I. INTRODUCTION

According to the statistical data derived from the web information company, Alexa [1], Facebook has outranked YouTube to become the second popular website in the world. In Taiwan, due to the famous online game, Happy Farm, Facebook also became a fad in each level of the society in 2008. However, Facebook is not just a kind of platform for online games, but in essence, a powerful social tool. Many firms have recognized that it is a great chance to communicate with their customers through this platform, i.e. conducting social media marketing on Facebook. Social media marketing refers to the process that through social media sites, on the one hand, readers are attracted to the content created by the members of their social network, and on the other hand, readers are encouraged to create attractive content to share within their social networks [2].

There are many benefits for firms to conduct social media marketing, including getting in touch with customers at any time, targeting more specific customer segment, elevating the loyalty of customers toward brands or products, and increasing the satisfaction of customers. From early bulletin board system (BBS) and online forum to recent blog, Twitter, Plurk, and Facebook, it becomes a trend toward communicating, interacting, and building relationship online. These social media websites not only provide a platform for interacting with others, but also offer customary personal space to individual users. In addition, interaction with others in various virtual communities changes the lifestyle of many people, who, beyond the limitation of time and places, can fulfill their desires for information and interpersonal relationship, which may not be satisfied in their real life. That is part of reasons that more and more people depend on Internet, even to the degree of addiction.

With the attributes of virtual communities, Internet users have strong motives to participate the activities within communities. A usual participant of Facebook not only easily stays on it for a long time, but also logs on to it again and again, with high rate of revisiting. For the firm, this situation does represent high commercial value. Before appearance of Facebook, online users have already had certain understanding about some specific websites with some specific main functions and developed certain behavior models to use these websites. Therefore, at the outset, Facebook integrates almost all these frequent functions, e.g., photo album, message, comment, chat room, little online game, etc., so online users are attracted to its abundant content instantly. Moreover, with the increase of the nearby relatives and friends becoming members of Facebook, it gradually forms a pressure to have to also join the Facebook or online users may know nothing about and can not interact with their nearby relatives and friends.

In 2007, Facebook presented the latest feature, Pages, which were also called as fan clubs or fan pages unofficially. From the exterior of Facebook Pages, it is almost no difference with individual Facebook Profile. However, in essence, the biggest discrepancy is that Profile is only for individuals and Pages are for business. Business Pages can not invite friends so they do not have friends list. Nevertheless, they can invite fans and maintain fans list, while Facebook Profile is meant to represent a single individual and can not be applied for under the name of organizations [3]. So brand, product, organization, public figure, movie star, etc. can register their Facebook Pages to form fan clubs. The supervisor of fan club can use various tools to manage the number of fans, to issue the news, and again, with high rate of revisiting. For Facebook
Pages or fan clubs, the most important property is the cohesiveness of this community, which is also the crucial factor for the stabilization and growth of the community.

In this study, the cohesiveness will be the central construct. We will use members of Facebook Pages as our subjects and further investigate whether the brand image, web quality, and trust of fans will affect cohesiveness and whether cohesiveness will further affect the sense of community.

II. LITERATURE REVIEWS

A. Virtual Community

The earliest forming of virtual community can trace back to around 1985. In the neighbors of San Francisco, many favorites of information technology grouped together spontaneously to exchange and share interesting information through network. Gradually, people in the enterprise started to form its own specific communities to issue information and interact with employees and customers, whereas other non-commercial Internet users also began to form various virtual communities based on their specific common interests. Therefore, virtual communities can be roughly categorized into commercial and non-commercial sectors.

Different from general substantial communities, virtual communities are based on online networks. The members of virtual communities may not see each other in reality and could be far away from each other. However, they still can use virtual communities as media and communicate their ideas with common values [4]. Although virtual communities contain attributes of complex social networks and complicated information technologies, in a well-established virtual community, users can easily understand its social information system, obtain commitments from other members, and receive real-time responds through assorted models of interaction [5]. Lee, Vogel, and Limayem [6] set forth four main concepts about virtual communities, i.e., existing in cyberspace, applying computer-based information technology, linking by communication and interaction, and forming long-term relationship spontaneously.

