
THE ROLE OF DIGITAL MEDIA IN COLLECTING INFORMATION ON THE PRODUCTS OF WOOD INDUSTRY COMPANIES AS IMPORTANT TOOL TOWARDS CIRCULAR ECONOMY PRINCIPLES

Assoc. Prof. Andreja Pirc Barčić, PhD, Petar Borna Kralj, Petar Čurić

University of Zagreb, Croatia

Abstract. The success of the company, among other things, depends on proper access to the market, the ability to collect information about customers, competitors and markets. In order to increase sales and reputation, companies need to know how to attract customers, and digital media today play a significant role in this. Furthermore, digital media have a significant, broad and complex impact on society and culture, therefore the application of digital media is important in improving the company's operations. Today, companies using digital media approach their advertising strategies in a different, simpler and better way. The aim of this paper is to investigate the role of digital media in gathering information about the products of companies in the field of wood processing and furniture production as important tool towards circular economy principles

Keywords: wood industry; digital media; information; circular economy

1. INTRODUCTION

The global wood products market is constantly changing and developing. We can state that it is in the phase of creative destruction, i.e. it is in an era characterized on the one hand by a large decline of already established products and businesses, and on the other by the emergence of new products and businesses. The term creative destruction was first used by Joseph Schumpeter, back in 1940, describing the evolution of the economy in which a continuous process serves to maintain the vitality of the global market. Certain sectors and activities are weakly and slowly disappearing, while new ones are emerging. When we look at the changes in the global market of wood products, we can see a big change since the 20th century (Hetemäki and Hurmekoski 2016). Since we are currently in the digital age, where information is easily available, wood manufacturers should use them to advertise their product. Producers should provide as much information as possible about their company or product to make it easier to get a new customer, because how can they expect to sell and get new customers if no one knows about their company, service or product. This is exactly the reason that encourages every entrepreneur or company to advertise on the Internet. As information about a wood product is important for a potential customer, it is also important for companies (competitors) that produce the same or similar products (from wood). In order to approach the market properly, companies must be well acquainted with customers, as well as with markets and

competitors. In this, digital media play an increasingly important role than it did in the 20th century, therefore today most producers increasingly use digital tools and social networks. Furthermore, digital media have a significant, broad and complex impact on society and culture, therefore the application of digital media is important in improving the company's operations. Producers should provide as much information as possible about their company and its products in order to make it easier to get a new customer. This is the reason that encourages every company to use a digital media in its promotional activities. Today, companies using digital media approach their advertising strategies in a different, simpler and better way.

Scientists post that from the perspective of the circular economy principles the application of digital media and digital-platform usage is positively linked to circular economy principles implementation and competitive performance of the company. In that context, the aim of this paper is to investigate the role of digital media in gathering information about the products of companies in the field of wood processing and furniture production as important tool towards circular economy principles.

2. THERETICAL BACKGROUND

Marketing is not just the act of selling and advertising. Sales and advertising represent only two main functions of marketing, which are often not even the most important. Today, marketing has a new meaning, which is the satisfaction of consumer needs. In order to sell a product, we must first produce it. In contrast, marketing begins long before the product is produced. In marketing, there are activities that managers undertake in order to assess needs, measure their scope and intensity, and determine whether they have earning potential. Marketing continues throughout the product life cycle, trying to find new customers and retain existing ones by improving product appeal and quality based on knowledge that provides sales results and repeat order management (Kotler 2006). Peter Drucker, a leading scientist in the field of marketing explained the role of marketing as follows - the goal of marketing is to make sales redundant. Consumers are offered a wide range of products and services that could meet their specific needs. In order to choose correctly among so many products, consumers must make purchasing decisions based on their experience of the value of different products. The concept of value is most important to the customer. To him, value is the difference between the value he gets for owning and using the product and the cost of acquiring the product. Customer satisfaction depends on the perceived quality of the product in terms of providing value to the customer's expectations. If the quality of the product does not meet expectations, the customer is dissatisfied. If the quality of the product meets expectations, the customer is delighted. Top marketing companies do everything possible to keep their clients happy. They know that satisfied customers buy again and tell others about their good experience with the product. The key is to match customer expectations with company quality (Kotler 2006).

