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CONSTRUCTING A MULTI-CRITERIA CO-BRANDING STRATEGY MODEL FOR FAUCET INDUSTRY

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ABSTRACT

This study aims to construct a multi-criteria co-branding strategy model for the faucet industry by examining the critical success factors. It also seeks to help decision makers with selecting an appropriate co-branding alliance strategy. Based on a literature review and expert interviews and subsequently utilizing the analytic hierarchy process (AHP), this study uses a hybrid approach and applies both quantitative and qualitative factors in the construction of hierarchical model. It identifies and prioritizes four critical success factors, 12 critical success sub-factors, and 43 criteria by employing the AHP. The results indicate that "brand strategy" is the most important success factor. Furthermore, the most important key sub-factors are "value proposition", "safeguard system", "brand positioning", "channel management" and "brand identity". Faucet firms should endeavor to formulate an effective brand strategy, establish a sophisticated safeguard system, and construct a precise channel management system in order to implement co-branding. Incorporating the analytical findings, this study proposes a hierarchical model to facilitate the formulation and implementation of strategies for co-branding. The hierarchical model would assist faucet firms in determining the relative importance of decision elements and planning feasible strategies for co-branding implementation.

KEYWORDS

Analytic Hierarchy Process, Co-branding, Critical Success Factors, Faucet Industry, Strategy Alliance.

INTRODUCTION

Since the 1960s, over 50% of the world's annual production of faucets and bathroom fixtures has come from Taiwan. From die casting to finishing, the faucet industry in Taiwan used its competitive advantage of low labor cost to grow rapidly. The entire supply chain of the industry includes more than one thousand companies and its annual production is valued at two billion U.S. dollars. This industry occupies a prominent role in the global manufacturing industries (Yeh and Hsu, 2010). However, the manufacturing-based faucet industry has the same development trajectory as many traditional industries. Under the rapid development of the global economy, especially the opening of China as a global manufacturing base, the faucet industry in Taiwan is facing the development crisis of being traditional, labor-intensive and low-value added. The industry is slowly losing its competitive advantage of low labor cost in the current global marketplace. A pure focus on original equipment manufacturing (OEM) can no longer create competitive advantages for faucet companies in Taiwan. Some faucet manufacturers have chosen to shut down their factories in Taiwan or build new plants in China. But how is faucet industry still doing reasonably well and how does it keep its competitive advantages?

In order to adapt to changes in the global economic environment, many firms changed their business models. Some firms invested their resources into research and development, brand building, and other high value-added activities. They hope to use those investments to increase their competitive advantages. In fact, many firms in the faucet industry are small and medium enterprises, each firm focusing on only one or two specialized production activity. Due to resource constraints in the areas of finance, human resources, and technologies, these firms have only limited options for increasing their competitive advantages and becoming more innovative as long as they rely solely on their own capabilities (MacGregor, 2004). Furthermore, the major customers of these firms are industrial buyers. In contrast to consumer markets, high concentration of buying power is concentrated in the hands of the industrial markets' buyers. Consequently, there is higher risk and uncertainty in industrial markets. In other words, the relationships of faucet firms with their industrial customers in the industrial market are not purely transactional, but also based on trust (Bengtsson and Servais, 2005). Therefore, faucet firms have to adopt the manners of cooperative marketing in order to overcome the constraints they face. In particular, co-branding is the most effective strategy to resolve those problems (Besharat, 2010).

The main idea underlying co-branding is to let the names of both brands appear together on one product, logo or product packaging. The firms involved in a co-branding relationship are in a long-term partnership. Each firm combines resources, capabilities and core competencies with its alliance partner to pursue mutually beneficial advantages in designing, manufacturing and marketing of products or services (Besharat, 2010). Moreover, co-branding helps with reducing risk and uncertainty, creating barriers to entry from competitors, and entering markets which were previously difficult to enter (Bengtsson and Servais, 2005; Erevelles *et al.*, 2008).

In the research area of branding, most studies focused on how to build up brand equity in the consumer context (Keller, 2003), or concentrated on the issues concerning brand extension strategy (Doyle, 1989). However, few studies discussed the issues related to co-branding strategy, especially the co-branding strategy model. Considering the theoretical and practical gaps discussed above, and the complex process involved with building the co-branding strategy model, this study aims to construct a multi-criteria co-branding strategy model for faucet firms in Taiwan. Through literature review and expert interviews, this study collects factors regarding co-branding alliance strategy, and then uses the analytic hierarchy process (AHP) approach to prioritize the individual critical factors in order to assist firms in developing an effective co-branding strategy model.

The remainder of this paper is organized as follows. The second section describes the conceptual background and theories relevant to the field of co-branding, it also identifies each critical factor and its role within the co-branding strategy. The third section illustrates the research methodology and the detailed development of the proposed model. The fourth section presents the relative importance of the elements in the proposed model via the AHP approach. Finally,

the last section discusses the managerial implications of the research results with regard to applying co-branding strategy to faucet industry and recommends additional issues for research.

