A Qualitative Study of the Role of Social Media in the Construction Industry

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Abstract: *Social media conversational and digital technology have redefined the communication landscape between consumers and the providers of goods and services. It has created a conversational dual carriageway among all interest groups. Increasingly, organizations and corporations are participating in the social media conversation for some good reasons: to engage customers and to get business in creative ways. The goal of this study was to assess the role of social media in the construction industry, considering that consumers are increasingly influenced by social media information. To acquire qualitative information, oral interviews were conducted. Participants were from four major construction companies operating in Southern to Midwestern states (Carolinas to Arizona and Hawaii) in the United States of America. The results acknowledged industries' increased awareness of the influence of social media on the consumers. According to the study, industries that engaged their audiences on social media were banking on the optimism of social media audience, business, and information reachadvantages and ability to build community of social network at affordable cost. Also, it was found that construction industry is not actively participating in the social media conversation like many other industries. Many actors in the industry decided to stay aloof because they believe that social media conversation is a double-edged sword and very dangerous.*
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I. Introduction

The importance of communication and team collaboration in project, product, and service delivery cannot be over emphasized enough [1,2]. Just as the thumb is very important and indispensable in making a sound finger snap, so is communication in a successful project execution and delivery. Stressing the importance of communication and information sharing in an organization, for instance, the researchers argued that during all phases of project lifecycle that good communication is an important success factor that connects all the other factors of project success [2]. Based on this, there is the need to study the role social media play in the construction industry to foster communication with its stakeholders and the general public. This study dealt with the role of social media and its influence on the overall project initiation, execution, and delivery.

Purpose of the Study

Based on the number of social media users, the trend is showing the triangulation and convergence of multitudes of consumers at the social media sites—Social media junction. Social media sites are becoming an ideal place to advertise products and services by all interest groups [3]. Thus, the purpose of this study was to assess the role that social media play in the construction industry. This study focused on different stages of project delivery and assessed the role and/or influence of social media on project execution and delivery. The awareness of the influence of social media could enable construction industries make economic decisions on whether to invest their resources and energy on its adoption.

Objectives of the Study

The objective of this qualitative and exploratory study was to assess the role of social media in the construction industry. Specifically, the study was conducted to investigate the influence that social media technology has on the overall day-to-day decision making processes in the construction industry. This study also focused on how construction companies use social media to collaborate—connect and engage their customers, and share information across all interest groups.

II. Literature Review

Despite the contributions of construction industry to humanity's day-to-day existence and the role the industry plays in the world economy, one would likely assume that the industry would be engaging applicable or implementable technological advancement to enhance their products and services. This consideration and assumption are in line with the large number of employment workforce and amount of money involved in the industry. In another documented paper on the Engineering News and Record (ENR) website titled Social Media Risks and Rewards in Construction the author stated that:

The Society for Marketing Professional Services in an August 2011 white paper called "The client's use of social media and social networking," authors Holly Bolton, director of marketing for CE Solutions; Adam Kilbourne, director of marketing for Tec Inc. Engineering and Design; and Dana Galvin, communications director for construction firm Barton Malow, sought the opinions of more than 1,600 members and received 160 completed responses. They found social media is being used by only 36 percent of engineering firms, 24 percent of architecture companies and 17 percent of construction and landscape design offices [4].

Social Media: Tool to Connect and Engage Customers

According to a review, social media interactive technology is for engagement, willful expression and exchange of ideas, and opinions on a limitless time basis (24/7) [5,6]. This dramatic and dynamic shift from traditional method of business audience reach is of intrinsic value to companies' future and existence in this social media age. Some customer-focused companies have capitalized on social media conversation advantage to connect with consumers in order to bring their products and services to limelight. Some writers argue that companies that are not paying particular attention to this dynamic change and shift in paradigm or are intimidated or scared of talking into this loud social megaphone may end up playing a catch-up game or left in the wander land of social obscurity and non-existence [7].

