Evolution of Online Marketing Communication Tools: Classification, Technological Integration, and Functional Analysis Across Web Generations

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ABSTRACT

Online marketing communication tools (OMCT) have become indispensable in the digital era, enabling businesses to build meaningful customer relationships and achieve competitive advantages. The rapid evolution of web technologies—from Web 1.0 to Web 3.0—has transformed the functionality and application of OMCT, impacting communication strategies in virtual spaces. Despite these advancements, current classifications of OMCT often fail to integrate a comprehensive user-focused perspective, limiting their applicability to modern business contexts. This study examines the system of OMCT and its evolution, addressing the absence of a unified framework that reflects these tools' relevance across customer lifecycle stages and technological foundations. The study aims to develop a classification framework that aligns OMCT with customer interaction patterns and evolving virtual space technologies. Through theoretical analysis, the research identifies key OMCT categories and their implications for enhancing business communication strategies. This systematic approach offers practical insights for optimizing digital engagement and adapting to technological advancements in the evolving digital marketplace.

Keywords: online marketing communication tools, Web 1.0, Web 2.0, Web 3.0, classification framework, customer lifecycle.

1. Introduction

In the digital era, online marketing communication tools (OMCT) have become indispensable for businesses striving to establish meaningful connections with their customers. The rapid evolution of web technologies, from Web 1.0 to Web 3.0, has significantly transformed the methods and tools companies use to communicate, engage, and create value in the virtual space. These transformations are not only technological but also socio-economic, highlighting the need for a deeper understanding of how online communication tools align with customer behavior and business objectives.

The relevance of this study lies in the growing importance of OMCT in building effective communication strategies that cater to the changing dynamics of virtual spaces. As businesses increasingly rely on digital channels, understanding the functionality and application of various tools across different stages of web development is crucial for enhancing customer engagement and achieving competitive advantages. Despite the significant advancements in web technologies, existing classifications of OMCT often lack a comprehensive approach that integrates the user's perspective, lifecycle stages, and the unique capabilities of each tool.

The key problem addressed in this study is the absence of a unified framework for classifying OMCT that reflects their functionality and relevance in contemporary virtual spaces. Current classifications often fail to consider user empowerment, evolving customer needs, and the technological shifts from Web 1.0's

static environments to Web 3.0's dynamic, user-generated ecosystems. This gap complicates the development of effective marketing strategies tailored to the modern digital landscape.

The object of the study is the system of online marketing communication tools and their evolution across different stages of web development, with a specific focus on their classification, functionality, and application in business communication strategies.

The goal of this study is to develop a comprehensive classification framework for OMCT that incorporates their usage patterns, technological foundations, and customer interaction capabilities. This framework aims to provide practical insights for businesses to optimize their digital communication strategies.

To achieve the outlined goal, the following tasks are undertaken:

1) Analyze the theoretical foundations of online marketing communication tools and their classification methods.
2) Examine the evolution of OMCT in relation to web technologies, from Web 1.0 to Web 3.0.
3) Identify the practical implications of the proposed classification framework for enhancing business communication strategies.

By addressing these tasks, the study aims to bridge the gap between technological advancements and their application in online marketing communication, offering a structured approach to understanding and leveraging OMCT in the evolving digital environment.

The study employs the method of scientific literature analysis to systematically review and synthesize existing research on online marketing communication tools (OMCT) and their evolution across different stages of web technologies. This method enables the identification of theoretical frameworks, classification principles, and technological advancements relevant to OMCT. By analyzing a broad range of academic sources, the study highlights gaps in existing classifications and explores the relationship between OMCT functionality, user behavior, and business communication strategies. The literature analysis forms the foundation for developing a comprehensive taxonomy of OMCT and assessing their application in contemporary virtual spaces.

