Hybrid: The Future of Construction Meetings in the Digital Age

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Over the last few years, many construction companies have had to upheave traditional methods of construction meetings to adapt to rapidly changing COVID-19 safety and regulation protocols. For many, this has meant taking common in-person meetings (OAC, pre-construction, and design) and shifting them virtual. As companies continue to move forward in a post-pandemic climate, the question of whether they will continue with virtual meetings or revert to in-person meetings still lingers in the air. To get a better read on the future of construction meetings post-pandemic, a survey was sent to determine what most people prefer. A total of 21 responses were collected from commercial construction companies. 24% of the respondents were project engineers, 52% were project managers, 19% were upper management, and 5% were superintendents. Out of the 21 total respondents, 24% preferred virtual, 66% preferred in-person, and 10% preferred hybrid. While the responses leaned heavily toward an in-person meeting—the respondents were still mixed on the positives and drawbacks of each. Based on the reasoning, there is one conclusive takeaway—hybrid meetings, a mix of in-person and Zoom attendees, are here to stay.

Key Words: Meetings, Construction, Virtual, In-person, COVID-19

Literature Review

Meetings Critical to Construction:

Effective communication is essential to the success of any construction project. It’s the most important quality that any team needs to progress and collaborate effectively. Therefore, a regular cadence of meetings is key to the overall performance of a project. The less miscommunication, the less rework needed, and the less time and money spent. A project needs regular meetings and planning to do well, but the most common complaint is that meetings take away too much time from
the workday, making it increasingly difficult to be productive. “The most prevalent forum of communication in the construction industry is through meetings. Meetings in construction are frequent throughout the project cycle” (Ludwig 1). If not used effectively, frequent meetings can take away from a team’s overall productivity.

So, is there a way to do both? In a 2007 study aimed toward investigating communication mediums, “they found that in-person communication was the most effective, to no surprise. However, with the rise of technology in the workplace, in-person communication is beginning to become less frequent” (Ludwig 1). The guidelines and restrictions that arose from COVID-19 pushed the construction industry into a completely virtual meeting space, albeit out of necessity—it was the push the industry needed to reevaluate their use of meetings and how it influences overall productivity. If the outcome can be reached without meeting in-person, workers will save time, money, and free up more time to work on pressing projects or deadlines. Incorporating a blended meeting cadence, of both virtual and in-person, is a viable solution to freeing up time and driving productivity within the workplace.

Hybrid is the Future of Work:

As life makes a slow return to pre-pandemic life, it’s become clear that the home office isn’t going anywhere. For many industries, employees are still working entirely remote. For the construction industry, it is a little bit more complex and challenging to go entirely remote. It is very unlikely that construction would ever be able to be done entirely off-site. Multiple teams need to come together to evaluate, prep, manage, and build on-site—which is impossible to do virtually. At the same time, there are parts of the industry that can evolve with the rest of society, specifically with meetings. “…about 70% of firms – from tiny companies to massive multinationals like Apple, Google, Citi, and HSBC – plan to implement some form of hybrid working arrangements…” (Bloom 1). This statistic only illuminates how much of the world has transitioned to a hybrid work model. While construction can never completely adopt that, they can offer their employees a hybrid work environment that enhances productivity and eliminates wasted time. Bloom suggests that “before implementing hybrid policies, executives and managers need to think through the implications of how and when employees work remotely” (1). In the case of construction, it would be most beneficial for upper-management to identify which types of meetings should be held remotely, which should be strictly in-person, and designate resources to ensure high-quality technology.

Bloom also notes that “video calls save the travel time required to meet in person. And since video calls for two to four people mean everyone occupies a large box on a Zoom screen, it is easy to be seen” (2). This means that smaller construction meetings would be better suited to be had virtually without people feeling stagnant or unheard in the conversation. Bloom identifies that while there are drawbacks to virtual meetings, with some large groups feeling muted or skipped over, understanding what kind of meeting works best virtually makes it much more successful to leaders in the long run. Therefore, many drawbacks of virtual construction meetings can be easily navigated by creating a strategy on how to use them most effectively.