Connecting Across Employees Demographic Divide

According to the research done by JWT Corporation (James Walter Thompson _ advertising agency), Lee Hech Harrison and others confirmed that there is a social divide among workers in a workplace environment regarding their individual social media needs [8]. As corporate management encourages and plans to have a synergy of workforce/team for the success of the organization, it might be necessary to look at how stakeholders are managed across the supply-chain in the current social media information technology age. Considering the role played by stakeholders in the successful project execution and delivery, connecting across diverse age groups and cultures is very important to the success of the industry. Effective communication and engagement with diverse groups and teams are the links that will bridge the gulf created by demographic work environment, cultural diversity changes in the construction industry. Corporate management's ability to identify and provide the employees' social needs that directly or indirectly influence and shape work environment attitudes and behaviors are a plus for the organization success. These generational social needs are unique to each demographic group and not one-size that fits all as noted by Training Daily Advisor (2013, issue of February 15).

The internal stakeholders

In the construction industry the two primary stakeholders actively involved in project delivery are the internal and external stakeholders. They include employees and corporate management, subcontractors, and other partners. Managing and sharing information in the social media age is unique and entirely different from what was obtainable prior to the current conversational information technology age. Employees' conversations on the social media network are directly or indirectly affecting product design and marketing decision. However, prior the social media information technology age, employees did not have a free forum to chart and converse amongst themselves [6]. Through the use of social media and social network employees are daily involved in product and process innovation by sharing information on any difficulty situation they encountered at work and how they devised a smooth method of solving the difficulty. This might be why corporate organizations are creating internal social media or social network in the form of forum, chartroom, or discussion board [9]. The advantages of these forms of internal networking are numerous as noted by some researchers [9]. Employees can ask questions; respond to upper management information-seeking questions without intimidations. Other benefits of having internal social media are; effective time management (reduces employees and management meeting time, topics of discussion can be posted on the chartroom prior to the meeting). It also allows introvert employees to voice their concern which they may not have done in a formal meeting setting [6]. They also agreed that social media could be used for information gathering and sharing among employees [6].

External stakeholders

Construction project execution is saddled with multiple skills, diverse stakeholders, and associates during almost every phase of the project as noted above. An average construction project consists of multiple

participating subcontracting firms and associates [10]. The authors estimated that a typical ten million dollar contract project will have approximately 420 subcontractors and associates. Also they estimated that a project of this size will have about 850 participating personnel/employees, about 50 different documents, and 56,000 pages will be generated in the course of completing the project. They concluded that despite the number of involved team members in project execution, the industry still use oral, document-based and traditional web protocols.

The challenges

The introduction and use of social media technology have not only permanently altered the traditional communication route between consumers, stakeholders, public, and providers of goods and services, but have also created a unique and new dynamic in the marketplace communication protocols. The new dynamic is an all-inclusive social networking conversational loop where consumers and providers of goods and services meet in a social media village [11]. The same all-inclusive social media enticing propaganda has also affected and changed the traditional company top-bottom communication topography. The internal organizational communication terrain has become flatter, and the communication route redesigned as a social networking dual-carriage way [6]. It is believed that this new development facilitates dialogue among all the stakeholders and actors in the organization [12].

III. Methodology

This study was conducted using qualitative research method. The qualitative structure of the study was intended to integrate comprehensive perceptions, experiences, and foresight of those of the study participants. The selected participants were from notable construction companies with vast construction project and administrative experiences. Their construction project experiences ranged from three to 45 years of active participation in the construction industry. Hence, a qualitative method was deemed appropriate for this study in order to understand from the SMEs,herein referred to as study participants, the role of social media in the construction industry if any or otherwise.

Research Design

The underlining design for this study was to have an effective process of collecting, collating, analyzing/sorting data into a homogenous form for clarity. Five study participants were selected from the list of top construction companies in the industry as recorded in Engineering News and Record (ENR) with recommendations from experts in the industry. A face-to-face interview method was adopted for this study to allow the study participants a free flow of their perspectives on the subject matter through open ended questions.

IV. Results

The interview questions were grouped into two segments; biographical and the study-probing questions to understand the role of social media in the construction industry. Face-to-face interview method was used because it offered multiple opportunities to finding answers to the questions. Also it allowed the researcher to listen to the study participants and read their body language, which might pompt follow-up questions. The following pseudonyms names were assigned to the study participants to conceal their true identity. The participants names were Tommie, Johnson, Scalcione, Orjison, and Washeed for the first, second, third, fourth, and fifth participant respectively.

Biographical Information

The following table shows the summary of the responses for the biographical information. The questions were paraphrased to fit into the available cell spaces in the Table 1 below.