2. Transformation of Online Marketing Communication Tools

System of online marketing communication tools. Theories of online marketing communication examine the possibilities of using different tools and methods for their classification (Constantinides, Fountain 2008; Winer 2009; LeRouge et al. 2014). In this context, a communication channel is understood as a means by which a company conveys a message and reaches potential customers (Chaffey 2011). It should be noted that existing classifications lack a comprehensive approach that includes the set of online marketing communication tools (OMCT) and their relationship with the customer lifecycle in the virtual space. To identify the elements of a multi-channel access environment, a study was conducted to assess the intensity of OMCT examination in the literature. Based on the findings, the primary tools for delivering messages in the virtual space were identified: internet search engines, email, wikis, blogs, informational websites, e-catalogs, media portals, e-commerce websites, social networks, instant messaging, commenting, "contact us" forms, forums, and FAQs. Unfortunately, the analysis did not provide a classification of these tools, making it appropriate to explore the principles of OMCT taxonomy presented in scientific literature.

Particularly noteworthy is the classification by D. Chaffey and P. R. Smith (2012), which suggests categorizing OMCT based on purpose, nature, and ownership:

- Paid media, as tools purchased to attract users, paying for visitors, reach, and conversions;

- Earned media, publicity gained through investments in public relations targeting opinion leaders to enhance brand awareness;

- Owned media, company-owned tools, such as websites.

However, it is important to emphasize that this classification's relevance from the company's perspective is limited, as ownership has a minor influence on consumer preferences. E. Anderl et al. (2016) propose dividing OMCT into tools initiated by the user and tools initiated by the company. Company-initiated channels can be used at all stages of the customer lifecycle, while user-initiated channels are analyzed from the second stage (information search).

K. Elkelä (2012) categorizes marketing communication tools into three groups based on channel lifecycle phases (new and traditional electronic, and old paper-based) and presents them from the perspective of information search and reception. The possibility of anonymous information search and two corresponding modes of information reception—anonymous and personalized—are highlighted. The new e-channels group includes internet search, news portals, social media, instant messaging, and email. Traditional electronic media comprises radio, television, and phone calls.

Existing classification methods lack the inclusion of user empowerment, a comprehensive approach to OMCT, and the distinction of tools relevant to the current period. Therefore, a classification of OMCT was developed, allowing the tools to be categorized based on their current usage patterns from the user's perspective (Figure 1).

First, users utilize different methods to access OMCT—some tools are accessible via browsers, while others require additional software installation. Thus, tools can be classified as browser-based or desktop-based (requiring additional software installation, such as Skype or Viber). Some tools can be accessed through a browser and also have a desktop version (e.g., email). Further, OMCT can be categorized based on how users access them—starting with a search engine as the initial step of the customer lifecycle when seeking information. From the search results, users move to websites, which may be of different types (wikis, blogs, etc.). Then, users interact with website-related elements, such as forums, comments, and FAQs. To transmit or receive information, different formats—audio, video, text, or mixed—can be used depending on the platform's capabilities and user intentions.

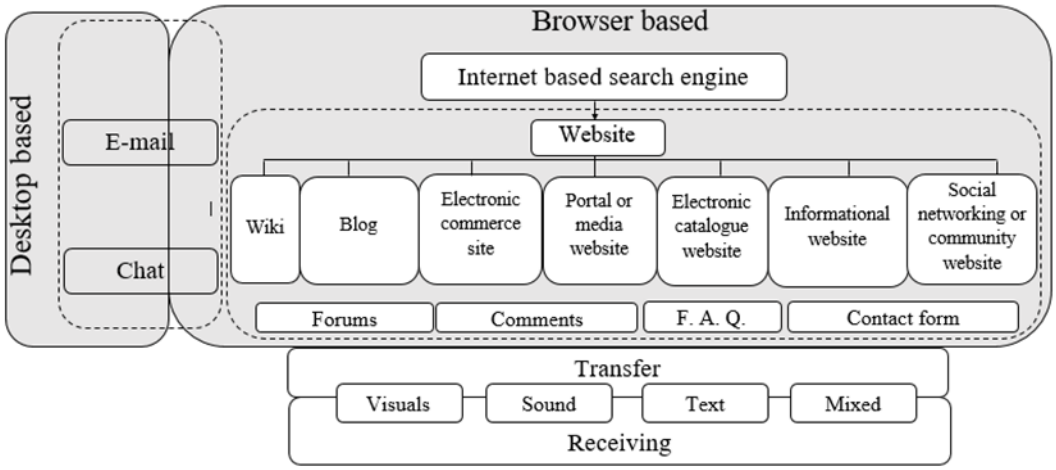

Figure 1: Classification of internet marketing communication tools

To gain a deeper understanding of the online marketing communication (OMC) system, it is essential to further analyze the functionality of OMC tools through the stages of virtual space development. The development of virtual space (WWW – World Wide Web) is typically analyzed through the characteristics of social dynamics and informational processes within the internet context, distinguishing key stages: Web 1.0, 2.0, 3.0, 4.0, and beyond (Constantinides 2009; Aghaei et al. 2012; Barassi, Treré 2012). Virtual space, as a socio-technological system, provides opportunities for user recognition, communication, and