The Impact of COVID-19 on Communications within the Construction Industry

Although many construction projects were deemed critical during the height of the pandemic, the construction industry was forced to quickly adapt to increased safety measures and regulations. Mostly all meetings were shifted to virtual, creating an abrupt change in years of traditional communication methods in the industry. According to research, “COVID-19 shook up traditional business operations and led to the need for modifications to company policy and procedure.
Leadership and communication strategies have changed within companies of all sizes in response to COVID-19 pandemic” (Encinas, Sattineni, Simons). While restrictions have lightened, the changes in communication that occurred during the midst of the pandemic have altered the communication style of construction meetings. Encinas, Sattineni, Simons state that “a major theme of noted improvements in communication during COVID-19 is the increased efficiency of virtual meetings. Some of the more noteworthy examples of improved efficiency include improved response time/availability of participants, less travel time and cost, and more direct/precise communication” (169). Their research shows significant benefits to the changes in communications that people in the construction sphere experienced due to COVID-19. This shows a real value for upper management to continue to incorporate virtual meetings, even with lighter restrictions, due to communication improvements.

Although there have been communication improvements because of meetings going virtual, there have also been other areas where communication has worsened. This can be attributed to many challenges a virtual space inherently presents, such as unreliable Wi-Fi, coordination issues, lack of accountability, and general miscommunications. With less face-to-face, technology issues, lack of on-site review, and a lack of individual performance—it’s evident that virtual hasn’t been entirely effective. However, these are all areas which could be improved over time. Some of the suggestions for improvement for hybrid communications skills include “virtual meeting etiquette, staying focused, and communicating more clearly/concisely. Time management and issue resolution themes involve responding to issues in a timely manner and remaining productive” (Encinas, Sattineni, Simons 171). These are small steps that make a huge difference in addressing and resolving the issues that naturally arise when incorporating a new communication medium. Having leadership and upper-management work to actively combat those misalignments will go a long way in utilizing the strengths of both meeting types. Put simply, communication and meetings in the industry will never go back to exactly the way they were before the pandemic. This means that communication styles in the construction industry will continue to include both traditional in-person meetings and newly adopted virtual meetings for the unforeseeable future. Focusing on improvement virtual, since it is the newest, is the best path to making the most successful workplace environment.

**Methodology**

The methodology for this project included an anonymous survey made in Microsoft Forms and was distributed via email to commercial contractors. The survey consisted of 10 questions and was sent out over a three-week period. The main purpose of the questionnaire was to acquire more insight on whether people working within the construction industry prefer virtual, in-person, or hybrid meetings. Furthermore, the survey sought to understand the reasoning behind each person’s preference for each with the intent to understand the benefits and drawbacks. The survey collected data that will be analyzed to determine pros and cons of both meeting models in terms of cost, productivity, and time. The questions were asked as follows:

1. What is your job title & how many years have you worked in your industry?
2. What sector of construction does your current/most recent project fall under?
3. What price range does your current project fall into? (ex.1-10 mil, 10-25 mil, 25-50 mil, 50+ mil)
4. What weekly meetings do you hold for this project? (ex. Owner-architect-contractor, Design, Safety, Pre-construction)
5. What meetings are held virtually/hybrid?
6. What is the approximate size of the project management team that regularly attends meetings?
7. If you hold meetings virtually, when was the decision made to do so? Was your choice to hold virtual meetings due to COVID-19 safety regulations & guidelines?
8. Please list any benefits you saw from holding virtual construction meetings.
9. Please list any drawbacks you saw from holding virtual construction meetings.
10. Do you prefer virtual or in-person construction meetings? Please list your top three supporting reasons for that choice.

Survey Demographics:

The first three questions seek to learn more about the background of each participant, i.e. their job title, how many years they’ve been in the industry, what sector do their most recent projects fall under, and the price range. Understanding each person’s background makes it easier to separate and analyze the data. Collecting answers from multiple workers in the industry adds a diversity in perspective, therefore making the answers more valuable. Someone who has been in the industry for over ten years may be much more comfortable with an in-person meeting than a team member who has only experienced hybrid work meetings. Without background knowledge, it is hard to look deeper into the data and make a credible conclusion about the future of construction work meetings.

Types and Sizes of Meetings:

Questions four through six aim to identify the specific types and sizes of construction meetings in place. Understanding what meetings are held, i.e Owner-architect-contractor, Design, Safety, Pre-construction, is a great indicator of what a typical day of meetings for each participant looks like. Once you know which types of meetings each respondent is engaging in, knowing what meetings are held virtually versus in-person makes it known which participant is participating in which medium. Once the participants list the types of meetings they’re involved in, the survey asks them to describe the size of those meetings. The size of meetings has a direct influence over how many different schedules, job titles, and travel times must be considered. Whether the meeting is large or small has potential to influence someone’s preference over virtual or in-person industry meetings.