From the beginning of the 21st century to today, companies have gone through a lot of changes in a short period thanks to the development of the Internet. Due to the invention of the Internet, digital marketing is one of the most common forms of company business development. Digital marketing is constantly changing

and improving. Digital marketing is a set of several marketing processes that use all available digital channels to promote a company or service. It is more effective than traditional marketing. It includes all marketing activities that use electronic devices or the Internet. Through digital marketing, customers can get information about a product, product or service more easily and quickly. Digital marketing provides the manufacturer with better monitoring of its performance. Promotional activities are cheaper than traditional marketing. Digital marketing comes in many forms through different channels. Some of these channels that make it up are social networks, websites, e-mail, mobile marketing. Today's consumers rely heavily on digital means to research products before making a final purchase decision. Approximately 50% of consumers start their inquiries on search engines, and about 30% of them turn to research directly on the pages of brands specialized in what they are interested in. Types of digital marketing are: online advertising, advertising through social networks, and content marketing.

E-business includes the use of electronic platforms - intranets, extranets and the Internet in running the company's business. The Internet and other technologies now help companies to do business faster, more accurately, and across much wider time and space boundaries. Numerous companies have opened websites where they advertise and provide information about their products and services. They also created an intranet network that enables employees to communicate with each other and access information available on the company's computers. They have also established an extranet network to exchange information, order, perform transactions and payments with their suppliers and distributors.

Electronic commerce is much more focused than e-business. E-business includes all electronic data exchange, within or between companies and customers. In contrast, e-commerce involves selling and buying processes supported by electronic means, primarily the Internet. E-markets are more "market spaces" than real "markets". Sellers use e-markets to offer their products and services on the Internet. Customers use them to get information, discover what they want and place their orders using a credit card or other means of electronic payment. E-commerce includes e-marketing and e-purchasing (e-procurement).

The term "social networking" refers to computer and Internet-based technology that facilitates the exchange of thoughts, ideas, and information through virtual networks and communities. Social media enables users to communicate quickly over the Internet. In 2022, the share of EU households with internet access has risen to 93 %, up from 72 % in 2011, while 68 % of individuals in the EU ordered or bought goods or services over the internet for private use in 2022 - up from 54 % in 2017 (Eurostat 2023).

Users can share personal information, documents, videos or photos. Users are enabled to use social networks via computer, tablet or mobile phone. In the beginning, more social media served as a way to interact with friends and family. Companies later started using them as well because they saw their advantage and wanted to use it for better communication with customers. Currently, 3.8 billion people in the world use digital networks (Global Social Media Stats 2021). According to Facebook "targeting" data, a total of 1.9 million Croats use Facebook. Social media has become an indispensable tool for companies. The platform enables them to connect with

customers and interact with them more easily. I can follow trends more easily and promote more cheaply, collect information about clients as well as about my competitors. The most popular social networks at the moment are: Facebook (2.74 billion users), YouTube (2.29 billion users), WhatsApp (2 billion users), Instagram (1.22 billion users), and WeChat (1.20 billion users).

2.1 The role of digital media in wood industry companies and wood product buyers

In the United States of America (USA) in 2017, at the Department of Forestry and Natural Resources, West Virginia University, research was conducted with the aim of gathering information on the use of social media as a marketing tool in the promotion of the products of wood industry companies. The results of the research showed how respondents use social media to collect information about natural resources and related activities. The top three natural resource activities for which respondents used social media to gather information were natural resource recreation, natural resource disaster preparedness, and natural resource hobbies. Data collection was carried out via electronic mail. Out of 928 respondents, 58% of them stated that they gather through digital media before making a decision to buy wood products. The three most used media for collecting data are Facebook, YouTube and Twitter. Respondents also cited the availability of information on the Internet and prior knowledge or awareness of the brand as important factors that influenced their decision to purchase the requested product.