collaboration (Hofkirchner 2002; Fuchs, Hofkirchner 2005; Barassi, Treré 2012). It is defined as a technological-social system through which users interact within the network (Finnemann 2010; Shivalingaiah, Naik 2008; Barassi, Treré 2012).

V. Davidavičienė et al. (2014), while analyzing the expanding capabilities of virtual space, linked its key development stages with the dominant OMC tools of the time. Many researchers assert that virtual space can be defined through its development stages—Web 1.0, 2.0, 3.0, and so on (Constantinides, Fountain 2008; Shivalingaiah, Naik 2008; Silva et al. 2008; Barassi, Treré 2012). However, there are opposing views, suggesting that such classifications do not reflect the technological transformations of virtual space (Finnemann 2010). Instead, these stages are seen as concepts describing a sequence of cultural changes resulting from complex alliances of social, technological, and commercial goals (Everitt, Mills 2009).

The problem with defining web versions (1.0, 2.0, etc.) is that the linear and evolutionary interpretation of virtual space development can be misunderstood as one form of virtual space replacing another. In reality, tools belonging to different web technologies do not replace each other (Fuchs et al. 2010). Instead, virtual space should be understood as a socio-technological system where tools and stages of different applications coexist (Barassi, Treré 2012).

The differences between stages of virtual space development are analyzed through technological (functionality and user actions), structural (purpose and layout), and social (friends and community groups) aspects (Cormode, Krishnamurthy 2008; Finnemann 2010). Based on the analysis of the relationship between the development of virtual space technologies and online marketing communication tools (Chisholm et al. 2001; Miller 2005; Silva et al. 2008; Cormode, Krishnamurthy 2008; Handsfield et al. 2009; Hendler 2009; Andriole 2010; Finnemann 2010; Aghaei et al. 2012; Ribeiro Soriano et al. 2012; Algosaibi et al. 2015; Mavridis, Symeonidis 2015), a web technology classifier was developed. This classifier enables a deeper analysis of OMC tools and identifies the key tools for further research. The classifier categorizes tools based on the technological foundation of virtual space they use (Web 1.0, Web 2.0, and Web 3.0 categories).

The analysis of virtual space development revealed the main directions of its expansion, the technological foundation of virtual space, and the OMC tools that emerged and became widely adopted during each stage. Based on the theoretical analysis results, an OMC tool classifier was developed, which is applicable for further analysis of online marketing communication tools.

3. Online marketing communication tools based on Web 1.0 technologies

The Web 1.0 technological level is characterized by the method of displaying static information. This era of network technology, also referred to as the static web (Chen, Lin 2015), is defined by read-only and informational network characteristics. The following online marketing communication tools (OMCT) are distinguished: informational content websites, frequently asked questions (FAQs), electronic catalogs, and contact forms (Cormode, Krishnamurthy 2008; Shivalingaiah, Naik 2008; Handsfield et al. 2009; Chen, Lin 2015).

Informational Content Website (ICW). From a historical perspective, Web 1.0 was characterized by a limited number of content creators and a significantly larger audience of content readers. ICWs, as systems with limited functionality, feature cross-references and hypertext documents accessible via the internet (Shivalingaiah, Naik 2008). They allow users to search for and read information but are marked by very low levels of user interaction and content contribution. The main purpose of ICWs during this phase of the web was to provide businesses with a tool to present information about their activities to users. As website functionality increased, other types of websites emerged (Figure 2), differing in element structure and the level of user activity they enable.