Benefits and Drawbacks of In-Person vs. Virtual Meetings:

The last four questions exist to evoke people’s feelings toward in-person and virtual meetings, with the overall intent to determine what kind of meeting they prefer and their reasoning behind it. Question seven was created to place the inception of virtual meetings within the construction sphere in a timeline. Knowing whether a company practiced virtual meetings before COVID-19 is essential to making a credible hypothesis from analyzing the data. Questions eight and nine ask participants to list any benefits and drawbacks they see in virtual and in-person meetings. These questions are used to get an accurate idea of how each person feels about each kind of meeting—including the good and the bad. The last question asks each person to choose which meeting they prefer and three supporting reasons for their choice. This question is the most important in determining how each participant feels about the meetings, the reasoning behind their feelings, and where a hybrid meeting workplace fits into the future of the construction industry. Out of the 21 total respondents, 24% preferred virtual, 66% preferred in-person, and 10% preferred hybrid.

Results
A total of 21 responses were collected from a commercial general contractor. 24% of the respondents were project engineers, 52% were project managers, 19% were upper management, and 5% were superintendents. Out of the 21 total respondents, 24% preferred virtual, 66% preferred in-person, and 10% preferred hybrid. Respondents varied from project engineers who have worked in the industry for less than a year, project managers and superintendents who have worked in the industry for 20 years, and general contractor upper management who have worked in construction for over 30 years. Those participating reported projects in multiple industries, including commercial mixed use, education, automotive, healthcare, high rise, federal, and residential. When asked what price range their current project fell into, 8 respondents reported their current project falls into the 1 to 10-million-dollar contract value. 5 respondents reported their current project falls into the 10 to 25-million-dollar contract value. 6 respondents reported their current project falls into the 25 to 50-million-dollar contract value. 3 respondents reported their current project falls into the greater than 50-million-dollar contract value.

When asked what weekly meetings were held for their current projects, 20 out of the 21 respondents reported holding or attending weekly Owner-architect-contractor meetings. Other meetings that were reported being held or attended include, design, safety, scheduling, pre-construction, internal team, value engineering (VE), and building information coordination meetings. When asked what meetings were held virtually, 19 out of the 21 respondents reported holding or attending at least one weekly virtual project meeting. 17 out of the 21 respondents reported that all their attended meetings have a hybrid option. Only 2 out of the 21 respondents reported a meeting that requires in-person attendance.

When reporting the approximate size of the project management team that regularly attends meetings, 14 out of the 21 respondents reported attending weekly meetings with 3-10 people. 7 out of the 21 respondents reported attending weekly meetings with 10+ people. The participants were also asked if they held virtual meetings, when the decision was made to do so, and if their choice to hold virtual meetings was a result of COVID-19 safety regulations & guidelines. 19 out of the 21 respondents reported the main driver behind holding virtual meetings in their project are the regulations put into place by COVID-19. 2 out of the 21 respondents reported the main driver behind holding virtual meetings was because of the project’s location. 5 respondents reported that their project started after the mandatory COVID-19 regulations, but they continued holding meetings virtually.

The next questions were formatted as free-response questions. The first being to list any benefits that were observed from holding virtual meetings. Common themes were presented in the answers. A few are listed below:

- “Holding meetings virtually, or at least hybrid, has made it possible to more successfully schedule meetings at the last minute. It has also made attending and weighing in on meetings a more frequent occurrence for the more senior and often busier management personnel.”
- “We meet with the structural engineer quite a bit and have virtual meetings/screen sharing which is helpful since they are from Canada.”
- “Screen sharing is good for short conversations and questions. For example, as a subcontractor, we’ll submit something to the GC and if they have questions on it, we will do a quick screen share to go over those questions.”
- “Screen Sharing / Drawing on the Screen / Less travel Time / Document sharing / Being able to steer the meeting in the direction you want it to go in Time saved from travel. Good for last minute decisions that need a somewhat face to face talk.”
“You can join from almost anywhere (car, house, jobsite, etc.), it cuts down on travel time and expenses, we are able to share documents and mark them up virtually, look through plans and large documents.”

“Virtual meetings help cut out travel time. Everyone in the construction industry is very busy and cutting travel time helps production.”