Šujanová et al. (2020) conducted a study whose aim was to analyze and compare the published content of companies belonging to the automotive industry and the furniture industry on social networks (Youtube and Twitter). were Calligaris, Nobia, Hsl, Howdens, and Molteni&C. The results showed that there is a big difference in the use of social networks between the two research industries. The number of subscribers on YouTube channels of companies from the automotive industry ranged from 10,000 to 100,000, while in the furniture industry, the number was between 10 and 1,000 subscribers. Twitter showed similar results, where all manufacturers from the automotive industry had a Twitter account, and only three manufacturers from the wood industry had a Twitter account. Such a difference in the use of social networks between the selected car and furniture manufacturers was not expected, given that these are the manufacturers that achieved the best sales in 2018. The authors of the research conclude that the automotive industry makes much more use of social media for the purpose of innovations focused on customer needs and wishes. Manufacturers of wooden furniture have not used the potential of social media and its influence on consumer behavior (Šujanova et al. 2020).

2.2. Circular economy and wood products

The circular economy is about shifting away from the linear model of inputs and outputs. It's about extracting raw resources with the entire life cycle in mind. It's thinking in a more regenerative way about how you can build products and assets so they last longer, are more durable and repairable over time. Timber offers some significant advantages in the circular economy. Wood products have an environmental benefit from being able to sequester carbon. Furthermore, mass timber can be a more sustainable alternative for some of the steel and concrete that goes into

our buildings. Timber building systems can be disassembled and refurbished with relative ease or used in different ways. Their value can be re-captured at the end of life.

With the growing number of regulations, strategies and programs addressing climate change, the demand for forest-based products is expected to rise as they are considered sustainable, renewable and good contenders to replace many fossil-fuel-based products (Majumdar et al. 2017; Smyth et al. 2020.) When it comes to a sustainable built environment, material choices matter. Wood is a natural, renewable, and sustainable material for building. Maximizing wood use in both residential and commercial construction could remove an estimated 21 million tons of CO₂ from the atmosphere annually—equal to taking 4.4 million cars off the road (Think Wood 2023). Because 80% of a building's embodied carbon comes from the structural materials used to build it, building material specification is impactful. Wood performs better than concrete and steel when it comes to both its carbon footprint and air and water pollution. Its low-carbon benefits, and other sustainability advantages, including certified wood, recycled/reused materials, local sourcing of materials, waste minimization, and indoor air quality, make wood one of the best tools in the toolkit to reach net-zero carbon for buildings.

3. MATERIALS AND METHODS

The sample for the research consisted of companies that, according to their main activity, and in accordance with the National Classification of Activities (NKD 2007), are registered in the area C 31 – Furniture production. The criterion for selecting companies for further analysis was the number of employees. 30 companies with the largest number of employees were selected and research was conducted from April to May, 2022.

When analyzing the selected websites, the criteria used to determine the quality of website design according to Edkent Media (2018) and Straight North (2014). Compliance, aesthetics and style, usefulness of content, usefulness of the site and S.E.O will be observed .the degree of use of social media such as Facebook, Twitter and Youtube. The availability of the E-commerce will be checked, that is, what information the consumer can find on the websites of the selected companies. In addition to reviewing how websites are advertised and how easy they make the user experience, the overall impression of the website will also be looked at. The collected information will be systematized using Excel, where the '+' sign will indicate that the observed characteristic is satisfied.

The criteria for determining the quality of website design according to Edkent Media (2018) and Straight North (2014) are:

1. compliance with the strategy - Even the best and simplest site is not successful if it does not follow the company's strategy and does not meet its marketing needs. The questions that the company should ask are: Do new visitors get clear information about who we are and what we offer when they come to our site? Does the design of our site direct visitors to what they want to do on the site? To which category of activity does our company belong and is it clear on the website? What is the purpose of our website, and does our design meet that purpose? Who is the target audience and does the design take this audience into account?