Table 1. Summary of Biographical Information

Biographic Information	Tommie	Johnson &Scalcione	Orjison	Washeed
Role in the organization	Director of business	Quality Control	Vice president of operations	Vice president, Education Unit
Years of Experience	18 years	5 years	45 years	20 years

Annual Volume of projects	$ 150 million	No response	$ 950 million	$ 200 million
Average number of employees	response	No response	900 (salaried & casual) employees	130 employees
Company Locations	North Carolina & Virginia	District of Columbia, California, Guam/Hawaii, Arizona, Texas	North Carolina, Tennessee, Ohio, Indiana, Kentucky	North Carolina, South Carolina, Georgia, Tennessee, Virginia

Responses to Research Questions

Question # 1: What do you perceive to be the role of social media in industrial organization?

The first participant, Tommie, serves as the "Director of Business Development and Training" in his company. He believes that social media has some roles to play in an organization. But he however, said that social media plays much role in the retail industry than in the construction industry. The second and third participants Johnson and Scalcione hold the "Quality Control Manager" and "Community Development" positions respectively in the same company. Both of them offered responses to the interview questions together via written response to the interview questions. In their own words they said that, "The role of social media is a very important in any business this day and age. Whether it is advertising, marketing, sharing, or informing, using social media as a communication tool is very valuable." The next participant Orjison, is the vice President and Regional leader of his company. His belief is that social media has lots of positive roles to play in an organization. He praised the invention of Facebook and LinkedIn and commended social media "information transfer ability". He contended that he sees more construction company employees use LinkedIn more often than other social media sites. He highlighted that corporate management policy as possible reason why construction company employees use LinkedIn social media site more often than other social media sites. To the next participant Mr. Washeed, oversees the "Education and Training Unit" of his company, sounded very optimistic about the role of social media in an industry. However, he had words of caution at the same time to those involved in social media conversation. In his words, "You have to be very, very cautious because not all the messages on the social media are true."

Question # 2: What do you perceive to be the role of social media in the construction industry in reference to creative innovation and change?

Tommie narrated that his company has Twitter and Facebook accounts but these social media profiles are not used or are sparingly used by the employees of their company for communication only. But, he said that his company uses LinkedIn for contact information only, and that is it and that nobody in the company is involved in social media as a corporate representative. Mr. Johnson and Mr. Scalcione, second and third participants (both are working for the same company) gave striking detail of how their company uses social media during project execution in areas where peoples' freedom of movement might be impeded because of their construction activities. They responded as follows,

When performing construction in a dense urban environment, like Washington, DC or the City of Baltimore, MD, odds are the construction site will be near a residential area. [Our company] believes being a good neighbor includes being transparent with the members of the community that live in close proximity to the site. Therefore social media is used to communicate early/late work hours, street closures and changes, noise disturbances, etc. to keep the community involved with what is going on in their back yard.

Orjison sounded different from the two most previous participants on how his company uses social media. He acknowledged that his company uses blogs and twitter to "post stuff." When asked further on what he meant by post stuff he politely avoided the question by saying that he is not an expert in those areas, but maintained that there is somebody in charge of posting and monitoring what is posted on the social media sites. He indicated that his company does not use social media for mass media publicity because his company is privately owned and as such they are not required by law to do that. On the same question Washeed noted that his company uses social media mainly as press release tool on what the company is doing. Some of the things that the company will use social media to publicize are things like scholarship foundation for students and other activities of charity he added. He however added that his company does not use Facebook. When asked why does not his company use Facebook? He simply responded that it is just management policy, but concluded that Facebook could be used in the near future.

Question # 2a: Do you have web-care division in your company?

A follow-up question was asked if the study participants have a web-care division in their respective companies. On this follow-up question, Tommie's response was in line with his response earlier. He maintained that his company does not have a web-care division because they only use LinkedIn for contacts information only and that they are not involved in social media conversation and that's why the company does not encourage employees to use social media. The second and third study participant (Johnson and Scalcione) reiterated that their company

has a web-care unit (project representative) that is localized just to a single construction site and not companywide; saying that the company has multiple reps for different work unit. A different view came from Orjison, he commented that his company has a web-care division and there is personnel assigned to monitor, post, and tweet information on the social media. On the other hand, he did not name any particular topic that his company discusses on the social media sites when he was asked to. Washeed also followed the path of Orjison that his company has web-care division that was housed in the company's Marketing Unit. He concluded that he does not know much of what they do because he is not an expert in that area.