Facebook claims that the Pages are open profiles where you can share real-time movement and information about products or services with other Facebook accounts. The users can promote or increase the reputation of a company, non-profit club, or even users themselves on Pages, through sharing information and building relationship with other “fans”. Sysomos [7] analyzed the behavior of usage of almost 600 thousands users of Facebook Pages and found out that 0.76% of Pages had over 100 thousands fans, 0.05% over 1 million, each Page had average 4,596 fans, the supervisor of each Page would write an article average each 15.7 days, and the most popular type of Pages was nonprofit organization (NPO). From these data, Facebook Pages are indeed a growing platform for the freelance, NPO, or firms, able to communicate with their clients and customers.

B. Sense of Community

Facebook Pages are a kind of virtual community, where Internet users interact, communicate, and share information, by which the sense of community gradually emerges. McMillan and Chavis [8], putting forth the concept of sense of community (SOC), argued that in a community, the main reason for people to cooperate, have sense of cohesiveness, and entice others to join the same community was due to the sense of community, so they defined SOC as the emotion and feeling of coexistence and belonging owned by the members, who shared common objectives and belief and reach mutual commitment and satisfaction, in the same organization or surrounding. Koh and Kim [9] contended that the sense of community represented aggregated and sublimed individual feelings or members’ knowledge, so the sense of community also completely reflected the psychological status of members facing the whole community. It is difficult to evaluate the sense of community because this sense belongs to one of the inner feelings. Therefore, McMillan and Chavis [8] put forward four dimensions for understanding the concept of SOC, i.e., membership, influence, integration and fulfillment of needs, and shared emotional connection, respectively.

The sense of virtual community (SOVC) was proposed by Blanchard and Markus [10], who contended that SOVC was a kind of belonging and connecting, succeeding the concept of SOC. When a group had no sense of virtual community, this group was only a social group or virtual settlements, not virtual community. Meanwhile, it must be through the mediation of some social mechanism, e.g. social norms, and the sense of virtual community then existed. Blanchard and Markus [10] also pointed out that the involvers behaving actively in the virtual community might have higher level of SOVC. In addition, they found out six dimensions of SOVC would influence the behavior of members in the virtual community, i.e., recognition, identification, support, relationship, emotional attachment, and obligation, respectively. Comparing with SOC and SOVC, their contents are similar but SOVC does not have the dimension of influence as SOC. It is because members in virtual community are more difficult to understand and learn from each other more deeply and further contact with members in substantial community in reality. Therefore, the influence of virtual community toward its members will be weaker than the influence of substantial community.

C. Brand Image

Gardner and Levy [11] pointed out that there were five aspects of brand image, including the names, formal definitions, components, measurements, and factors about creation, formulation, and manipulability of brand image. They also argued that the symbol of brand image would affect the identity and self-esteem of a customer. Most brand images were projected through symbols, which are specific designs for transmitting the idea of a product or corporation. Dugree and Stuart [12] contended that the brand image was a kind of meaningful profile and was affected by past consuming experience, marketing activity, recognition for the brand, corporate reputation, and so on.
Most researches define brand image as an abstract concept formulated through marketing activities and subjective and emotional interpretation held by consumers [13]. Keller [14] defined brand image as perceptions about a brand, and these perceptions were reflected by the brand associations existed in the memory of a consumer. Brand associations in memory appeared as the form of other information nodes beyond the “brand nodes”. Brand associations could be measured by different dimensions of favorability, strength, and uniqueness and would affect the consumer’s decision making.

Rare previous researches suggested the direct relationship between brand image and trust. Flavian and Guinaliu [15] in the study for the context of Internet banking suggested that the brand images, which were reflected as, for example, reputation and perceived usefulness, were related positively to the trust. In facing a variety of Internet banks with different features, the novice might depend on the brand image, e.g. reputation and perceived usefulness, of this Internet bank to increase the trust toward it and further chose to adopt its service. McKnight and Chervany [16] also discussed the relationship between reputation building and trust. They claimed that the vendor might use advertisement to increase its good reputation and further to induce purchasing behaviors. When the reputation, treated as brand image, of the vendor improved, the trust and belief of its customers toward the vendor also improved.