LITERATURE REVIEW

CO-BRANDING

The concept of co-branding originated from strategic alliances and brand extensions. In the 1990s, Park *et al.* (1996) examined the relationships in composite branding alliances from the perspective of brand extensions. They described the end product of combining two existing brands as composite brand extension (CBE). In subsequent studies covering this topic, the theoretical foundation of co-branding started to develop incrementally. Up until now, even though various scholars have differing views about co-branding, including brand alliance (Lafferty, 2007), multi-branding (DiPietro, 2005), ingredient branding (Vaidyanathan and Aggarwal, 2000), and joint or dual branding (Lebar *et al.*, 2005), they all imply the basic concept of co-branding.

Co-branding is defined as the strategy of presenting two or more independent brands together on the logo and/or packaging of a new product or service (Besharat, 2010; Erevelles *et al.*, 2008). Brand strategists use the strategy of co-branding to transfer meanings from each host brand to the new combined brand in order to generate a more advantageous meaning and attribute profile for the combined brand (Bengtsson and Servais, 2005; Prince and Davies, 2002). At the same time, the primary objective of co-branding strategy is to launch a new product in a new or existing market (Besharat, 2010). In addition, the main expectation of firms seeking to co-brand is to pool their resources and capabilities, while maintaining their respective independence and self-determination. Thus, the advantages of co-branding strategy include not only strengthening the learning ability of firms, sharing of costs, reducing of risk and uncertainty, creating barriers to entry from competitors, and increasing competitiveness. Co-branding also allows the firms to enter markets, which were previously very difficult to enter (Bengtsson and Servais, 2005; Erevelles *et al.*, 2008).

THE FACTORS FOR CO-BRANDING STRATEGY

To construct the co-branding strategy model, it is necessary to not only consider the important components of marketing strategy such as marketing communication, channel and brand, but also to consider alliance network relationships and the fit between the products and brands of alliance partners. Because developing a co-branding relationship requires relying on the respective resources owned by alliance partners, building an effective platform for information sharing is particularly important (Devlin and Bleakley, 1988; Randall, 1989). In addition, the fit between the brands owned by each firm is also an important factor (Park *et al.*, 1991; Simonin and Ruth, 1998). Each critical factor and its role within the co-branding strategy are examined in further details below.

1. NETWORK RELATIONSHIP

When alliance partners pool resources, they need to adapt to conflicts that may arise during the cooperation process (Johanson and Mattsson, 1987). With the passing of time, the strategic benefits realized through the alliance may start to diminish for the firms involved. Furthermore, as bureaucratic cost increases and as knowledge and capability are exhausted, the alliance can no longer provide strategic value (Pitts and Lei, 2006). Hence, building a relationship of trust and effective channels of communication can reduce the risk of negative and speculative behaviors as well as helps the partners obtain synergy with their pooled resources (Centola, 2004; Mohr and Spekman, 1994).

Strategic alliances based on co-branding face another dilemma. As the alliance partners learn from each other, they may also worry about the loss of their technical and operational know-how and capabilities. To allow the alliance relationship to function effectively, scholars have made some suggestions. First, in order to construct the foundation of an alliance based on trust, the alliance partners should build a complete safeguard system, including patent application as well as protection mechanism and exit mechanism for the contractual relationship of alliance (Randall, 1989). Secondly, through the building of information sharing mechanism, the alliance partners can work together on tasks such as sales forecast, joint marketing planning, and sales review. Within an environment of information sharing, alliance partners can pursue common goals, reduce the likelihood of conflict, and realize the benefits of economies of scale (Chin *et al.*, 2008; Devlin and Bleakley, 1988; Randall, 1989). The last advice recommends the evaluation of product and brand fit between the alliance partners (Aaker and Keller, 1990; Park *et al.*, 1991). Park *et al.* (1991) suggested that product fit and brand fit directly affect to what degree consumers accept the new combined brand, which in turn influence the views of consumers about the existing brands. Namely, while applying this concept to co-branding, the implication is that when the similarity of product attributes and the consistency of brand concepts between the alliance partners fit well together, consumers will more likely accept the brand extension of the existing brands. Otherwise, when there is a lack of fit for the similarity of product attributes and the consistency of brand concepts among the alliance partners, then co-branding can not produce beneficial results.

2. BRAND STRATEGY

Motion *et al.* (2003) indicated that building co-branding relationship helps firm redefine brand identity, reposition their brands, and build brand equity. Thus, focusing on co-branding to formulate a brand strategy is useful for increasing the brand value of the new combined brand. Brand strategy covers concepts such as brand identity, value proposition, and brand positioning (Aaker, 1996; Osler, 2003).

Brand identity is the combined perception a consumer has about a brand, which is based on words, images, ideas and the mental associations of consumers with a brand (Upshaw, 1995). Through brand identity, a brand presents its uniqueness, meaning, values and personality. Brand identity also communicates a firm's culture, image, core value, and commitment to product quality (Brigitte, 2003; Pettis, 1994). Value proposition is the total benefits delivered by a firm as it solves an important problem or fulfills an important requirement for the targeted customer (Johnson *et al.*, 2008). In other word, when a firm implements a co-branding strategy, besides delivering value to the consumer through a product or service, it also needs to consider emotional benefit or self-expressive benefit to satisfy the deeper underlying needs of customers (Aaker and Joachimsthaler, 2000; Kim and Mauborgne, 2009). Brand positioning which emphasizes the advantages a product has over competing products is the method a firm uses to build a brand image (Kapferer, 1992). Brand positioning strategy uses product attributes, quality and competitors to position a product (Kotler, 1999).