Question # 2c: What are the impacts of social media in the construction industry?

This follow-up question was to find out the impact of social media positively or otherwise in the construction industry. Tommie, Johnson, and Scalcione individually maintained that there is no impact that they know of, while Orjison said "not really; nothing comes to mind." Washeed disagreed significantly from others on the impact of social media in the construction industry. He said that social media has many positive sides to it. He outlined the positives as magnifying company's name, and aid communication in many ways. He concluded that the age of formal letter writing is almost over among construction workers and that social media communication system is taking over gradually.

Question # 3: How is social media used in group communication?

On using social media for group communication among employees, subcontractor, and client, Tommie supposed that his company does not use social media for group communication; he emphasized that there is no particular reason. The second and third participants in this study, Johnson and Scalcione did not acknowledge using social media for group communication either. The two technocrats (Johnson and Scalcione) said that social media do not play any role in their company connecting with employees. They also believe that social media do not play any role in their company's response to request for proposal (RFP). Orjison acknowledged that his company uses social media to communicate with their internal stakeholders and customers. He said that his company has corporate (internal) YouTube that serves the interest of internal stakeholders. When asked why his company decided to use their own internal YouTube, he presented a couple of reasons. According to him, one is to protect internal communication from outside audience and also to satisfy the social relationship needs in the employees in the workplace. He also said that employees are encouraged to use the corporate internal YouTube to send thank you messages, post and respond to inquiries from co-worker. On this issue Washeed slightly differed from Orjison, he said that his company only uses webinar and GoToMeeting to connect with stakeholders for conferences and meetings. His company does not use other forms of social media for communication according to him.

Question # 3a: Is Social media tool used for employee training?

While the first three study participants (Tommie, Johnson, and Scalcione) noted that their companies do not use social media for employee training, Orjison however shared different point of view. He narrated that his company uses social media for training in the form of podcast, and webinar. He said that his company also uses "Go ToMeeting" more often where trainees (employees/participants) can view the slide of the presentation from diverse locations on the computer when connected to the presenter. The trainees according to him also hear the auditory without seeing the presenter. The fifth participant, Washeed was excited that his company uses social media for employee training. In his words, "Yes, without a doubt!" He emphasized the benefits of using corporate (internal) YouTube and Twitter for employee training in his company. He echoed the advantages of this method of training; saying that employees can access the training on-the-go on their smart phones and iPad. He also shared the same perspective with Orjison on using Go ToMeeting to reach potential customers/clients. He concluded that some of his company's clients follow their blogs and conversations he maintained that the company's blogs allow them to get the word out.

Question # 4: How is social media used in crises situations (during project execution)?

Interestingly the first, second, and third study participants (Tommie, Johnson, and Scalcione) believe that social media do not play any role during conflict and crises situation. They argued that any information on the social media could be misinterpreted by the public and that could worsen the situation and wondered why internal crises and conflict should be put on the social media. On the other hand, Orjison noted that social media could play a positive role during conflict or crises situation. He however was concerned about the documentation of social media conversation. He again cautioned against using social media because according to him "people do not follow instruction." Orjison said that his company uses emails for documentation purposes and that his company does not use texting because it may not be easy to track and document. He equally held that his company does not use social media during request for proposal for a project; all proposed project information is normally posted on the company website. According to him subcontractors are selected through private invite only based on their previous contract record with them. He concluded that based on tracking and record purposes his company chose to use American Institute of Architects (AIA) documents for all business transaction in all contract circumstances including conflict and crises situations. According to Washeed, his company does not use social media during conflict or crises situation because according to him social media lacked tracking and documentation. For the above reason his company uses email only and that his company does not use texting either for the same reason.

***Que*stion # 4a: Is social media used during RFP and any other area?**

Tommie, Johnson, and Scalcione believe that social media do not play any role in their company during project request for proposal (RFP). Unwavering on their company's position on social media conversation, Johnson and Scalcione reiterated their company's belief in the effectiveness of word of mouth from repeated clientele. They said that large portion of the projects their company executes is as a result of repeated positive word of mouth, and that their company banks on this heavily for obtaining new projects. But Orjison differed from the previous three participants; according to him his company uses video presentation during project RFP. He however added that during project RFP that his company uses private invite only for hiring a subcontractor for their projects. The fifth participant, Washeed also shared the same perspective with Orjison that social media can be used during request for proposal. He highlighted that his company uses videos during presentation for a project request for proposals, adding that everything is going electronics. He was optimistic that in the near future that social media could be used for almost everything. He however was worried about the legal ramifications that will be involved, but said that he will leave that concern for the legal division to worry about.