2. aesthetics and style - The questions a company should ask itself about the aesthetics and style of a website are: Does the style of the site match the brand in terms of colors, feel/feel, graphics, etc.? Is the style consistent throughout the website? Will the style suit the target audience? What impression does the site leave on visitors? Usefulness and readability of the content

3. usefulness and readability. Readability is relevant because if visitors to your website cannot recognize useful content, either because the font is too small, illegible, in too little contrast with the background, the message will not be conveyed to the user. The usefulness of the content is also important, because if the content is not relevant to the visitor, we will definitely lose it. The questions that the company should ask themselves are: Are the selected fonts legible? Is there sufficient contrast between the background colors and the font colors? Is the text big enough? Will the content be relevant to the site visitor? Is the content both concise and useful? One potential way we can evaluate the simplicity and readability of the content in terms of the text itself is the so-called Flesch-Kincaid readability scale.

$$0.39 \left(\frac{\text{total words}}{\text{total sentences}} \right) + 11.8 \left(\frac{\text{total syllables}}{\text{total words}} \right) - 15.59$$

The higher the value, the more complicated the content (many words in a sentence and many syllables in a word). When preparing and creating the content of the website, it is in our interest that the content be as simple as possible, that is, it has as little value as possible on this scale.

4. usefulness of the site - After we have solved the problem of questions about the usefulness and readability of the content, it is important to ask the question: do the design and functionalities of the site make it easier to find the required content? For example, a visitor is looking for a specific model of a chest of drawers - will he be able to find exactly that model using the page navigation and the built-in search engine on the page? These are all questions related to the concept of user satisfaction (user experience, UX design): How long do pages take to load? How easy is it to find information? Is there a functional search engine? Do all the links on the page work? Does the site work on different web browsers (Chrome, Firefox, Safari, Edge, etc.)? Does the site work on mobile devices?

4.RESULTS AND DICUSSION

4.1. Usage of social media and quality of web pages of selected Croatian wood furniture manufacturers

According to the data from Figure 1, 70% of the researched companies (furniture manufacturers) use Facebook as a social network.

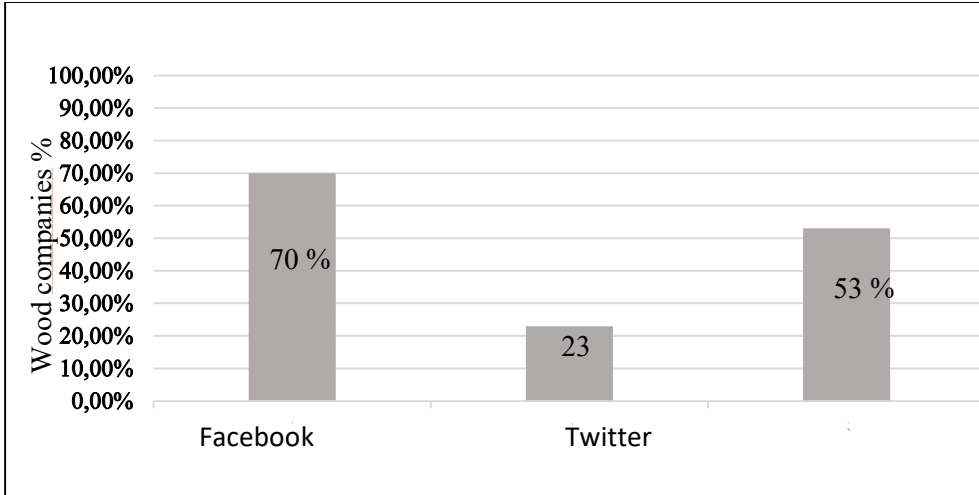


Figure 1. Usage of social media in business and promotion activities of selected Croatian wood furniture manufacturers

The least number of them use Twitter, which is expected considering that Twitter is not represented in Croatia like Facebook. More than 1/2 of furniture manufacturers have open YouTube channels which provides consumer with an insight into the appearance of manufacturing processes and help companies to advertise their products.

Although 70% of researched manufacturers use Facebook, only two manufacturers have more than 100,000 followers on Facebook, while the others have less than 30,000. From this, we can conclude that it is not enough to be present on the Facebook network, one must be active and expand the number of followers.