3. MARKETING COMMUNICATION STRATEGY

Marketing communication is the process a firm utilizes to let consumers get to know a firm or a product, attract more customers, raise brand awareness, and increase sales. Marketing communication mix is composed of advertisement, sales and public relations; it relies on product benefits and incentives to directly and indirectly persuade consumers and it is an important element for implementing integrated marketing communication (IMC) (Kotler and Keller, 2006; Schultz *et al.*, 1993).

Advertisement is a method firms employ to promote their values, products or services through the media by buying commercial time slots or display space in non-personal communication channels such as TV, newspaper, magazine, outdoor advertising or Internet (Kotler and Keller, 2006). The cost for using the different communication channels varies. As far as the promotion of faucet products is concerned, the issue of which type of advertising may produce better results than others deserves to further examine. Sales is direct person-to-person communication between sales personnel and buyers, or using mail, telemarketing, TV direct selling or electronic marketing to have instant, interactive and customized communication with the targeted customers (Kotler and Keller, 2006). Marketing public relations is a sustained and planned two-way communication activity to build a mutually beneficial relationship with the public. Basically, marketing public relations has high credibility and allows a firm to get in touch with customers, who normally dislike advertisement and sales (Kotler and Keller, 2006). A focus on building a relationship with the public allows a firm to create a favorable image and gain the trust as well as support of the public.

4. CHANNEL STRATEGY

The marketing channel functions not only to serve a market, it also functions to create a market, turning potential buyers into profit-making orders (Kotler and Keller, 2009). Channel strategy is an important guiding principle influencing all marketing decisions and affecting long-term contractual relationships with other firms, it also guides the making of marketing policies and processes (Kotler and Keller, 2009). Consequently, channel strategy is also an important factor for implementing co-branding.

The positioning of an international marketing channel is a major challenge to a firm. The purchasing habits of customers may vary due to national differences. Therefore, the development of a marketing channel needs to adapt to local opportunities and conditions (Kotler and Keller, 2009). According to Rangan *et al.*

(1992), the best channel strategy configures a marketing channel in a manner that matches demands of customers. Because of that, after an alliance partner considers a faucet's product attributes and market patterns, choosing an appropriate channel model such as exclusive distribution, selective distribution or intensive distribution is a key consideration. Moreover, Kotler and Keller (2009) suggested that choosing the most appropriate channel is usually not the problem, the problem is with how to persuade appropriate distributors to help a firm distribute its products. Firms often use multiple channels to sell their products and services to give consumers more choices, but coordinating and integrating multiple channels poses challenges to marketing managers (Rosenbloom, 2007). Accordingly, channel management, including selection, training, motivation and assessment becomes particularly important. On the other hand, because firms have only limited understanding of markets and resources, different methods for developing marketing channels will influence the results of implementing co-branding. The most common methods and media for developing international markets consist of the agency recommendation, directory search, spot display, international exhibition, and direct calls (Murry and Heide, 1998).

RESEARCH METHODOLOGY

At the mentions of above literature review, we found only a few studies exploring the issue of co-branding in the faucet industry. Hence, scholarly research into this issue is still at an exploratory and premature stage. Based on the pre-existing literature, we have a good understanding of the critical factors of co-branding regarding faucet industry. Additionally, we interviewed the CEOs of faucet firms, experts and consultants in the field to further comprehend the views of the industry on co-branding. The interviews help ensure that there is no disconnect between academic theory and practical reality. Furthermore, we created the co-branding strategy model, its critical factors for success, and hierarchical structure framework through the AHP approach. Finally, we determined the weight of each factor for success and offer a referential framework for firms as they seek to implement co-branding.

AN OVERVIEW OF AHP

The purpose of this study is to use a hierarchical framework as a reference, mark out critical factors for success and construct a multi-criteria co-branding strategy model for the faucet industry. The AHP provides a flexible and easily understandable way of analyzing the co-branding strategy model. The AHP methodology as devised by Saaty is a powerful analysis tool in structuring complex problems (Saaty, 2000). We use AHP for ranking the importance of various alternatives (Chan *et al.*, 2004), because it involves both qualitative and quantitative methods. AHP which can transform complex problems into a simple hierarchic structure is a useful approach for evaluating alternatives of complex and multiple criteria (Chen and Wang, 2010). A decision-maker can determine the weights of various criteria by conducting pair-wise comparisons between them when applying AHP.