Email. From the perspective of interactive marketing, the most attractive tools are those that enable businesses to provide information to users with their permission. In the context of email, newsletters are especially relevant, as they serve as a tool for sharing information about products, services, or company activities with users who have given their consent by providing their email addresses (Brownlow 2012; Ellis-Chadwick, Doherty 2012). Depending on the information recipient and the purpose of the message, various elements are used to achieve communication goals. The main elements of email newsletters (Ellis-Chadwick, Doherty 2012; Brownlow 2012) include: purpose of the message, subject line, email length, frequency, timing of sending, illustrations, sender, message content, branding, links, interactive options, animations, and personalization.

Frequently Asked Questions (FAQ). FAQs are described as a mechanism for distributing information, aimed at individuals with a higher level of interest rather than those with short-term curiosity (Burke et al.

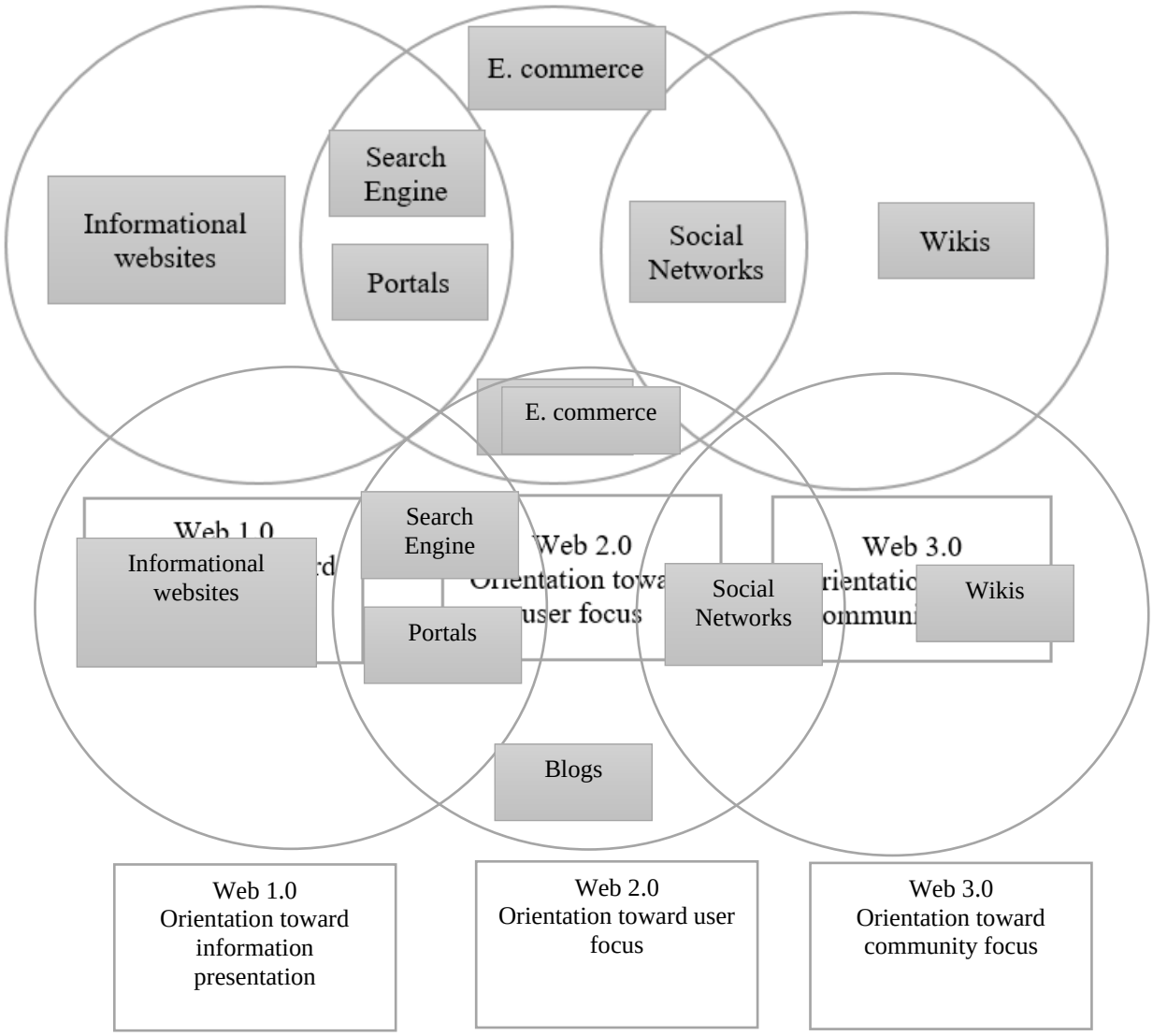

Figure 2: Classification of internet websites in accordance with web technologies (compiled by the author)