Question # 5: What are the study participants' views relative to adoption and incorporation of mobile social network gadgets in the workplace during work hours?

On the issue of using portable social media networking gadgets on site during work hours, Tommie's response affirms his stance on the previous questions. His stance showed that his company allows things like Tablets or smartphone that has connection and access to the company's website and emails. He said that the company has website for only highly visible projects. Johnson and Scalcione also answered in affirmative that their company allows using social media networking tools on the worksite; however they insist that the use must be work related before it could be used during work hours. Orjison did not differ from the beliefs of other study participants on this issue; he was however concerned if employees will misuse those gadgets because his company has no policy on smart phone use on worksite; it is being assumed that the employees will act like grownups and will not misuse and betray the trust the company has on their judgments. Study participants had a common consensus as the fifth participant Washeed shared the same opinion that employees are allowed to use portable social media networking gadgets on the worksite provided those gadgets are to be used for official purposes only. He conteed that using those communication gadgets on site during work hours has some return on investment (ROI) because according to him it saves time. He argued that the time that would have been used to go to trailer office to look for the project plan could be used for something else because the employee will have quick access to the project plan and specification handy with his/her tablets.

Question # 6: What are the study participants' views relative to social media and ethics?

The study participants were presented with question on social media ethics in the workplace because organizations are careful not to violate any perceived ethics in the workplace. The first participant Tommie said that he did not see any concern with using social media gadgets in the workplace, but pointed out that if employees are allowed to do anything on the social media that there is the tendency of breaching official code of conduct. He concluded that since his company is not on the social media conversation that he does not know much about that. The next two participants Johnson and Scalcione affirmed that there are possibilities of the code of conduct violation when employees are allowed to be involved in social media conversation. They concluded that fear of ethics violation also contributed to their decision to stay away from social media conversation, saying that social media conversations have potential to create negative feedback and tension in the workplace. Orjison believe that there is nothing wrong with allowing employees to access social media in the workplace; but according to him "allowing employees to get entangled in social media conversation can generate negative outcome." Washeed expressed some reservations in social media conversation between employees, but he however added that his company does not micromanage their employees.

Question # 6b: Is social media used during employee selection?

A follow up to the question above; the participants were asked about their view of the role social media during prospective employee selection. Tommie maintained his belief that social media do not play any role during employee section in his company. He said that his company does not go beyond normal check for ethics (background check) which according him has nothing to do with social media profile of the potential employee. Johnson, Scalcione, Orjison, and Washeed shared the same view with Tommie on this same issue, saying that their companies only conducted normal background check of potential employee without getting into the prospective employee's social media profile. Johnson and Scalcione concluded that "we do not track anybody's social media activities"

Question # 7: How is social capita/visibility created through social media?

Responding on how corporations can create social capita through social media, Tommie commented that he is not aware of his company using social media to create corporate visibility apart from using social media for public notification and press releases. Johnson and Scalcione distanced their company from getting entangled with social media conversation. They both maintained that their company wants to be off social media radar. Orjison and Washeed reasoned that their companies use social media for special announcements. Washeed gave instances

where his company employed social media as a tool to build social capita. He said that his company used social media to announce special student foundation program of $250,000.00 in Charlotte North Carolina recently.

Question # 7a: Does your organization use social media to announce annual report or promote services?