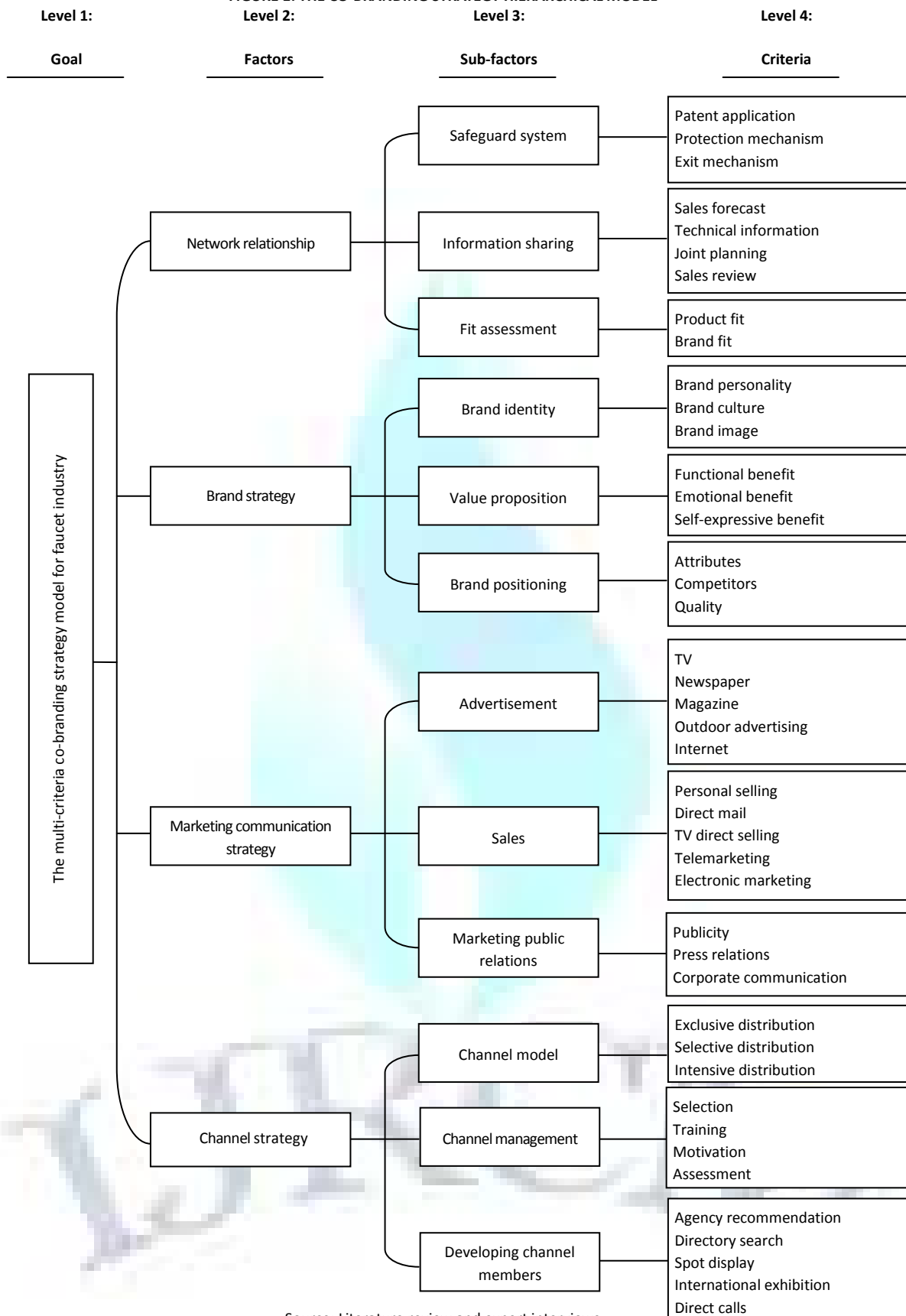
For these reasons, we proposed to analyze the critical factors for success in the co-branding strategy model through the AHP approach. We designed a nine point pair-wise comparative questionnaire and calculated data from the completed questionnaires. The judgments of the respondents were synthesized using the geometric mean approach suggested by Saaty (1994). The main procedures of AHP are: (1) structuring the co-branding strategy hierarchical model; (2) data collection by pair-wise comparisons of co-branding strategy elements; (3) checking the consistency of the collected data; (4) calculating the relative weights of co-branding strategy elements.

A HIERARCHICAL FRAMEWORK

According to the steps mentioned above, we first reviewed the literature and determined the original co-branding strategy elements. Next, we visited eleven senior industrial experts and consultants in Taiwan and conducted in-depth interviews with them. The information gathered from the experts and consultants were used to identify suitable co-branding strategy elements for the faucet industry. Based on the interviews, we obtained four major factors, 12 sub-factors, and 43 criteria.

We designed the hierarchical layers shown in Figure 1. The ultimate goal is in the first layer, the major factors in the second layer, the sub-factors in the third layer, and finally, the criteria in the fourth layer. Under this hierarchical framework, we summarized 79 items by questionnaire and calculated the weight of each element using AHP software.

FIGURE 1: THE CO-BRANDING STRATEGY HIERARCHICAL MODEL



Source: Literature review and expert interviews

PAIRWISE COMPARISON MATRIX

The detailed steps regarding the AHP process are discussed as follows (Saaty, 1994; Saaty, 2000):

Step 1: Constructing a pair-wise comparison matrix. According to the hierarchical structure, we constructed a pair-wise comparison matrix with a scale of relative importance. The pair-wise comparisons yield a square matrix as matrix A:

$$A = [a_{ij}] = \begin{bmatrix} 1 & a_{12} & \dots & a_{1m} \\ a_{21} & 1 & \dots & a_{2m} \\ \vdots & \vdots & \ddots & \vdots \\ a_{m1} & a_{m2} & \dots & 1 \end{bmatrix} \quad (1)$$

where $a_{ij}=1$ and $a_{ji}=1/a_{ij}$, $i, j=1, 2, \dots, m$.

a_{ij} represents a quantified judgment on a pair of criteria. The relative importance of two criteria is rated using a scale with the digits 1, 3, 5, 7, and 9. Number 1 denotes equally important. Numbers 3, 5, 7, and 9 mean moderately important, strongly important, very important, and absolutely important. The digits 2, 4, 6 and 8 are used to facilitate a compromise between slightly different judgments.