Electronic Catalogs (EC). Electronic catalogs are a type of website designed to provide users with information about products or services, as well as contact information for potential clients (Reza Kiani 1998). The advantages of these OMC tools include:

- Flexibility in updating information,

- Simplicity of the system used,

- The ability to apply a categorization system based on user needs,

- The ability to segment users and present different products (Reza Kiani 1998).

With a more advanced information system, integration with a company's inventory management system and real-time product updates in the catalog become possible. The key elements of EC include:

- Item (product, service, or informational product),

- Presentation of related information, such as name, visual representation, price (regular or discounted), textual information, video material, comparison functionality, and a link to the manufacturer's website (Aladwani 2006; Alba et al. 1997; Alzola et al. 2010).

Search functionality in catalogs helps users quickly and easily find the products they need, which is especially important when dealing with a large number of items. User involvement in the purchasing process in the virtual space depends on how well a company manages e-commerce risks (Dai et al. 2014), which are identified as product (or operational), financial, and privacy risks. The function of an electronic catalog is to help reduce product (or operational) risk, defined as the discrepancy between consumer expectations and reality (Peter, Tarpey 1975). The highest product risk is associated with certain categories of products that users cannot physically access or test in a virtual environment (Alreck and Settle 2002; Garbarino, Strahilevitz 2004).

Contact Form (CF). The contact form is a website element that allows users to communicate with a company (Ziff 2016). Its components include fields for entering the user's name, address, email, and comment text. CF is analyzed from the perspective of its potential to generate leads (Davidavičienė et al. 2014) and its technical capabilities in facilitating communication between users and businesses (Chaffey 2016). Key features of CF include:

- Visual design,

- Usability,

- A clearly defined lighter background for information input fields,

- Simplicity of language,

- Optional additional elements such as an object rating system and microtext (examples of input information provided in a lighter color).

Web 1.0 technologies are focused on static information and its presentation, characterized by read-only capabilities, and are therefore classified as part of the informational network. The purpose of using these tools is to present information and support basic e-commerce functions, with one-way communication being predominant.

4. Online Marketing Communication Tools Based on Web 2.0 Technologies

Web 2.0 technology focuses on user orientation, the implementation of internet functions (information sharing, interaction opportunities, uploading and sharing data, user experience dissemination and influence, discussions, multimedia), and the emergence of new forms (social media, e-commerce platforms). Web 2.0 OMCT represents a real-time face-to-face communication analogue (Chen, Lin 2015), also known as a social network. Compared to Web 1.0 technology, which focused on a hypertext network, Web 2.0 is described as a participation architecture (O'Reilly 2005; Barassi, Treré 2012). Academic interest lies in aspects of interaction and information sharing via internet platforms, as well as in shifting content

generation capabilities from businesses and organizations to individual users, citizens, and society. This shift fundamentally changes user-business relationships, characterized by transparency, economic efficiency, and openness (Chen, Lin 2015; Chaffey 2016). Key OMCT in this category include: blogs, internet search engines, media portals, comments, forums, instant messaging, social networks, e-commerce websites.

Blogs (or E-blogs). Blogs are defined as automatically formatted virtual news pages, often designated as specialized sections of a website or general-purpose sites. Blogs feature posts where creators express their views on specific events or phenomena (Kumar et al. 2004; Adar et al. 2004; Rogoznyj 2006; Chen, Lin 2015). Blog elements in center include posts displayed in reverse chronological order, user profile information, and an archive organized by date or topic (Adar et al. 2004; Kumar et al. 2004; Shivalingaiah, Naik 2008; Winer 2009). Blog advantages (Chen, Lin 2015): direct communication between a company and its customers; the ability to bring together like-minded individuals into groups; participation in shaping consumer behavior and perceptions; srawing public attention to specific issues.