Park, Jaworski and MacInnis [17] reviewed the literature of consumer behavior and concluded three distinct sets of consumer needs that managers could utilize to develop brand images for their products or services, i.e. functional (e.g., problem prevention and problem removal), symbolic (e.g., group membership and role enhancement), and sensory (e.g., stimulation, variety, and novelty) needs. When customers could satisfy their distinct aspects of needs through the image provoked by the brand, they would begin to have trust toward this brand and toward the product, service, individual, or firm behind this brand. Besides, with different cycles or levels of product or service, the degree of trust of customers toward product or service was also different. For virtual community, its excellent brand image may be the first and biggest reasons for novices to begin involving the interaction within the community even though these novices still can not totally trust the content issued by its manager and other members. However, after involving and delving for a long time, gradually, the user will trust this community and have the sense of cohesiveness through the interaction with other members in this community. Many famous corporations such as Nike and Apple both attract a lot of fans in their Facebook Pages. The company, using the Pages as their main tool of Internet marketing, will combine the Pages and its official homepage or other web pages for specific activities in order to elevate its reputation and increase the number of its members in its relevant virtual community. These kinds of companies usually will try their best to solve the problems of their customers and try to increase the trust and the sense of cohesiveness of their customers. Therefore, the following hypotheses will be put forth:

- H1: When the brand image is better, the user will more trust the community.
- H2: When the brand image is better, the sense of cohesiveness will be higher.

D. Web Quality

Hwang and Kim [18] deemed that the excellence of web quality was derived from the perception of users about whether the functions of this website were able to satisfy the needs of users. The quality and content of the website not only affected the perception and usage behavior of the users, but also affected their feeling and emotional responses. In another words, if a company wants to provide high quality of website to its customers, it should emphasize which information it provides to customers and how they use these information.

For confirming the factors associated with the success of websites, Liu and Arnett [19] developed four main constructs to measure the design quality of the website, i.e., information and service quality, playfulness, system use, and system design quality, respectively. A company can manipulate the appearance of webpage, layout, graphical structures, content, etc., following the principles of above four constructs, to control the web quality, which will affect the trust and sense of cohesiveness of the members in the virtual community. Among these manipulated elements, the content of website is the most critical factor. If the website can provide enough information to users, the attractiveness of this website to and the extent of acceptance by them will increase [20]. To the topic of this study, Facebook Pages, on which, the business company can provide abundant and real-time information to earn the trust of community members, who can use words of mouth to directly or indirectly persuade others to attend the community. With members in and the quality of the virtual community increasing, the chance for them to interact and communicate among each other and the effectiveness of operating this community will both enlarge. In this benign cycle, the existing cohesiveness can be kept and the development of this community can have growing progress.

Another element included in the dimension of system use is ease of use, which can lower the threshold for beginners to enter this community. Such as the interface of Facebook Pages, it is not so complicated that relevant functions and information can be found out and operated easily according to its layouts and configuration of the webpage. Other elements such like customer services and privacy policies, included in the dimensions of service quality and system use respectively, both will affect the attitude toward and the trust of the usage of this website [18]. Concluding aforementioned inferences, the part a business organization can control and manipulate the most is the web quality. The company can manage and stimulate the interaction and the amount of interaction by controlling the timing and content of the announcement about new activities or information. For a business organization, the purpose of these endeavors is to provide uninterrupted attractiveness to its members and further increase their trust and sense of cohesiveness so the following hypotheses are proposed:
• H3: When the web quality is higher, the user will more trust the community.
• H4: When the web quality is higher, the sense of cohesiveness will be higher.

E. Trust

The object to be trusted could be an individual or a group, including oneself, family, neighbors, clubs or even governments. The trust relationship built based on or mediated through the information technology can be treated as one of formal social relationships. Some studies contended that the information technology had no thinking disposition so the object mediated by the information technology was not the real object to be trusted. However, even though the information technology has no thinking disposition, this social relationship does exist. When a user faces a website, or in other words, the object to be trusted is a website, the scene behind the website in fact could be the salesperson or corporation service in reality. Besides, this website is not just the interface of website, but consists of professional Internet skills, Internet experience of users, and various interactions.