Step 2: Finding the relative normalized weight (w_i) of each attribute by calculating the geometric mean of the i th row normalizes the geometric means of the rows in the comparison matrix. The purpose of calculating the maximum eigenvalue and eigenvector is to test the consistency of pair-wise comparison matrix A. The eigenvector method is used for calculating the weights (Hsu and Chen, 2007). The relative weights of the elements in each level are calculated as follows:

$$w_i = \frac{(\prod_{j=1}^m a_{ij})^{1/m}}{\sum_{i=1}^m (\prod_{j=1}^m a_{ij})^{1/m}} \quad (2)$$

Step 3: Finding out the maximum eigenvalue " λ_{max} " (Saaty, 1994). We multiply the pair-wise comparison matrix A by eigenvalue w_i make new vector w'_i . Then, the λ_{max} is calculated as follows:

$$A = [a_{ij}] = \begin{bmatrix} 1 & a_{12} & \dots & a_{1m} \\ a_{21} & 1 & \dots & a_{2m} \\ \vdots & \vdots & \ddots & \vdots \\ a_{m1} & a_{m2} & \dots & 1 \end{bmatrix} * \begin{bmatrix} w_1 \\ w_2 \\ \vdots \\ w_m \end{bmatrix} = \begin{bmatrix} w'_1 \\ w'_2 \\ \vdots \\ w'_m \end{bmatrix} \quad (3)$$

$$\lambda_{max} = (1/m) * \left(w'_1/w_1 + w'_2/w_2 + \dots + w'_m/w_m \right) \quad (4)$$

Step 4: Calculating the consistency index using the equation $CI = (\lambda_{max} - m) / (m - 1)$. The smaller the value of CI, the smaller is the deviation from the consistency.

Step 5: Obtaining the random index (RI) for the number of attributes used in decision making. Calculating the consistency ratio CR using the equation $CR = CI / RI$. The value of CR = 0.1 or less is considered as acceptable.

RESULTS OF ANALYSIS

This study sent out 25 AHP questionnaires and all of the respondents, including CEOs, industrial experts, and consultants have been involved with the faucet industry for over ten years. 22 usable questionnaires were returned for a response rate of 88%. On the basis of the data from the questionnaires, the weight value of each element was calculated by AHP software. After calculating the weight values, we found that virtually all replies to the questionnaires have a consistency ratio (CR) of less than 0.1. Hence, the pair-wise comparison matrices from decision makers are acceptable.

THE PRIORITIES WITHIN THREE LEVELS OF CO-BRANDING STRATEGY MODEL

This section illustrates in further details the weight values of factors, sub-factors and criteria within three hierarchical levels of co-branding strategy model for faucet industry. The weight values of each level are shown in Table 1 and the details are discussed as follows.

1. THE PRIORITIES AT FACTOR LEVEL

After sorting the relative weight value of each factor in the co-branding strategy model, "brand strategy" has the highest weight value (0.426). "Network relationship" has the second highest value (0.248), followed by "channel strategy" in the third place (0.209). "Marketing communication strategy" has the lowest value (0.117). The results show that brand strategy is an essential requirement for implementing co-branding. In other words, brand strategy is a critical factor in determining whether implementing co-branding in the faucet industry will be successful or not. The correct brand strategy will help a faucet firm build a positive brand image, distinguish its brand from the competition, and gain competitive advantage.

In addition, faucet firms need to pay extra attention to "network relationship" and "channel strategy" while they seek to implement co-branding. The concept of co-branding means that firms enter into alliance relationships with one another. At the same time, firms should re-organize their own brands so that they end up with a single combined brand in the market place. Hence, the mutual exchange of favors, reliance, trust, commitment and resources between the partner firms become particularly important. Building a relationship and ensuring its proper functioning directly help the implementation of co-branding. In the area of channel strategy, several tactics such as channel management, channel positioning, and channel development also play critical roles while firms implement co-branding.

2. THE PRIORITIES AT SUB-FACTOR LEVEL

There are 12 sub-factors in the co-branding strategy model. These sub-factors further belong into four factors: "network relationship", "brand strategy", "marketing communication strategy" and "channel strategy". Within the "network relationship" factor, the weight value of the "safeguard system" sub-factor is highest (0.621). The next highest value is "information sharing" (0.2). "Fit assessment" has the lowest value (0.179). These results indicate that while implementing co-branding, the key technologies of each partner firm need to be protected. Within the "brand strategy" factor, the "value proposition" sub-factor has the highest weight value (0.365). "Brand positioning" has the second highest value (0.329). "Brand identity" has the lowest weight value (0.306). The difference between the weight values of the three sub-factors is small. Because brand strategy is the most important factor in the co-branding strategy model, brand identification, the value provided by a brand, and core position of a brand all play important roles.

As far as the "marketing communication strategy" factor is concerned, the sub-factor "marketing public relations" has the highest weight value (0.469). "Sales" has the second highest weight value (0.282), while sub-factor "advertisement" has the lowest weight value (0.249). The difference in weight values between "sales" and "advertisement" is small. These results show that building beneficial and long-lasting relationships with customers is an important tactic, and also reflect the long-time marketing model used by the faucet industry. Regarding the "channel strategy" factor, the sub-factor "channel management" has the highest weight value (0.622). Sub-factor "developing channel members" has the second highest weight value (0.249), while sub-factor "channel model" has the lowest weight value (0.129). Based on the results above, the effective managing of a channel system is a critical factor in determining whether co-branding can be successful. Faucet firms should pay special attention to the selection of channel members, incentive of channel firms, and assessment of channel performance.