The study participants were asked if their companies use social media to announce annual report or promote company services. Four of the study participants answered that they do not use social media to announce annual report. Washeed argued that as a private company that they are not required to do that, while the first participant Tommie simply avoided this question. On the using social media to promote corporate services; laying credence to the advantages of using LinkedIn, Johnson and Scalcione narrated how their company recently started what they called "LinkedIn initiative." According to them LinkedIn initiative requires all managers to post their qualifications on the corporate profile of LinkedIn social media. When asked why posting the mangers qualifications on LinkedIn. They responded that that is a way of letting the public to know that they have qualified and competent managers in every field. Other participants were in agreement that their companies use social media to promote corporate services, but none of them expounded further even when they were asked to give detail on social media is used to promote corporate services. The only thing that stood out was that they post information on the corporate website

Question # 8: Study participants' views on effect of social media on company's performance index

Majority of the study participants do not have a notable evidence of return on investment that will encourage construction company to be involved in social media conversation. Tommie, Johnson, Scalcione, and Orjison said that there is no return on investment for their company to get actively involved in the social media conversation. However, Washeed had a different opinion. He believes that social media gadgets save time when used on workplace to promote rapid project execution; saying that time is money. But on social media conversation, he said that he has no record, but added that there is possibility of record somewhere nationally.

Question # 9: Participants' Views on Knowledge Management through Social Media

When it comes to using social media to capture and apply knowledge learnt in previous project, Tommie believes that different types of social media are helpful in knowledge management. He narrated that his company uses what he called "Bluebeam and Evernote." According to him during their weekly meeting, the attendees come to the meeting with pictures of what they encounter or problems they solved prior to the meeting. He said that these pictures and sketches normally generated healthy discussions leading to ideas of how the problem was solved or how to solve the problem if it wasn't solved yet. Sometimes a more robust approach of solving a particular problem could generate during the meeting. Johnson and Scalcione had objection and disapproval to using social media to document knowledge gained during project executions. They however, said that they use their corporate intranet to communicate from district to district among employees. Lessons learnt during project execution are shared through company "Risk Assessment Database (RAD)" and during monthly project review meetings according to them. The fourth and fifth participants Orjison and Washeed did not differ from each other in their opinions. They nonetheless said that their companies manage and share knowledge learnt internally away from the public and spying eyes of their competitors. They said that they adopted internal approach of using emails and weekly meetings. According to them during their meetings, pictures, documents and experiences were shared among the attendees as a method of information gathering and knowledge management.

V. Discussions

In this qualitative study, many similarities and differences were noted from the study participants' perceptions of the role of social media in an industry and in the construction industry in particular. The study participants believed that social media technology is a tool for communication and information sharing as supported by researchers [5,6,14,15]. They also agreed that social media have a positive role to play in the operation of an organization. The research findings were also consistent with past findings and/or reports on company's social media selection and participations. It turned out that LinkedIn social media site was the favorite of the construction industry according to the findings. This was in part according to the study participants that LinkedIn social media site has features that are construction industry friendly. The use according to the findings was mainly to get contact information of fellow contractors and associates. Beyond this, LinkedIn is only used for posting of professional qualifications of company senior managers.

As noted during the interviews, participants acknowledged using social media only for posting of information like the company's annual award and make press releases with no conversational engagement or channel for feedback from the public. This finding about construction industry using social media as press release or as a notification tool rhymed with the findings of previous researchers [4]. Lack of documentation tracking was one of the reasons why some companies in the industry decided not to use social media to connect with employees and subcontractors during project executions and delivery. Some study participants did not believe in the social media consumer conversation. They argued that they get a large portion of their projects through repeat clientele based on their past contract relationship and reputation.

Although all the study participants believed that social media has important role to play in the success of the organization; however, only two of the participants acknowledged that their company use social media for training. One of the participants said that his company uses webinar and GoToMeeting technologies to train employees. Another participant who also acknowledged that his company uses social media for training employees expounded that his company uses internal corporate YouTube and intranet.

VI. Conclusions

The study hardly found enough evidence to the contrary of the findings of previous researchers. It was noted earlier through the literature review that construction industry is lagging behind other industries in using social media. The study findings show that social media is very important to the success of an organization in this age and time. However, it was also found that the industry was actually lagging behind in using social media conversation technology. Consequently, the industry does not use social media to educate the public on the areas of their specialties, apart from few blogs from very few companies. Some companies only use social media to announce company awards and few other things that majority of the general public might not be interested in. After careful review of the data collected during the interview and the review of literature, there appeared to be some gray areas that deserve further investigation, including the following:

1. How construction industry can effectively apply social media digital technology to engage the consumers.
2. What can be done to increase construction industry participation in social media digital conversation
3. How to modify social media site to accommodate construction industry's uniqueness.
4. Explore ways social media digital technology could enhance employee training in the construction industry.

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