The Evolution of Decking Advertising in the Western U.S.: 1996—2006

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Abstract

The 10 years between 1996 and 2006 brought considerable change to the decking industry, including the introduction of many new products. Principal among these was wood plastic composite (WPC) decking. This study investigates how traditional wood decking companies in the western U.S. responded to competitive threats by way of communication, particularly through print advertising. Beyond ascertaining basic effects of a new product entry, there is interest in evaluating the sophistication and innovativeness of new product ads relative to traditional product ads in the context of a business-oriented periodical. Given that the forest products industry is dominated by business-to-business exchange, there is an assumption that the majority of industry-driven communications and marketing will be directed to other channel members. However, casual observation suggests that the combination of increased competition and maintaining a greater customer and competitor orientation has resulted in decking ads from companies that tend to be more market oriented. This observation is examined through the use of Porter's five forces model and the behavioral components of market orientation of businesses in the industry. Overall, this research seeks to identify changes over time in decking advertising by companies across deck products and product types with the entry of substitutes into the marketplace in physical terms (number and nature), as well as content (sophistication and innovativeness) of advertisements. Study results show that advertising in the western U.S. decking sector has changed with the entry of WPCs in terms of increases in number of advertisements produced, the focus on product characteristics, and advertising sophistication among producers.

Keywords: Decking, advertising, WPC, customer, competitor, Porter's five forces, content analysis.

Introduction

Two decades ago, the decking industry saw tremendous growth, along with considerable change regarding the type of available decking materials. Most noteworthy was the introduction and intensive marketing of wood plastic composites (WPCs) in the mid 1990s. One of the largest markets for WPCs is outdoor decking (Stank and Smith 2010, Bowyer et al. 2007). Entry of WPCs into the marketplace caused traditional decking materials (i.e., naturally durable and treated wood) to lose considerable market share (Ganguly et al. 2010). In 1999, WPCs represented 8% of the U.S. decking market, and by 2009 this grew to 26% (The Freedonia Group, Inc. 2011).

When new products enter the industry, competition increases among all similar products, and customer needs are more deeply examined (Porter 2008). For traditional wood decking suppliers, it is crucial to consider customers' needs and the actions of industry competitors, such as WPCs, and then respond appropriately. One way businesses can strive to achieve a competitive advantage is by using Porter's five forces model to analyze competition and profitability of an industry (Porter 2008, Arons and Waalewijn 1999). Another means of gaining competitive advantage is through market orientation. Market orientation is a business culture that is externally focused on the process of generating and sharing market intelligence. When this process is continuously maintained, a business can possess the knowledge necessary to create superior value for its customers (Lukas and Ferrell 2000, Slater and Narver 1994a, Jaworski and Kohli 1993). These concepts are used to analyze wood company actions related to the entry of a substitute into the industry in terms of print advertisements.

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Objectives

This research seeks to identify changes in advertising in the western U.S. decking market resulting from the introduction and establishment of new decking product options between 1996 and 2006. The specific objective is to determine how advertising by wood companies changed in reaction to the entry of substitutes into the marketplace, particularly with regard to: (*i*) number and physical nature of ads by product, (*ii*) emphasis on innovation in ads by product, (*iii*) sophistication (overall ad appearance and appeal) of ads by product, and (*iv*) frequency of decking product characteristics (durability, ease of use, warranty, etc.) emphasized within advertisements.

Theoretical Background

With the growth the decking industry has seen since the 1990s, changes have occurred that have allowed other materials to enter the industry and alter market share among industry competitors. Today, the dominant deck substructural material is treated lumber, while WPCs are one of the main deck surface materials (Ganguly et al. 2010).

Due to the recent decline in the housing market, new home deck construction is no longer the focus of the industry. Data from 2008 indicate that the two main sources of revenue in this industry are generated from deck repair and remodeling (44%), followed by new deck construction on existing houses (42%) (Ganguly et al. 2010). Desirable product characteristics influential to material specifications of deck builders were identified as product life, appearance, consistency in material quality, and product availability (Eastin et al. 2005). Price was the least influential attribute, which may suggest homeowners are more concerned with material quality, durability, and ease of maintenance over price of the product. Customer opinions are of principal interest because previous research suggests homeowners are responsible for specifying material type 30%–50% of the time (Eastin et al. 2005).

Market Orientation

Marketing is a key activity when seeking to discover the needs and wants of target customers. To accomplish specific marketing goals, a company strives to be more effective and efficient than its competitors in identifying and fulfilling customer needs and wants (Narver et al. 2004, Slater and Narver 1998, Kohli and Jaworski 1990). A company that is consistent with this marketing concept can be considered a market-oriented company (Kohli and Jaworski 1990).

For a company to be market oriented, the expressed and latent needs of the target market must be understood, and these needs should be fulfilled. Understanding and filling customer needs can maximize a business' economic value (Narver et al. 2004, Slater and Narver 1998). A company also must be aware of its competitors' capabilities and future plans. By collecting and analyzing market information in a systematic manner, a company can acquire knowledge about its customers' needs as well as competitors' capabilities (Slater and Narver 1998). Narver et al. (2004) summarize from previous research that market-oriented companies are associated with superior market performance in profitability, sales growth, and new-product success.