3. THE PRIORITIES AT CRITERIA LEVEL

There are 43 criteria in the co-branding strategy model. The criteria belong into 12 sub-factors. Regarding the "safeguard system" sub-factor, the criterion "patent application" has the highest weight value (0.554). The criterion "exit mechanism" has the lowest weight value (0.114). This shows the protection of intellectual property is the most important criterion. Within the sub-factor of "information sharing", the criterion "joint planning" has the highest weight value (0.509). The difference in weight values between "joint planning" and other criteria is considerably large. This result fully demonstrates that when firms prepare to implement co-branding, planning and formulating marketing strategy jointly is a must-have element. All partner firms need to reach consensus on a marketing strategy for the new combined brand. As far as the "fit assessment" sub-factor is concerned, the criterion "brand fit" has a high weight value (0.615), qualifying it as an important criterion. Whether the implementation of co-branding can produce a unified brand image has a significant influence on the success of the new combined brand. Regarding the sub-factor "brand identity", the criterion "brand image" has the highest weight value (0.463). This fact implies that faucet firms need to pay more attention to customers' overall perception of the new combined brand. Within the sub-factor "value proposition", the criterion "emotional benefit" receives the most attention and has the highest weight value (0.543). This result fully exhibits that the faucets produced under the new combined brand need to have excellent product attributes and appeal to demand of customers for a sense of quality, so that customers are satisfied visually and aesthetically. With the "brand positioning" sub-factor, the results indicate the criterion "quality" is the most important one (0.409). This fact shows the critical role quality has in the brand positioning of the new combined brand.

In the area of the sub-factor "advertisement", the results indicate that "Internet" advertising, with a weight value of 0.378, is more important than other forms of advertising. In addition, with the sub-factor "sales", the criterion "electronic marketing" has a weight value of 0.471. This sales method is also considered much more important than other forms of sales. The high weight values of both "Internet" advertising and "electronic marketing" echo each other. This shows

that even though the faucet industry is a traditional manufacturing industry, the industry pays as much attention to information technology as other industries. Because the Internet is the main tool for communication in a wired world, it is also an important media for the implementation of co-branding. Regarding sub-factor “marketing public relations”, “publicity” is considered the most important criterion with a weight value of 0.436. This shows communication based on news reporting, such as marketing through the print or electronic media, is an important marketing communication strategy for co-branding. Concerning sub-factor “channel model”, the criteria “intensive distribution”, “selective distribution” and “exclusive distribution” have similar weight values. This fact shows these three criteria are essential in implementing co-branding. In the area of sub-factor “channel management”, the criterion “selection” which means the selection of channel members has the highest weight value (0.519). The weight values difference between “selection” and other criteria is large. This fact reflects the high importance of choosing and investigating channel members. With sub-factor “developing channel members”, “directory search” is the most important criterion (0.306). The second highest criterion is “international exhibition” (0.264). This result is not surprising given that faucet firms most frequently use those two methods now to find develop new channels and customers. Firms should apply their experience in this area to developing channel members for the new combined brand. Using a comprehensive directory of firms in the faucet industry or industry-specific magazines, firms can find suitable channel members and customers. Regularly attending international exhibits will assist faucet firms with meeting customers from different countries and push the new combined brand into international markets.

TABLE 1: THE PRIORITY WEIGHTS OF EACH LEVEL

Factors	Weights (Ranking)	Sub-factors	Weights (Ranking)	Criteria	Weights (Ranking)		
Network relationship	0.248 (2)	Safeguard system	0.621 (1)	Patent application	0.554 (1)		
				Protection mechanism	0.332 (2)		
				Exit mechanism	0.114 (3)		
		Information sharing	0.200 (2)			Sales forecast	0.110 (3)
						Technical information	0.273 (2)
						Joint planning	0.509 (1)
						Sales review	0.108 (4)
		Fit assessment	0.179 (3)			Product fit	0.385 (2)
						Brand fit	0.615 (1)
		Brand strategy	0.426 (1)	Brand identity	0.306 (3)	Brand personality	0.257 (3)
Brand culture	0.280 (2)						
Brand image	0.463 (1)						
Value proposition	0.365 (1)					Functional benefit	0.174 (3)
						Emotional benefit	0.543 (1)
						Self-expressive benefit	0.283 (2)
Brand positioning	0.329 (2)					Attributes	0.304 (2)
						Competitors	0.287 (3)
						Quality	0.409 (1)
Marketing communication strategy	0.117 (4)	Advertisement	0.249 (3)	TV	0.262 (2)		
				Newspaper	0.120 (4)		
				Magazine	0.142 (3)		
				Outdoor advertising	0.098 (5)		
				Internet	0.378 (1)		
		Sales	0.282 (2)			Personal selling	0.206 (2)
						Direct mail	0.134 (3)
						TV direct selling	0.118 (4)
						Telemarketing	0.071 (5)
						Electronic marketing	0.471 (1)
		Marketing public relations	0.469 (1)			Publicity	0.436 (1)
						Press relations	0.288 (2)
						Corporate communication	0.276 (3)
						Exclusive distribution	0.326 (3)
						Selective distribution	0.332 (2)
Channel strategy	0.209 (3)	Channel model	0.129 (3)	Intensive distribution	0.342 (1)		
				Selection	0.519 (1)		
				Training	0.199 (2)		
		Channel management	0.622 (1)			Motivation	0.143 (3)
						Assessment	0.139 (4)
						Agency recommendation	0.174 (3)
						Directory search	0.306 (1)
						Spot display	0.116 (5)
						International exhibition	0.264 (2)
						Direct calls	0.140 (4)