OMCT is designed to establish a dialogue on a specific topic, with the creator encouraging discussion through comments (Winer 2009). Key elements include the title, the creator's (blogger's) profile containing personal information such as age, geographical location, name, date of birth, interests, friends, and other related bloggers, posts detailing the date and time, title, and main content (textual information, images, videos), a post archive, and content co-creation elements, such as comments and poll features.

Internet Search Engine (ISE). The volume of information in the virtual space is constantly growing, requiring a system to sort and present information based on specific query characteristics to ensure the value of electronic information sources (Mettrop, Nieuwenhuysen 2001; Bhargava, Feng 2002; Wolfram 2013). An ISE is defined as a tool that allows internet users to quickly locate information according to their specific interests (Wolfram 2013). The use of ISE involves two main processes: entering keywords and analyzing results (Mettrop, Nieuwenhuysen 2001; Wolfram 2013). Users input keywords into a general ISE and receive results, which can be categorized as either organic (selected and ranked by the search engine algorithm) or sponsored (paid advertisements or search engine promotions) (Ghose, Yang 2009; Anderl et al. 2015). Key elements of these two processes include:

Stage 1 (Input): Data input field, keywords (quantity, language used—native or foreign), and search type (web, image, video, etc.).

Stage 2 (Analysis): Link selection motivations, URL recognition, link title, summary text relevance to keywords, image presentation, link placement in organic or sponsored streams, link ranking (e.g., star ratings or other methods), and keyword sequence alignment in the text.

A list of key elements for this OMCT has been compiled (see Table 1).

Table 1: List of elements for Internet Search Engine (source: compiled by author)

Elements	Element Characteristics	Customer Behaviour Characteristics
1	2	3
Number of Keywords Used	1–3	Low engagement, generic product search
	4–6	Medium engagement
	7 or more	High engagement, specific product or brand search
Primary Search Language Used	Native	Greater need for security
	Foreign	Lower need for security
Motivations for Link Selection	URL recognition	Brand characteristic
	Link title	Horizontal information processing
	Text in summary matching keywords	Horizontal information processing
	Image presentation	Orientation towards visual information presentation

	Top position in paid ads	Horizontal information processing
	Top position in organic search	Selective result selection
	Link Ranking	Higher need for security
	URL Extension Matching Keywords	Horizontal information processing
	Keyword Order Alignment in Text	Horizontal information processing

This table provides an insightful breakdown of customer behavior characteristics in relation to search engine elements and their associated features. It highlights how the number of keywords used reflects the user's level of engagement, ranging from low involvement for generic searches to high involvement for specific product or brand queries. The table also emphasizes the importance of primary search language, with native language searches correlating to a higher need for security. Additionally, the motivations for link selection underscore various factors, such as URL recognition and link titles, which guide horizontal information processing. Visual elements and organic search ranking also play key roles, indicating preferences for visual content and selective result filtering. Overall, the table effectively connects technical elements of search engines with user behavior patterns.

Media Portals. Early literature (Chyi 2006; Lee, Leung 2006) suggests that media portals are a continuation of traditional media and that both types of media would coexist. However, more recent studies argue that media portals are replacing traditional media and are poised to become the dominant source in the news market (Flavian, Gurrea 2007; Ha, Fang 2012). D. Chaffey and P. R. Smith (2012) describe media portals as tools for intermediaries to provide information and news on various topics. Media portals can be defined as uniquely purposed websites with a specific design that aggregate information from multiple sources and present it uniformly to all users.

Comments. Comments are tools designed to rate products or services on a website based on user-generated content (Winer 2009). They are used to gather information about a product, assess purchase feasibility, and provide feedback after using the product or service. Comments can be classified into anonymous (not requiring registration), pseudonymous (selected reviews), registered users (not necessarily identified by name), and real users (reviews linked to social media profiles). Additionally, comments may be categorized based on the user type: anonymous, unknown users, or familiar users such as friends, colleagues, or relatives.