Corritore [21] defined online trust as a self-confident attitude that online users believed that their personal information would not be stolen and misused under the status with certain risk online. In his opinion, risk and uncertainty taking during the process of decision were the most important parts about the trust. Tallon, Kraemer, and Gurbaxani [22] suggested that the trust of customers could increase through open communication, cooperation, information sharing, satisfaction, and commitment. Castelfranchi and Tan [23] indicated that the e-commerce without trust was impossible to proceed. The biggest reason why customers and firm could not conduct interaction was due to lacking trust and in other words, both sides should bear the risks of being cheated in order to continue their interaction. Lander, Purvis, McCray, and Leigh [24] pointed out that the trust between customers and the firm was a dynamic process which affected customers’ satisfaction dramatically. The stakeholders also played a critical role in the process of building trust. A customer without related professional knowledge or experience would rely on the judgment observed from the stakeholders, who hence might affect the development of trust toward the firm. Gellner [25] discussed the relationships among trust, cohesion, and social order and believed that the social cohesion represented a kind of effective trust, which was one of the sources of cohesion. A group with cohesion implied that the people within the group trusted each other.

In virtual community, trust will replace the role of subjective norms and cause members to interact more openly and vehemently [26]. Nevertheless, some features of virtual community will hinder trust from developing. For instance, members in virtual community usually are short of vis-à-vis interaction and visional implication so it is very easy to fabricate information to cheat others. Therefore, the dimensions of trust emphasized in this study will be perceived responsiveness, confiding personal information, and disposition to trust, respectively.

If members in the virtual community can trust each other, the interaction will become more and more intense. On the contrary, lack of trust, members will not have intention to interact, communicate, and share information with each other. This situation of distrust will gradually damage all previous investment about building this community and ruin any possibility to increase the cohesiveness among members. McMahan and Chavis [8] discovered that trust could mitigate members’ senses of anxiety and insecurity in a community. Additional, they also found that raising the trust among members and creating their equities could elevate the sense of community and belonging, both of which would increase the cohesiveness of a community. In the context of virtual community, Koh and Kim [9] argued that the members of virtual community could recognize each other more through the activities in reality. With the assistance from this substantial interaction in reality, plus online interaction afterward, the relationships among members would become closer, more trustful, and more cohesive.

In a virtual community full of trust, the sense of community of members will become more consolidated and their loyalty and sense of cohesiveness also higher. Kim, Lee, and Hiemstra [27] considered that the sense of community was a concept about emotional aspect, including trust, belonging, and spirit of common experience and common shared benefit. The sense of community of each member would increase through exchange of support, creation of identities, and making of identification [10]. Most previous studies used substantial community, interacting through various activities in real world, as the context of study. It should be considered the feasibility of the inference from the results of previous studies to current study about virtual community. The effect of members’ trust toward the senses of community and cohesiveness may be discrepant in these two contexts although Blanchard and Markus [10] contended that they were indifferent. Despite of this concern, in this study, where the users of Facebook Pages as the subjects, the following hypotheses are still set forth:

• H5: The trust of members in virtual community is related positively to the sense of community.
• H6: The trust of members in virtual community is related positively to the sense of cohesiveness.

F. Cohesiveness

Most previous studies discussed cohesiveness from the perspective of social psychology and treated cohesiveness as a psychological related index. The results of these studies also revealed that cohesiveness was related positively with social economic factors but not with genders. Besides, cohesiveness was also related positively with responsibility and identification. In general substantial community, cohesiveness is rather stable, but it will not exist unless this community has certain size [28]. Gellner [25] supplemented and contended that the cohesiveness would not exist without proper design for and creation within the community. From some perspective, the cohesiveness similar to belief or religion would become a threat to ethical codes. He also pointed out that on average, people living in urban had lower cohesiveness, and since mutual trust was the foundation of
cohesiveness, the degree of their mutual trust was also rather low.

Cartwright and Zander [29] defined cohesiveness as the attraction making members to stay in this community according to their individual requirement. Cohesiveness derives from attraction of the community itself and attraction of the members within the community [30]. In the field of organization behavior, cohesiveness has been deemed as the critical component, which is the objective or value for members and organizational commitment [31]. Yoo and Alavi [32] then contended that the cohesiveness was related positively with the sense of social existence and task participation. For members, the attraction of the community was its psychological power to connect these members. Social environment might be another critical factor to affect the cohesiveness and objective, with both of which in mind of members, any problems about organization could be conquered more easily. The organizations which are mentioned about cohesiveness the most included military units, sport teams, medical groups, etc. because these organizations usually emphasize the importance of consolidation. The concept of cohesiveness is just the strength to stick members together, plus other concepts such as emotional connection, consolidation, compromise, commitment, and so forth.