Source: Primary and computed data

OVERALL ANALYSIS OF CO-BRANDING STRATEGY MODEL FOR FAUCET INDUSTRY

After organizing the weight values of the various elements discussed above, this study determined an overall analysis regarding the co-branding strategy model. The results appear in Table 2. Ranking the twelve sub-factors by weight values, “value proposition” has the highest weight value (0.155), followed by “safeguard system” (0.154). The difference in weight values between the two criteria is minor. The two criteria have basically equal importance. The next sub-factors in the ranking are “brand positioning” (0.140), “channel management” (0.130) and “brand identity” (0.130). These five sub-factors have weight values above 0.1. The difference between weight values of these five sub-factors is also small. Furthermore, the sum of weight values for these five sub-factors makes up 70% of the total weight values for all sub-factors. In contrast, the other seven remaining sub-factors have weight values less than 0.1. These seven sub-factors also have much higher differences in their weight values, compared to the difference in weight values for the other five sub-factors. These results confirm that the five sub-factors with the highest weight values are the main critical success factors for the co-branding strategy model. Faucet firms need to focus on the five tactics of value proposition, safeguard system, brand positioning, channel management and brand identity to plan appropriately, execute solidly, assess effectively and review regularly. In particular, three of the five sub-factors belong to the “brand strategy” factor. This show brand strategy is the most important critical strategy for the co-branding strategy model. Co-branding combines the capabilities of the individual faucet firms to create a combined and mutually-owned brand. To achieve synergy that reflects one plus one greater than two, the implementation of co-branding requires the partner firms to first consider the direction of their brand strategy. Thus, faucet firms need to organize their respective viewpoints to reach consensus as well as formulate a correct and complete brand strategy.

This study also ranks the forty-three criteria by their weight values. As shown in Table II, the first ten criteria with the highest weight values are: "patent application" (0.085), "emotional benefit" (0.084), "selection" (0.067), "brand image" (0.060), "quality" (0.057), "protection mechanism" (0.051), "self-expressive benefit" (0.044), "attributes" (0.043), "competitors" (0.040) and "brand culture" (0.036). The sum of the weight values for these top ten criteria make up nearly 60% of the total weight values for all criteria. This result shows the critical position of those ten criteria. Among those ten criteria, "patent application" and "emotional benefit" have comparable weight values. The weight values of those two criteria are significantly higher than the weight values of the remaining eight criteria. The phenomena indicate that firms should pay particular attention to protection mechanism for their intellectual property and the communication of emotional value for the new combined brand when they implement co-branding. Furthermore, among these top ten criteria, seven criteria belong to the three sub-factors of "brand identity", "value proposition" and "brand positioning". In turn, the three sub-factors all belong to the "brand strategy" factor. This fact reflects the critical importance of brand strategy. The brand strategy for the new combined brand needs to emphasize the building of a positive brand culture and brand image, effective communicating of emotional and self-expressive values to the customer, and defining a clear position for brand attributes, quality and competitors.

TABLE 2: THE PRIORITY WEIGHTS AT OVERALL ANALYSIS

Factors	Sub-factors	Weights (Ranking)	Criteria	Weights (Ranking)
Network relationship	Safeguard system	0.154 (2)	Patent application	0.085 (1)
			Protection mechanism	0.051 (6)
			Exit mechanism	0.018 (18)
	Information sharing	0.050 (8)	Sales forecast	0.006 (35)
			Technical information	0.014 (25)
			Joint planning	0.025 (15)
			Sales review	0.005 (37)
	Fit assessment	0.045 (9)	Product fit	0.017 (20)
			Brand fit	0.028 (12)
			Brand personality	0.033 (11)
Brand strategy	Brand identity	0.130 (4)	Brand culture	0.036 (10)
			Brand image	0.060 (4)
	Value proposition	0.155 (1)	Functional benefit	0.027 (13)
			Emotional benefit	0.084 (2)
	Brand positioning	0.140 (3)	Self-expressive benefit	0.044 (7)
			Attributes	0.043 (8)
Marketing communication strategy	Advertisement	0.029 (11)	Competitors	0.040 (9)
			Quality	0.057 (5)
			TV	0.008 (32)
			Newspaper	0.004 (38)
			Magazine	0.004 (38)
			Outdoor advertising	0.003 (42)
	Sales	0.033 (10)	Internet	0.011 (27)
			Personal selling	0.007 (33)
			Direct mail	0.004 (38)
			TV direct selling	0.004 (38)
			Telemarketing	0.002 (43)
			Electronic marketing	0.016 (21)
			Marketing public relations	0.055 (6)
Press relations	0.016 (21)			
Channel strategy	Channel model	0.027 (12)	Corporate communication	0.015 (24)
			Exclusive distribution	0.009 (28)
			Selective distribution	0.009 (28)
	Channel management	0.130 (4)	Intensive distribution	0.009 (28)
			Selection	0.067 (3)
			Training	0.026 (14)
			Motivation	0.019 (17)
Developing channel members	0.052 (7)	Assessment	0.018 (18)	
		Agency recommendation	0.009 (28)	
		Directory search	0.016 (21)	
		Spot display	0.006 (35)	
		International exhibition	0.014 (25)	
		Direct calls	0.007 (33)	