Forums. Virtual forums are defined as one of the fundamental tools of Web 2.0 technology, enabling users to share their opinions and actively participate in discussions (Baig, Wagh 2016). Forums are analyzed based on user engagement intensity (Baig, Wagh 2016), user-generated content (Wei et al. 2016), and as a tool for education processes (Wei, Xia, et al. 2016). Forums can function as elements within a website (Boon et al. 2015) or as standalone platforms. Participation can be anonymous or limited to registered users. Forums allow users to share text-based information, photos, audio, or mixed content. They rely on specialized language, electronic behavior codes, and methods for regulating and controlling community interactions.

Instant Messaging. Instant messaging (IM) is typically examined in the context of informal communication and media theory (Nardi et al. 2000; Church, de Oliveira 2013). Informal communication through IM fosters collaboration between parties, but only when users are inclined to communicate through this channel. IM includes unexpected, short, and highly informative messages (Kraut et al. 1990; Whittaker 1995; Flepp et al. 2017). Key elements of IM as OMCT include the nature and characteristics of conversations, IM functions, task support within its usage context, frequency of use, and goals.

Social Media Networks. Social media networks empower users by enabling them to control the dialogue with vendors. Users choose the channel, timing, and content (Killian, McManus 2015). Social networks allow users to create virtual profiles that include personal and socially significant information through photos, music, and blogs (Barker 2012). Researchers (Trusov et al. 2010; Killian, McManus 2015) and practitioners (Smith 2016; Greenwood et al. 2016; Pew Research Center 2017) widely analyze user

demographics, preferences for social networks, engagement motivations in company activities, and other behavioral traits in social media networks. Beyond demographics, selecting social networks for communication requires understanding the type of content shared and how its use aligns with a company's strategy (Lee 2014). Content types—textual, audio, video, and visual—play a crucial role (Cormode, Krishnamurthy 2008). Social media platforms can also be classified by purpose: platforms for building long-term relationships or those for sharing small amounts of information or entertainment (Killian et al. 2015). Platforms may also be categorized by content type: image-based networks, video-based networks, business-oriented networks, mixed-purpose networks, niche networks, location-based networks, and those supporting search and authorship.

E-Commerce Websites. E-commerce websites are defined as platforms for the exchange of electronic information, products, services, and payments (Reza Kiani 1998). D. Chaffey and P. R. Smith (2012) describe these websites as business support tools that provide customers with essential information about a company's products or services. These platforms include elements that enhance the purchase process, such as security guarantees, after-sales service options, proof of physical presence (address), quality certificates, return policies, and payment options upon receipt. Product features include detailed information (text, images, audio, video, mixed formats), delivery costs, and inventory availability. Functional elements include various payment methods, registration options, visible shopping carts, product comparisons, navigation tools (top, side, bottom menus), and contact elements (comments, live chat, contact forms, phone numbers, mobile solutions).

The analysis of Web 2.0 tools highlights their user-centric approach, promoting active engagement in virtual space activities and dialogues. These tools facilitate a user-to-user communication model, requiring regulation and self-regulation methods, as well as specific community language knowledge.

5. Online Marketing Communication Tools Based on Web 3.0 Technologies

The foundation of Web 3.0 technology is a new virtual environment that integrates user-generated content to create new value (Shivalingaiah, Naik 2008; Shrivastava et al. 2011; Barassi, Treré 2012; Silva et al. 2008; Hendler 2009; Nath et al. 2014) and relies on user cooperation (Shivalingaiah, Naik 2008; Barassi, Treré 2012; Nath et al. 2014). The Web 3.0 concept is often associated with the semantic web (Floridi 2009; Barassi, Treré 2012; Nath et al. 2014). Floridi (2009) notes that the predicted capabilities of Web 3.0 cannot be fully realized and established in society due to technological and social barriers.

This stage's technology includes solutions developed by business and technology engineers that encourage crowd cooperation and function as databases managing online data (Harris 2008; Watson 2009; Barassi, Treré 2012). New models are employed, which operate based on elements other than keyword matching (the method used by Web 2.0 search engines), allowing the extraction of concept context and the creation of new information (Wikipedia principle) (Harris 2008; Barassi, Treré 2012).