A business can enhance its market performance by increasing its market orientation (Narver and Slater 1990). Market orientation is classified by Narver and Slater (1990) as the modern marketing management strategy and the foundation of a business' competitive advantage strategy. Market orientation is a business culture that is externally focused on the process of generating and spreading market intelligence to create superior value to customers (Lukas and Ferrell 2000, Slater and Narver 1994a, Jaworski and Kohli 1993). A company that actively pursues market orientation is responsive to changes in market needs, such as doing something new or different in response to market conditions. Among other signs, market orientation can be viewed as a form of innovative behavior (Narver et al. 2004, Jaworski and Kohli 1993, Kohli and Jaworski 1990). Market orientation focuses on three components: (1) customer orientation, (2) competitor orientation, and (3) interfunctional coordination (Hansen et al. 2006, Kohli and Jaworski 1990, Narver and Slater 1990). These three components are equally important and are long-term focused and profit driven (Slater and Narver 1994a, Narver and Slater 1990). For a company to be market oriented, the whole company must embrace the processes of creating superior customer value (Slater and Narver 1998).

Customer Orientation

It has been stated that the heart of market orientation is customer focus (Slater and Narver 1994a). This component of market orientation focuses on understanding customer needs and maintaining high levels of customer satisfaction by creating continuous superior value for customers (Hansen et al. 2006, Narver and Slater 1990). To maintain value to customers, an understanding of the entire value chain is required. A common way to understand customer views is to continuously evaluate customer satisfaction (Slater and Narver 1994a, Narver and Slater 1990). Businesses that are customer-oriented become efficient at identifying customer needs (Lukas and Ferrell 2000).

Competitor Orientation

Another behavioral component is competitor orientation. A company needs to identify and understand its competitors' short-term strengths and weaknesses and long-term capabilities and strategies (Slater and Narver 1994a, Narver and Slater 1990). By understanding and continuously examining competitors, a company can quickly respond to competitive threats and develop a competitive advantage (Hansen et al. 2006, Slater and Narver 1994a). Companies that achieve sustained competitive advantage acquire skills that can provide customers with superior value and are therefore difficult to imitate by competitors (Slater and Narver 1998).

Interfunctional Coordination

Interfunctional coordination is the third component of market orientation. This component consists of contributions from any individual or resources within a value chain contributing to the continuous efforts to create superior buyer value. Interfunctional coordination can take place at any point in the buyer value chain. With this opportunity for creating value, the business benefits from coordinated efforts among multiple departments (Slater and Narver 1994a, Narver and Slater 1990). When all departments contribute to creating this value, more creativity is used to effectively and efficiently meet the needs of the customers (Hansen et al. 2006, Slater and Narver 1994a). This coordination can enhance a company's core functions, such as organizational communication concerned with customers and competitors (Lukas and Ferrell 2000, Slater and Narver 1994a).

Porter's Five Forces

Porter's five forces model is a widely used conceptual framework for understanding an industry's structure and the shape of the competitive interaction within an industry (Porter 2008, Arons and Waalewijn 1999). The five forces (competitors, suppliers, threat of entry, customers, and substitute products) jointly determine the strength of an industry's competition and profitability (Porter 2008, Arons and Waalewijn 1999, Porter 1980). The relative strength of the forces differs by industry (Porter 2008, Arons and Waalewijn 1999). The forces can help reveal whether an industry is attractive and help anticipate any shifts in the industry structure before those shifts are apparent.

Industry structure is constantly adjusting, and these changes can increase or decrease the industry's potential profit. Changes in an industry can include the threat of new entry, changes in supplier or buyer power, threat of substitution, and new bases of rivalry. When a company considers all five forces, the overall structure is evaluated, and attention is focused on structural conditions. This focus helps guide managers in the direction of strategy for the company within the industry (Porter 2008).

Competition and profitability are significantly impacted by industry structure. Effective strategic positioning relies on recognition and appreciation of industry structure. Therefore, understanding which forces shape industry competition is essential for developing strategy (Porter 2008). The forces reveal important aspects based on the competitive environment and competitor strengths and weaknesses (Porter 2008, Arons and Waalewijn 1999). The five forces are described further below.

Competitors

The competitors force is described as rivalry among existing competitors. Rivalry can take many forms, such as price discounting, new product introduction, advertising campaigns, and service improvements. The degrees of these forms are based on the intensity and the nature of the rivalry. When rivalry takes place in the same forms, profitability is impacted (Porter 2008).

Rivalry can be destructive to profitability if competition is based solely on price. Price competition transfers the profits from industry directly to customers. If price competition is sustained, customers become more focused on price and less focused on product features and quality. Product features, support services, brand image, delivery time, etc. are less likely to negatively influence a business' profit than price competition is (Porter 2008).