Source: Primary and computed data

CONCLUSIONS

Co-branding strategy is an important issue for small and medium enterprises. However, no prior studies focused on co-branding strategy model. In particular, this study is the first to examine the critical success factors for implementing co-branding strategy. The purpose of this study is to construct the framework for a multi-criteria co-branding strategy model specifically tailored to the faucet industry. The AHP approach was used to successfully find the critical success factors, which can be used as elements within the co-branding strategy model. The proposed model provides an objective and effective method to assist faucet firms in determining the relative importance of decision elements and formulating viable strategies for co-branding implementation. Accordingly, this study contributes the following suggestions to the faucet industry and the field of co-branding.

First, the faucet industry in Taiwan has already formed a complete industrial cluster, including plants for peripheral accessories, plants for parts, plants for electroplating, and other supporting value-added processes. The firms in this industry have tight relationships with one another and possess a solid foundation of interdependence and trust. These advantages intensified the clustering of this industry and build a favorable base for implementing co-branding. Even though those advantages are beneficial to the implementation of co-branding, combining the individual brands of firms into a new one still raises complex concerns. Thus, building a system for protecting the rights and interests of all faucet firms becomes particularly important. Firms can only cooperate and implement co-branding effectively under conditions, which are protective of their rights and interests. The safeguard system should include patent application, protection mechanism, and exit mechanism. Among these, patent application is especially important. Through the protection provided by patent application, alliance firms can protect their respective core technologies effectively and reduce the risk of losing their intellectual property. In other words, once the technologies of each firm are protected by patents, the firms no longer need to be concerned with the risk of losing their core technologies due to infringement, misappropriation, theft and so on, because a protective mechanism has already been built for the firms.

Next, according to the analytical results, whether the results were analyzed from the perspective of the three hierarchical structures at the factor, sub-factor, and criteria levels; or from the perspective of overall analysis, the results all indicate that brand strategy, as well as its sub-factors and criteria, are the critical success factors for implementation of co-branding. Therefore, firms need to formulate a feasible branding strategy for the new combined brand in order to build brand awareness, convey brand image, and create brand differentiation. The brand strategy for the new combined brand should include the three dimensions of brand identity, value proposition, and brand positioning. In the area of brand identity, because the combined brand is the symbol for an entirely new brand, each firm should combine words, imagery, ideas and customer perception of existing faucet brands to form a combined new brand specific to the faucet industry and build a new high-value brand identity based on the foundation of its respective existing brand. Specifically, firms can combine the history, stories, spirit of the faucet industry; allow the new combined brand to reflect those characteristics, form a unique brand culture for faucets, and build a specialized brand personality and brand image.

As far as value proposition is concerned, the results demonstrate that emotional benefit and self-expressive benefit are more important than functional benefit. This means faucet products no longer only play the role of a common necessity for consumers; faucet products have been elevated to high-quality goods reflecting high-level characteristics such as quality of life, sense of aesthetics, and individuality. Thus, the new combined faucet brand needs to emphasize innovation, design and function in order to strive for excellent product attributes and communicate a high-level brand value. Regarding brand positioning, firms should emphasize product quality for the new combined brand. Firms not only have to meet the basic demand of quality as reliability, but also need to seek the goal of quality as excellence. A product is said to have achieved quality as excellence when customers perceive that the attributes of the product provide them with higher utility than the attributes of products sold by rivals (Hill and Jones, 2010). Therefore, firms must make sure that their product distinguishes itself in terms of attributes such as design, style, value, uniqueness, function and service; so that the product can clearly show the difference between itself and competing products.

Finally, the results indicate that effective managing of the channel system is an important element of the co-branding strategy model. Hence, it is very important to build an effective channel management system, including the selection of channel members, incentive of channel firms, and assessment of channel performance. Among these criteria, selection of channel members is the most one. Whether the essential qualities of the channel members are positive or negative influences the success of the new combined brand. Alliance firms need to thoroughly investigate their channel members and examine the reputation, performance, financial soundness, willingness to cooperate, and other characteristics of channel members to select high-quality channel members. Furthermore, with the development of information technology, the Internet has become an important channel. The results of this study show that the Internet, as a new marketing channel, possesses significant importance. In particular, through electronic marketing, firms can bypass complex and redundant channel levels. Although utilizing the Internet as a platform for conducting transactions can effectively reduce overhead cost, firms have to build complete protection procedures to ensure the security and confidentiality of transactions. Therefore, the Internet also has become a critical platform and channel for implementing co-branding.

With respect to future research, this study expects there will be additional solid research extending this model or exploring related issues of co-branding as soon as possible. For instance, the proposed hierarchical strategy model can be further refined and applied to other industries in order to compare whether different industries have differing critical success factors, and how the level of importance for those critical success factors may vary from one industry to another.

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