Barassi and Treré (2012) associate Web 3.0 technology not only with wikis but also with customer relationship management (CRM) systems. These systems act as databases integrating user-provided data, company-held data, and statistics, thereby establishing a new informational foundation for developing, strengthening, and enhancing a company's marketing strategy.

Shivalingaiah and Naik (2008) note that in Web 3.0, the concept of a single-owner web page disappears, data no longer belongs to a single owner, and it is shared across platforms. Services created within this framework fundamentally redefine the possibilities of the virtual space. They identify key tools such as 3D portals, avatar-based representation, wikis, multi-user environments, integrated gaming platforms, and media streams across virtual and traditional spaces. Nath et al. (2014) describe Web 3.0 tools as systems that allow users to perform more comprehensive information searches beyond simple terms. The structured data can be used not only for reading processes but also for automated technologies. They also emphasize the 3D web, where systems enable users to exist in a virtual world as avatars—meeting others,

participating in individual or group activities, all while being disconnected from the real world. Furthermore, they define a media-oriented network that uses video, audio, and visual information as input for search engine processes and provides results in the same format as the input.

Wikis. The term originates from the Hawaiian word "wiki wiki," meaning "quickly," reflecting the purpose of this OMCT—to rapidly publish information in the virtual space, including text, images, hyperlinks, and to edit existing content quickly. Wikis also allow users to revert to previous page versions through the page history feature (Hasan, Pfaff 2006; Wheeler et al. 2008). A wiki is defined as an internet-based solution for collaborative knowledge management. Wiki systems are described as a network of interlinked web pages based on HTML technology, with cross-references between internal pages. Each page can be edited while preserving the edit history (Hasan, Pfaff 2006). Wikis are also considered an example of dialogic technology, where knowledge creation and preservation are ensured through collaborative writing, motivated by altruistic or personal reasons (Majchrzak et al. 2006).

In summary, Web 3.0 technologies focus on community concentration and user-generated content. Data no longer has a single owner, and value is created through knowledge bases built by communities. Key tools include 3D portals, avatar-based representations, wikis, multi-user environments, integrated gaming platforms, and the integration of media streams in virtual and traditional spaces. However, in the development of an online marketing communication system, only the wiki tool will be adopted from Web 3.0 technologies. Other tools are excluded due to their lack of full realization and establishment in society, which is attributed to technological and social barriers.

6. Conclusions

The analysis of theoretical foundations highlights the role of online marketing communication tools (OMCT) as essential channels for businesses to convey messages and engage with potential customers. Existing classifications, such as those proposed by Chaffey and Smith, categorize OMCT based on ownership (paid, earned, owned) or initiation (user or company-initiated). However, these frameworks lack a comprehensive approach connecting tools to customer lifecycle stages. The proposed classification framework addresses this gap by incorporating user behavior and interaction patterns, enabling a more effective categorization of tools.

The evolution of OMCT reflects significant advancements in web technologies. Web 1.0 tools, including informational websites, FAQs, electronic catalogs, and contact forms, were primarily static, supporting basic communication with minimal user interaction. Web 2.0 introduced a user-centric focus with interactive functionalities such as blogs, forums, social networks, and e-commerce platforms. These tools emphasized user-generated content, collaboration, and real-time engagement, marking a shift towards participation-based communication models. Web 3.0 technologies have further advanced this evolution by enabling semantic and collaborative environments. Tools like wikis, 3D portals, and CRM systems facilitate advanced data sharing, user collaboration, and context-aware content creation. However, the adoption of Web 3.0 tools remains limited due to technological and societal barriers, highlighting the gradual progression of digital communication capabilities.

The proposed classification framework provides practical implications for enhancing business communication strategies. By aligning OMCT with customer lifecycle stages, it ensures targeted and effective communication throughout the buyer's journey. The framework distinguishes between browser-based and desktop-based tools, offering flexibility in implementation and optimizing accessibility. Integrating Web 3.0 technologies fosters personalized and collaborative communication, enhancing user engagement and loyalty. Furthermore, the emphasis on user-initiated tools enables deeper customer interactions and valuable feedback, while supporting efficient resource allocation and risk management. Overall, this systematic approach equips businesses to adapt to technological advancements, align communication strategies with evolving user expectations, and strengthen their position in the digital marketplace.

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