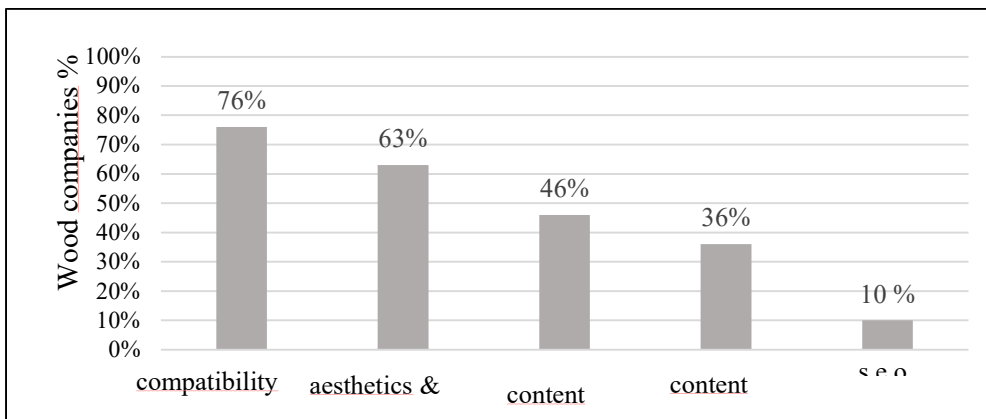


Figure 2. Quality of wood company web page of selected Croatian wood furniture manufacturers

Based on data shown in Figure 2, companies meet the criteria for a quality website following the Edkent Media (2018.) and Straight North (2014) principles. As seen, 76% of them use a website that offers clear information and is aimed at the

target audience. The appearance of most of the web pages is modern and it can be seen that certain manufacturers have invested a lot of effort. The biggest disadvantage of manufacturers is that their websites do not appear at the top of search engines. Even 90% of the manufacturers from our sample did not appear on the search engine.

By reviewing the display of the availability of information and services on the manufacturer's websites, it can be observed that most manufacturers provide the visitor with sufficient information about the product or service. Only 6 furniture manufacturers are offering their products online, which means that they use e-commerce in their sales activities. The lack of positive feedback from previous consumers can be observed with almost every manufacturer. Although websites are well made to present their product or service. Criteria such as e-commerce, review, possibility of registration and multilingualism are less represented. These criteria are important because they allow the manufacturer to connect with consumers and make their shopping experience even easier.

4.2. Qualitative analysis of the websites of the researched companies - selected companies

Company 1 is a Croatian company specialized in the production and sale of designer furniture. The style they strive to market through their furniture is also visible in the design of their website. The main page is characterized by minimalism and simplicity, and the content is organized in a unique way, in the form of icons and subcategories next to them, which is different from the already standard design in the form of tiles. The dominant color of the page is actually a spectrum of white-grey-black, which again shows the simplicity of the page, but depending on who interprets it, words like "uninteresting" or English may be mentioned. "bland", but since it fits the company's product strategy and style, the design decision can be justified. The fonts on the company's main page come in black and gray, and are generally of an acceptable size and legibility. Black on white is a traditional font design that can rarely go wrong. The content on the main page is relevant for the website visitor and is organized with double security, on the one hand through the main menu, i.e. the navigation bar, which contains categories related to products, projects, news, etc., and on the other hand through the mentioned icons on the main part pages. In addition to the two mentioned ways to get to relevant content, there is also a third, built-in search engine with a very modern design, which ultimately brings a very complete user experience. When we enter "designer furniture" or "furniture" as a query into the Google search engine, Company 1 is nowhere near the first page of results, whether we exclude or include paid ads. In this regard, it is definitely necessary to work on SEO processes.