The competitive environment of an industry can determine the behavior of firms and overall performance of competitors (Porter 2008). The level of aggressiveness among competitors is influenced by size, diversity, and growth of the industry; lack of differentiation, high fixed costs; and the business' strategic importance (Arons and Waalewijn 1999). Ideally, the industry will obtain a positive sum rivalry that increases the average profitably and expands the industry. Positive sum rivalry focuses on the needs of the different groups of customers in terms of prices, products, and services (Porter 2008).

Suppliers

Suppliers can show power and gain more value for themselves by raising prices or shifting costs to industry participants (Porter 2008, Arons and Waalewijn 1999). A supplier can become powerful if it doesn't significantly depend on a single industry for its revenues, participants face switching costs, products offered are differentiated from others, or there are no substitutes for goods they provide to the industry (Porter 2008).

Threat of Entry

Another force in Porter's five forces model is the potential of new entrants to the market.. The threat of entry can limit potential profit in an industry. This limit is a result of new entrants broadening industry capacity and the drive to capture market share. As a result, pressure is placed on prices, and investments are made to divert new competitor entry. New entrants to the industry face barriers to entry (Porter 2008). These barriers pertain to important structural components such as scale economics, differentiation, switching costs, capital requirements, cost disadvantages, and access to distribution channels (Arons and Waalewijn 1999). The challenge for new entrants is to find ways to overcome the entry barriers without influencing the profitability potential of the industry (Porter 2008).

Customers

The customer force refers to the power of buyers in an industry. With bargaining power of buyers, customers can capture more value by forcing prices lower or demanding higher quality or more service. Customers can make this occur by turning industry competitors against each other, which can decrease industry profitability (Porter 2008, Arons and Waalewijn 1999). Bargaining power can differ among distinct groups of customers. Intermediate buyers, those who purchase a product but are not the end-user, may have more bargaining power because they can influence the purchasing decisions for end-customers (Porter 2008).

Substitutes

The last of the five forces is substitute products, which pertains to the availability of substitutes in an industry. Porter (2008) describes substitutes as "performing the same or similar function as an industry's product by a different means." Substitutes are always present in an industry but may be overlooked because they appear different from other products. The threat of substitutes is another factor that can limit an industry's potential profits.

A wide variety of substitutes can result in a price ceiling on industry products. Also, with a high number of equal alternatives, switching costs for buyers are low. An industry's growth and profit potential can suffer by not creating distance from substitutes through product performance and marketing. An industry must be aware of technology and competitive changes in other industries. These changes can make a given industry more attractive for substitutes (Porter 2008).

Market Orientation and Porter's Five Forces

Market orientation and Porter's five forces model are related to each other in many aspects of business strategy and structure. For the purpose of this study, the customer and competitor components of market orientation and the competitor and substitute forces of Porter's five forces model are the focus. The analysis of print advertisements in this study provides insights regarding firm reactions to competitors and substitutes, including enhanced customer and competitor orientation. Print advertisements can provide observable cues regarding business strategies, such as number of advertisements, physical qualities, innovative focus, sophistication, and product characteristics that are frequently used in advertisements. These observable features of advertisements are an indication of customer orientation, competitor orientation, and competitor and substitute forces.

The forces of Porter's model can influence the performance of a business (Slater and Narver 1994b, Porter 1980), which can be addressed through the behavioral components of market orientation (Narver and Slater 1990). Rivalry among competitors and threats of substitutes can influence an industry's potential profit (Porter 2008). A market-oriented company can more readily control these forces by focusing on customer and competitor orientation. When a company understands its customers and competitors and responds accordingly, the threat of rivalry and substitutes can be reduced. Also, when a business recognizes its competitors' abilities, it can better differentiate itself from those competitors. Through differentiation and superior customer value, a company likely can develop a competitive advantage and decrease the potential negative influence on profits. When a business becomes more market oriented, it is in the best position to succeed under any environmental conditions influenced by Porter's five forces (Slater and Narver 1994b).

Forest Products Industry

Previous research has shown that the forest products industry has become more customer focused over time (Tokarczyk and Hansen 2006, Hovgaard et al. 2005, Niemelä and Smith 1997, Idassi et al.1994). Competition is increasing within the industry with new technological advances in wood and nonwood substitutes (Idassi et al. 1994). As rivalry among competitors and viable substitutes emerge within the forest products industry, businesses must address these forces in their strategies. One option for dealing with these forces is to become more market oriented. Market-oriented firms can address the competitor and substitute forces through changes in practice. Print advertisements are one indicator of these changes.

Print Advertisements

Print advertisement context, such as product features or characteristics, can influence a consumer's perceptions of the product being advertised (Yi 1993, Hanssens and Weitz 1980). The context within an advertisement can affect the attitude toward a product (Yi 1993, Yi 1990). The use of photographs and illustrations has been seen to relate to consumers' ability to recall advertisements for products that are routinely purchased. Another feature of ads that can influence the overall effectiveness is the size of the advertisement (Hanssens and Weitz 1980). Attributes that are being primed to the consumer in the context of the ad can result in positive or negative connection to the product being advertised. This can thereby affect overall product evaluations (Yi 1993, Yi 1990). When an attribute is primed, it can increase the likelihood that the specific attribute will be used to evaluate the advertisement information. This can influence the effectiveness of advertising (Yi 1990).

