizations of all types compete fiercely for our time, money and attention. Consequently, the marketing theory has extended and, once separate fields, now converge (marketing, sales, communications, design), while specialists face the challenge of operating with multiple and complex tools. The discussed framework can guide website design to play a strategic role in marketing communication, in engaging with the audience and nurturing long-term relationships.

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