Company 2 is a Croatian company-based specializing in the production and sale of beds and mattresses. It operates and has showrooms in 4 different countries (Croatia, Serbia, Bosnia and Herzegovina, North Macedonia). When you access to the company web page, it is immediately noticeable that a large percentage of the page is black, which somewhat takes away from the image that a company like this should have and gives a slightly outdated impression. The main menu is realized in the upper navigation bar, where pages and products are solidly organized. As mentioned, the dominant color of the page is black, which is somewhat acceptable

considering the logo and brand of the company, but for many, such a combination of background color and font color (white on black) will not suit. The content is also organized into gray-black tiles that only change color when the mouse is moved over them, which leaves a very passive and uninteresting impression. The fonts on the main page are a decent size, but as noted, together with the background, they don't make the best combination for readability. The content on the main page is relevant to the website visitor and is organized by interest categories – healthy sleep, products, company information and contact. The user experience of searching the site is slightly impaired by the lack of a built-in search engine, but as the company specializes primarily in only two (interrelated) product categories, beds and mattresses, this is not such a drawback and the main menu is sufficient for the needs of finding the desired product. When we enter "beds" or "furniture" as a query in the Google search engine, Company 2 is nowhere near the first page of results, but when we enter the company name, it is at the top of the first page of results. The analysis carried out indicates a moderate SEO quality, given that it beats the results associated with the female name because company got a name after her founder and owner who is a woman. Company 2 does not have paid ads on Google search engine, but it would be a big improvement in terms of SEO process.

Company 3 is a small Croatian company based in Istria, specializing in custom-made furniture. The modern and colorful design of their furniture can be seen in the design of their website. The content on the main page is organized in the form of modern-looking tiles, perhaps a bit too large, but in line with the company's strategy. When loading the home page, we are greeted by a full-screen video that ensures that such an impression is left on the site visitor, i.e., the potential customer. There is no dominant color on the pages, and there is no brand or company logo, but the design is oriented towards neutral and pleasant colors. The whole page has a very modern look, while the only objection is the unnecessary size of some tiles on the page, i.e. the lack of space for more useful content (visual or textual). The fonts on the main page have a traditional black and white design, which is impossible to find objectionable, but still, as mentioned for the tiles, the same applies to the font inside those tiles, which is unnecessarily large. All things considered, an oversized font is still less of a disadvantage than a too-small font, since it is certainly possible to read it easily. For the user experience, the standard remark of the absence of a built-in search engine does not really apply here, since the content is well enough organized using the main menu (navigation panel on the right), and there is actually nothing to search for, since it is about custom-made furniture. Everything you need to see is visible in the "Works" section. When we enter "custom furniture" or "furniture" as a query into the Google search engine, Company 3 is nowhere near the first page of results, whether we exclude or include paid ads. In this regard, it is definitely necessary to work on SEO processes.

5. CONCLUSIONS

Although the power of digital media is great, it has not yet fulfilled its potential in the wood furniture production sector. Companies should be more active in using digital media - as many people as possible will be familiar with the product or service. Most of analyzed companies have website and they use different social

media platforms for marketing and business activities. Social networks are a great tool to engage target consumers. Analyzing the websites of wood industry companies most of them are providing lots of information about the company itself and about its products. The proposal for improvement would go in the direction of SEO optimization. Due to the fact that they are visible in their circle of specialized queries on search engines, but they are not outside, it is unlikely that a random customer who does not even know they exist will come across them by chance.

The biggest drawback of the researched companies was weak interaction with potential customers. Among analyzed companies, most of them provide enough information about the product and services. Through good interaction with customers, it will be easier to recognize consumer needs. Wood industry companies must still work on this, if they want to keep up with the present trends!

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✉ **Assoc. Prof. Andreja Pirc Barčić, Ph.D.**
ORCID ID: 0000-0003-0127-3740
University of Zagreb
Faculty of Forestry and Wood Technology
Svetosimunska 23
HR-10000 Zagreb, Croatia
E-mail: apirc@sumfak.hr; apirc@sumfak.unizg.hr

✉ **Petar Borna Kralj, mag. ing. techn. lign.**
University of Zagreb
Faculty of Forestry and Wood Technology
Svetosimunska 23
HR-10000 Zagreb, Croatia
E-mail: petrica762@gmail.com

✉ **Petar Ćurić, Ph.D. Student**
University of Zagreb
Faculty of Forestry and Wood Technology
Svetosimunska 23
HR-10000 Zagreb, Croatia
E-mail: petar.curic@gmail.com