Although advertisement context can impact the effectiveness of an ad, other factors regarding advertisements influence their effectiveness as well. Consumers' perceptions toward advertising may impact the effectiveness of advertisements (Mehta 2000). When advertising was viewed with a positive attitude, consumers recalled more ads then those with negative attitudes toward advertising. Attitudes toward advertising can be influenced if consumers believe advertising contributes to their knowledge regarding the marketplace. Also, if advertising is viewed as not being manipulative, it can positively influence these attitudes (Mehta 2000).

Content Analysis

Content analysis as an evaluation tool provides an objective and systematic way to analyze the components of an advertisement (Kassarjian 1977).This method provides objectiveness by using multiple analysts who separately review the same content and achieve standardized findings. It provides a systematic approach when content variables are retained and employed consistently, as specified in the coding (Kassarjian 1977). This research method has been validated through many studies, as seen in Naccaroto and Neuendorf (1998), as a technique for evaluating a variety of different media types.

Content analysis has been used in a wide variety of disciplines. Chiefly, however, it is a coding and interpreting process combined with studying a process that occurs over a long period of time, which may reflect trends in society (Berg 2009). Widespread adoption and use of this method has demonstrated an inherent flexibility and capacity to analyze communications at multiple levels. This flexibility is seen in media studies that range from beer commercials to political platforms that have utilized content analysis (McGraw et al. 2008, Wagner and Hansen 2002, Kolbe and Burnett 1991, Weber 1990, Yale and Gilly 1988, Krippendorff 1980).

The common focus of content analysis as a research method has been on magazine advertisements. Research examining magazine ads has focused on both the "form" (size, color, graphics, and headlines) and "content" (clutter, anxiety, fear, guilt, sex, humor, appeal, and realism) variables of the advertisements. Within these research studies, an expressed interest was in identifying blueprints for effective advertising, predictors of recall, or readership, among others (Naccaroto and Neuendorf 1998, Warlaumont 1998, Huhmann and Brotherton 1997, Speck and Elliott 1997, Kamins 1990, Kahle and Homer 1985). These studies have demonstrated effectiveness of the content analysis method in evaluating both form and content variables in magazine advertising.

Methods

This study, using content analysis, examined print ads from decking manufacturers in the western U.S. in an effort to better understand how advertising by wood companies has changed in reaction to the entry of substitutes into the marketplace. The content variables were evaluated based on the advertisement coding standards used in this study. Parameters for coding of each variable were determined by the judges at the beginning of the study, based on their experience and views. The coding of each variable used, and an explanation of the coding involved in each for this study, is described in the following.

Operationalization—Advertisement Coding

Advertisement physical qualities

Advertisement physical qualities are examined using four different variables: product material, advertisement size, color usage, and image usage. *Product material* classifies each advertisement into one of the three decking material categories: wood (naturally durable wood with no focus on treatment), treated wood (focus on treatment), and WPC. *Advertisement size* classifies each advertisement into a category based on the amount of area the advertisement takes up on a page. This was evaluated using five categories: full page, two-thirds page, half-page, one-third page, and quarter-page. *Color usage* evaluates each advertisement according to whether the advertisement was displayed in full color or not in full color (color toned [including a single color] or black and white). Lastly, *image usage* was evaluated according to whether or not an ad used a photograph.

Innovative focus

Innovative focus refers to the use of innovative elements in terms of terminology (proprietary, patented, patent pending, new, improved, exclusive, innovative) and/or imagery (new product design, application) featured in an advertisement. This is evaluated using a single variable that ranged from (1) high innovative focus (prominent use of innovative terminology and/or imagery), (2) moderate innovative focus, to (3) low innovative focus (little or no use of innovative terminology and/or imagery). Each advertisement was evaluated and graded to the degree to which each focused on product, process, or service innovation via language and/or imagery.

Sophistication of advertisements

Sophistication of advertisements is the overall quality of advertisements in terms of image and overall message appeal. As competition and product substitutability increase, the importance of a well-constructed message becomes increasingly important. Market-savvy firms recognize the value of well-constructed advertisements that are both visually appealing and clear to advertisement recipients. Firms producing advertisements with low sophistication risk directing potential recipients to competitor messages or reflecting a poor overall image. Two variables are used to measure sophistication of advertisements: *overall advertisement appearance* (e.g., clear, contemporary, compelling ad nature, not busy, readable text) and *overall message appeal* (message is clear, compelling, coordinated with the image, informative, and unique approach is employed). Variables ranged from (1) good, (2) moderate, to (3) poor.

Frequency of characteristics

Frequency of decking product characteristics evaluates the variety of different product characteristics that are employed in advertisements and are used by producers to improve product appeal. Different product characteristics are regularly observed in decking ads to inform and/or encourage customers in product selection. Characteristics that were used for analysis were durability, installation, warranty, longevity, maintenance, environmental, technology, and service. If characteristics appeared in the ad, the characteristic was coded as present in the advertisement.