The concepts related to social background, e.g. self benefit, social hierarchy, cultural difference, asymmetric relationship, etc. all will affect the cohesiveness and common objectives in an organization. Besides, the effectiveness of cohesiveness in an organization has its specific range, beyond which, the members may not keep helping each other. Similarly, an organization lacking cohesiveness usually lacks the spirit of group cooperation at the same time. The politic relationship inside an organization also will affect its cohesiveness. Mukherji, Wright, and Mukherji [33] confirmed that high level of politic maneuver within an organization was related negatively to the cohesiveness and the common objectives cross different departments. Seo, Green, Ko, Schenewark, and Lee [34] also suggested that a networks platform could strengthen its commitment and attitude to produce powerful cohesiveness. The cohesiveness in the virtual community could provide its members opportunities to interact and form some specific relationships through their support toward this community. These members using various functions embedded in this virtual community website not only could share personal experience, information, and idea to others but also could require knowledge from others.

Pavitt [35] contended that group cohesiveness could be categorized into two types, i.e., maintenance-based cohesiveness and task-based cohesiveness [35]. There were three factors influencing maintenance-based cohesiveness, i.e., liking, identification with the group, and psychological needs, respectively. The manager of community could use the status of linking, compliment, interaction among members, and similarity to measure the level of liking. The cohesiveness in a community could maintain if members in this community could like each other. Even though the member did not like each other, through identification with this community, the member would further indentify with other members and increase cohesiveness. As the factor of psychological needs, members usually had desires of status of power and knowledge sharing, and the community could just fulfill the needs of its members, keeping the maintenance-based cohesiveness in this community from disappearing. In contrast, there were also three factors influencing task-based cohesiveness, i.e. group goals, personal goals, and attraction to group activities. In this perspective, the task could be deemed as the common target of all members or the attraction of community activities.

For a virtual community, it can only prosper by both retaining its extant members and enticing more new members. Its success depends on ever-growing attraction, i.e. cohesiveness, of this community. The cohesiveness also has positive influence to the group satisfaction and loyalty and can boost members’ positive attitude. For individual members, their intention to involve this community will be affected by the attitude of, cohesiveness of, and interaction with other members. About commitment, according to previous studies, cohesiveness was positively related with the development of commitment but this relationship was not causal, only related. Both cohesiveness and commitment could explain most parts of attitude and intention of online members [34]. Applying the contention of Pavitt [35], the degree of cohesiveness in a virtual community also depends on individual or group goals, identification, liking, and so on. When a community is with strong cohesiveness, it can entice more members and the interaction within this community can become more vehement, no matter from the perspective of maintenance-base or task-based.

Since cohesiveness represents the subjective consciousness and psychological strength of members toward the community, the consolidation within the group will be stronger and the sense of community will be easier to emerge if the degrees of cohesiveness and interaction are higher. Comparing cohesiveness with the sense of community, the former is the key for community to form whereas the latter is the key to maintain and grow. Without maintaining and growing, the community will be dissolving and decomposing gradually. Therefore, the following hypotheses will be set forth according to previous inference:

- H7: The cohesiveness in virtual community is related positively to the sense of community.

G. Conclusion

Previous studies about Facebook focus more on the discussion about privacy and safety, and are concerned less about the reasons why it becomes a fad for many business organizations to set up their own Facebook Pages. Hence, the main purpose of this study is to check which constructs contribute the cohesiveness of Pages. For the managers of business organizations and supervisors of their Pages, from this study, they may understand the benefit, no matter to the customers or to the firm itself, to set up and operate a virtual community, and may also understand the most critical factors to maintain and grow a virtual community. According to the proposed aforementioned hypotheses, the research framework of this study is presented as Figure 1. It is
believed that brand image and web quality are related positively to both the trust and cohesiveness, the trust is related positively to both the cohesiveness and the sense of community, and finally the cohesiveness is related positively to the sense of community.

![Figure 1. The research framework of this study](image-url)

### REFERENCES