Periodical and timeframe of review

The Merchant Magazine was the periodical selected for the advertisement review. This periodical was selected because it reaches the entire western U.S. building distribution chain, specifically targeting lumber and building material dealers, wholesalers, and manufacturers. It has a long history, over 85 years, of serving as a medium for decking advertisements and literature. This periodical is a monthly publication that has a glossy finish to its pages and reaches more than 4,000 dealers, wholesalers and manufacturers. A 10-year timeframe was selected for this research; issues reviewed were published between 1996 and 2006. The reason for this 10-year time frame was that it marks the introduction of composite decking products on a wide scale, and it allows evaluation of composite decking as a new product introduction through establishment, as well as response by traditional decking producers.

Data collection process and analysis

Data collection consisted of a page-by-page examination of each issue of *The Merchant Magazine* between 1996 and 2006. The advertisements were selected for later evaluation based on a mention or description of decking or deck-related products in advertisements, including images, and/or any mention of wood preservation in the advertisement. The mention of wood preservation was used to assist in identifying treated wood deck material. Once advertisements were identified, they were digitally archived for the content analysis along with the volume in which the advertisement was found.

Effectiveness of each content variable and validity of judgments is evaluated through the proportion of agreement between the judges, which represents inter-judge reliability (Kassarjian 1977). This reliability score is also described as the ratio of agreed judgments of the total number of judgments within the analysis. A 70% or above inter-judge reliability ratio is recommend for a study to be valid (Naccarato and Neuendorf 1998, Kassarjian 1977).

To determine the inter-judge reliability ratio for this study, preliminary evaluation of 24 advertisements was made by each of the two judges to ensure that judgment parameters (variables) were well understood, and that independently evaluated advertisements were within reasonable bounds of agreement. During initial review, the ratio for multiple variables was less than 70%; thus, variables were further refined to provide more systematic evaluation guidance. Judges discussed differences and arrived at a consensus, and then further refined the variables for the remaining advertisement evaluations. Once coding of all advertisements was complete, the inter-judge reliability ratios exceeded 70% for each of the variables. The inter-judge reliability for the variables ranged from 71% to 99%, and the average ratio for all variables examined in this study was 86%. Achieving relatively high level of agreement suggests that the methodology outlined in previous work provides sufficient guidance, and that the imperatives of content analysis are met. Once the evaluation of advertisements was completed and inter-judge reliability was calculated, judges addressed areas of disagreement and came to a consensus to use for the final results.

Results

During the 10-year timeframe, *The Merchant Magazine* published 120 issues, in which 577 decking product and wood treatment advertisements were identified. A total of 252 of the advertisements are classified as unique advertisements, meaning the first time an advertisement appeared to the judge, and 325 were repeats.

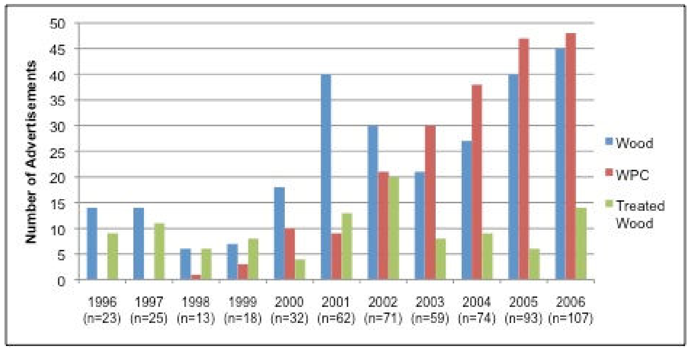
Number of advertisements by product

Each advertisement that was selected was classified into one of three product material categories (wood, treated wood, or WPC). The number of unique advertisements and total advertisements for the product material categories analyzed can be seen in **Table 1.**

The WPCs category represented 43% of unique advertisements that were found during the timeframe of the study; wood followed closely at 37%, while treated wood made up only 20% of unique advertisements. When the total number of advertisements was examined, wood advertisements (45%) were seen more than WPCs (36%), and treated wood (19%) was seen the least. Another way to look at decking advertisements is by product category for each year; this shows the growth and decline of the number of product advertisements by year (**Figure 1.**).

Decking advertising increased frequency between 1996 and 2006, with the majority of the growth seen between 2001 and 2006, which was due to increased wood and WPCs decking advertisements. WPC advertisements exceed the number of wood advertisements from 2003 to 2006.

Figure 1. All advertisements by product per year.



Physical nature of advertisements

Advertisement physical qualities vary by size, color, and image usage. After evaluating the three decking product material advertisements in this study, larger full-color advertisements with photographs were found to be more frequent than quarter-page non–full-color advertisements that contain no image.

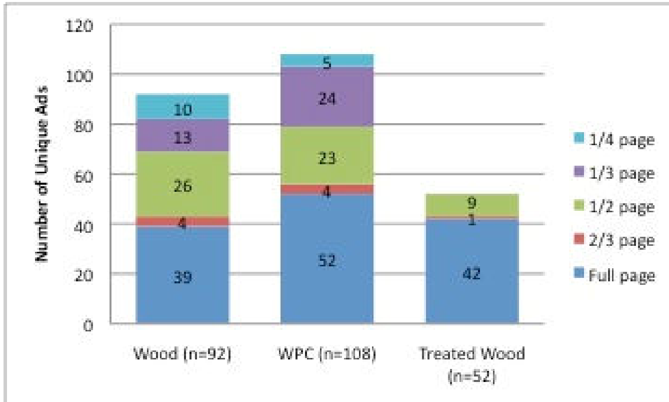
The most commonly seen advertisement size is full-page advertisements, which constitute more than 54% of all unique advertisements. Half-page and one-third-page advertisements are the second and third most commonly seen advertisement sizes employed, respectively. Of the full-page and one-third-page advertisements, WPCs are most commonly seen (**Figure 2.**). Almost half, 48%, of WPC unique advertisements are full -page, followed by (22%) one-third-page and (21%) half-page advertisements.

Advertisement size can also be looked at for all decking advertisements (unique and repeated advertisements) by year. Of all advertisements, 59% were classified as large advertisements (full- or two-thirds-page). WPCs and wood decking account for more than 50% of all large advertisements between 1999 and 2006. During this timeframe, WPCs are the most frequently seen large advertisements. Prior to 1999,

Table 1. Unique and total advertisements by product category.

Product Material	Unique Ads	% of Unique Ads	Total Ads	% of Total Ads
Wood	92	37	262	45
Treated wood	52	20	108	19
WPC	108	43	207	36
Total	252	100	577	100

Figure 2. Unique advertisements by product category and advertisement size.



treated wood ads were the majority of large advertisements, but after 1999, the frequency of treated wood advertisements varied over the remaining years of this study. Smaller advertisements (half-page or smaller) make up 41% of all observed advertisements. Similar trends were seen for smaller advertisements as were seen for large advertisements, except that treated wood advertisements maintained a smaller presence in the later years of the timeframe, suggesting a possible focus on larger advertisements.

When color of each advertisement was evaluated, the advertisements were classified into two different categories: full-color or non–full-color (black and white or color toned). There was a predominance of full-color use for all product categories of unique advertisements (**Table 2.**). Wood advertisements tended to use the most non–full-color advertisements, 28% of all unique advertisements, while WPCs used non–full-color advertisements for only 5% of unique ads.

Color advertisements can be evaluated for each of the 10 years in the timeframe being reviewed, as well as for all advertisements. Between 1996 and 2006, the majority of all advertisements employed full color (79%). When examining trends seen in frequency of advertisements, full-color usage follows similar trends. This trend was an increase overall for decking advertisements over the years (42% in 1996, 96% in 2006). When examining all advertisements, 21% were non–full-color, and of these, wood decking represents the largest proportion (71%), followed by treated wood (20%) and WPCs (7%).

Table 2. Percentage of unique advertisements based on color usage and product material category.

	Wood (n=92)	WPC (n=108)	Treated (n=52)
Non–Full-Color	28%	5%	10%
Full-Color	72%	95%	90%

Assessment of image use among unique advertisements indicated extensive use of photographs across all product categories. The advertisements that displayed graphics/no image were seen most frequently in wood decking advertisements (21%). When image usage is evaluated by year for all advertisements, the majority (87%) of advertisements between 1996 and 2006 contained a photograph. The use of graphic/no image was more frequent in the early years of this study; for example in 1996, 54% of advertisements used graphic/no image, but like color usage, over time photographs in advertisements increased.

Innovative focus in advertising

During the evaluation of innovative focus of unique advertisements, a strong tendency (75%) toward low innovative focus was seen, followed by a high innovative focus (16%). However, when unique advertisements are evaluated based on product category, more than three-quarters of wood and wood -treated advertisement had low innovative focus (**Figure 3.**). When evaluating all advertisements, one pattern that emerged was the distinct downward trend in the percentage of low innovative focus over time, while high innovative focus increased (**Figure 4.**).

Sophistication of advertisements

Figure 3. Innovative focus of all unique advertisements by product category.

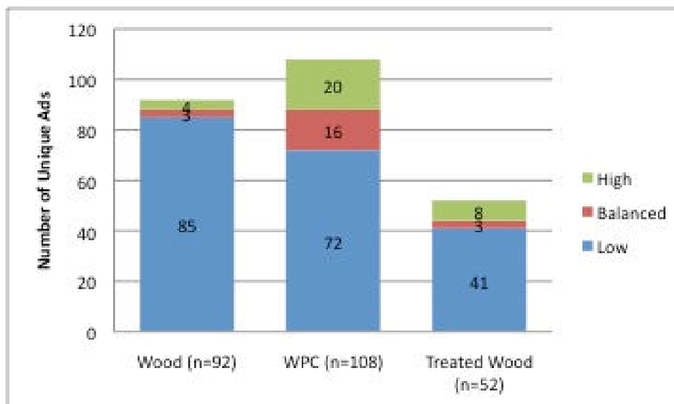
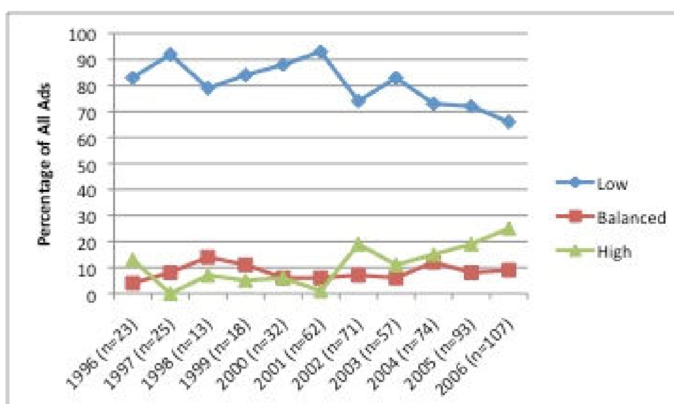


Figure 4. Innovative focus of all observed advertisements per year.



Sophistication of advertisements is broken down into advertisement appearance and appeal. Appearance refers to the creative, contemporary, compelling style of the advertisement. The most common among unique advertisements was moderate overall appearance at 48%, followed by both poor and good overall appearances, which were equally represented at 26%.

For all unique advertisements based on product category, treated wood advertisements tended to have either poor or moderate overall appearances. WPCs and wood advertisements presented advertising with the best overall appearance. For all advertisements over each year, there was a downward trend in percentages for both moderate and poor overall advertisement appearances. Good overall appearance in ads increased over the years due to the increasing frequency of advertising within the decking sector and growth in the decking sector, both of which can motivate improved advertisement construction. The increase can partially be due to the greater use of color and photographs.

A moderate overall message appeal was most common among unique advertisements (69%). When unique advertisements are evaluated based on product categories, WPCs and wood advertisements were similar in terms of high, moderate and low message appeal, while treated wood advertisements tended to have a more moderate to low message appeal (**Figure 5.**). Patterns were similar to overall advertisement appearance for all advertisements per year; there was a moderate message appeal, which tends to decline over time, while high message appeal increases (**Figure 6.**).

Figure 5. Overall advertisement message appeal of all unique advertisements by product category.

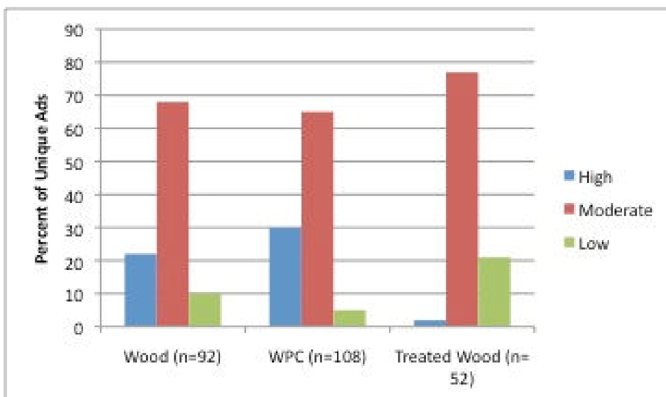
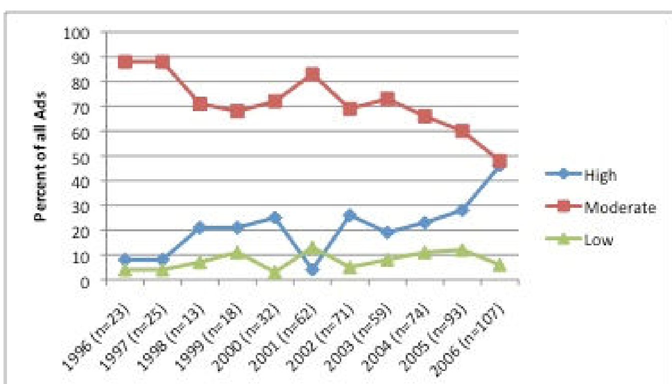


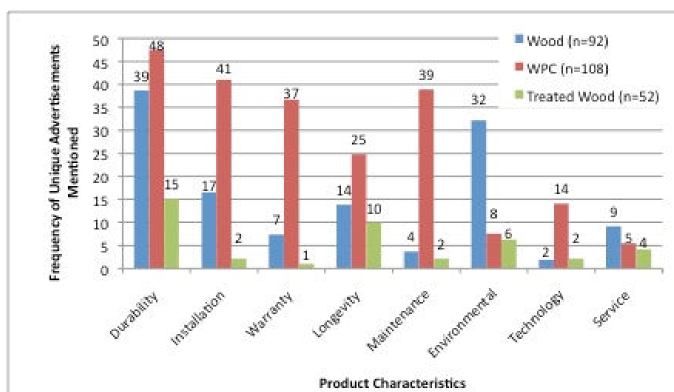
Figure 6. Overall message appeal of all advertisements per year by percentage.



Frequency of decking product characteristics

A variety of different product characteristics are employed by producers in advertisements to improve product appeal. Eight main product characteristics were noted in the evaluation process: durability, installation, warranty, longevity, maintenance, environmental, technology, and service. During the evaluation process, judges used a tally system to determine the frequency of the eight product characteristics. Several of these characteristics are regularly observed in decking advertisements to inform or encourage customers in product selection. For unique advertisements, durability (26%) and ease of product installation (16%) were the most frequently mentioned. The least commonly observed in all unique advertisements were service (5%) and technology aspects (5%). When evaluating unique advertisements by product category, WPCs included limited use of environmental product qualities but higher use of durability, installation ease, warranty, longevity, and low maintenance (**Figure 7.**). This is not surprising because the characteristics mentioned most are inherent strengths of the product, particularly when compared with wood. Wood decking material did employ use of the environmental product qualities to a much greater extent than WPCs, while treated wood advertisements commonly included durability, warranties, and longevity (**Figure 7.**). Use of these product characteristics in advertising was more common in the second half of the study period than during the first half.

Figure 7. Percentage of unique advertisements that mentioned product characteristics by product.



Discussion and Conclusions

As discussed above, the main focus of this research was to identify changes in advertising in the western U.S. decking market resulting from new competitors/substitutes in the marketplace. Changes in advertising were considered in the following areas: (*i*) number and physical nature of ads, (*ii*) emphasis on innovation of ads, (*iii*) sophistication of ads, and (*iv*) frequency of decking product characteristics emphasized within ads. Advertisements increased in frequency over this time period, and there was increased image usage, innovative focus, and overall appearance. Overall, changes in market orientation and Porter's thinking around competitors and substitute products can help explain changes made by industry incumbents during the period covered by the study. Study results provide a strong indication that the entry of WPCs as a substitute into the industry changed the behavior of existing firms, as indicated by changes in advertising. The following discusses each of the four areas mentioned above.

The number of advertisements increased for wood and WPCs over the time period covered in the study. One of the most notable changes was the dramatic increase in the number of advertisements produced by wood companies. From 1996 to 2006, the number of advertisements by wood companies grew by more than 300%. This increase in advertising may be an outcome of entry of a substitute product and rivalry among competitors in the industry (Porter 2008). As pointed out by one anonymous reviewer, some of the increase may also be explained by the overall growth in the housing sector during the same time period (NAHB 2012).

The wood products industry has a reputation as being commodity oriented and often lacking innovation (Hansen et al. 2007).This is shown in the results where wood and treated wood ads primarily exhibited a low innovative focus. However, the trend overall in innovative focus is positive, with a falling low innovative focus and a rising high innovative focus. This suggests that wood decking companies are responding to relatively high innovative focus of ads produced by WPC suppliers. Being seen as innovative is a means for differentiation and can indicate a focus on customers and as a response to substitutes and competitors.

The increase in advertising sophistication among all producers was an important finding in this study. This increase was derived from the overall message appeal and advertisement appearance for each of the product categories. The increase in sophistication is a logical outcome of the increased frequency of advertising and the rivalry among competitors in the industry. (An anonymous reviewer suggested this increase may also be a result of technology advancements during the study period.) Although an increase in sophistication of advertisements was seen across product types, treated wood ads saw the lowest increase during the study period. Advertisement sophistication can differentiate companies from competitors and suggests that wood decking companies had a competitor orientation during the study period. There is also an element of customer orientation in this increased ad sophistication. Appeal and appearance are directed to potential customers, and it is clear that wood and WPC businesses used ads as a means to visually appeal to—and provide a clear message for—customers, compared to treated wood businesses.

The focus by advertisers on product characteristics, such as durability, ease of installation, warranties, and environmental qualities, was higher in the second half of the period studied than in the first half. As expected, emphasis was different based on product type, with WPCs emphasizing durability, installation, warranty, maintenance, and environmental aspects. Wood-related ads rarely emphasized warranty or installation. A focus on product characteristics is a means of notifying customers that their specific needs are met by the product, and is an indication of a customer orientation.

Changes in advertising during the period of the study indicate that wood and treated wood companies did respond to the new substitute and competitor, WPC decking. The companies clearly were focused on the competition and to some extent met the challenge presented by the competition in the form of more appealing advertising. Overall, the findings suggest that wood, and treated wood to a lesser extent, used a customer and competitor orientation to respond to the competitive threat represented by WPC decking.

Limitations

Several limitations exist within this study. One limitation was the coverage and analysis of only one trade journal. By evaluating a variety of journals in an analysis, compensation for any deficiencies seen in this specific journal could be addressed. The variable codes assigned by the researchers can be viewed as another limitation because there is potential for researcher bias. A set criteria for coding was established for the study, although having more than two judges participating in the coding of advertisements might reduce any researcher bias that may have been present.

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