The next free-response question asked the participants to list any visible drawbacks they saw from holding virtual construction meetings. Common themes were presented in the answers. A few are listed below:

- “Individuals get talked over. Many of these meetings have two or more "groups", 3-7 people per group, in 1 virtual meeting room. Side conversations are lost”
- “Technical difficulties can often lead to miscommunication. Holding meetings virtually can also encourage individuals to just sit back and not participate or maybe even not pay attention as they can hide behind a screen with their camera off and just unmute when someone addresses them directly. Both difficulties make it harder to address the more technical, sometimes combative issues that arise throughout the duration of projects.”
- “Sometimes it is hard to communicate everything you want to communicate in a virtual meeting. It is more difficult to get a word in or grab the attention of the room while in a virtual meeting. Also, a lot of people in construction are older, more "old school" and sometimes have difficulties working the system or getting their points across when typically, they would draw their ideas out on a white board or piece of paper.”
- “Can be harder to gauge/connect with people. I have noticed that people can tend to be less hostile even in face-to-face meetings where they can clearly communicate ideas. With increased complexity of issues to discuss, time to solve these problems often increases at a much higher rate than in person meetings.”

Lastly, the participants were asked if they prefer virtual or in-person construction meetings and to list their top supporting reasons behind their choice. Common themes were presented in the answers. A few are listed below:

- “In-person. You can see who you are working with, their reactions to issues and comments. The project team is more cohesive when you can have open conversations, which are stunted when the meeting is virtual. Many projects are remote, and due to that they can have poor internet/phone service. This can prevent sharing of video/screens, even worse it can make verbal difficult to hear and even cut in and out. In person it is easy to hear and share visuals.”
- “In-Person. Meeting in person makes for a clearer sharing of ideas, helps to foster better working relationships, and helps keep attendees engaged/accountable both during and after the meeting.”
- “I prefer virtual meetings for the most part. It is convenient. I don't have to leave my office and therefore can be more efficient with my time. More people can attend the meeting from different locations. Being able to screenshare is really helpful in portraying information and
is a lot easier to view on your own computer screen than on a big screen in a room with a bunch of people.”

- “I believe that virtual meetings can be very helpful in situations where a last-minute decision needs to be made or in instances where someone would otherwise not be able to make a meeting and just miss it. I think that in person meetings are essential to creating a good relationship with people or solving any kind of dispute.”
- “I like both types of meetings. Virtual: Increases production due to no travel time and can include people who cannot meet in person, which helps add feedback to solving issues in real time. In Person: People are more accountable, people are visual and sometimes screens cannot capture the reality of the jobsite, people communicate more effectively in person.”

**Analysis**

For the data to be credible, the responses needed to be collected from a variety of workers in the construction industry with multiple perspectives. The more the respondents differ in background, experience level, time employed, and project types—the more valuable the data would be. If a participant had only recently entered the industry at the beginning or after the introduction of COVID-19, it is likely that they would be more comfortable with both in-person and virtual meetings. They may also be younger, therefore having more experience using technology. If a team member has been in the industry for ten years or longer, it could be concluded that they have mainly been trained in in-person meetings. It is also more likely that they are older, making it more common that they may not be as acclimated to technology in the workplace. Out of the 21 participants, there were 5 Project Engineers, 1 Project Coordinator, 5 Assistant Project Managers, 6 Project Managers, 1 Warranty Manager, 1 Superintendent, 1 Vice President, and 1 President. 39% of the people who took the survey have less than five years of experience, 33% have 7-10 years of experience, and 28% of respondents have 18-38 years of experience. When looking at years in the industry vs. a preference for in-person or virtual meetings, five out of six employees with over 15 years in the industry prefer in-person meetings to virtual, four out of six with 5-15 years of experience preferred in-person, and five out of seven people with 0-5 years of experience prefer in-person to virtual. Two employees with 0-15 years of experience preferred hybrid. These results can be seen in figure 1.0 and 1.1 below

![Figure 1.0](image_url)
When identifying the drawbacks of virtual meetings, many respondents pointed out that the soft skills, i.e. interpersonal communication, reading body language, and relationship building are often lost in translation during virtual meetings. A majority agreed that poor connection, bad visual and audio quality, and other technological issues make it easy to miscommunicate important details needed to make a successful meeting. One participant pointed out that it’s challenging to communicate everything that you want to communicate during a virtual meeting since it’s much easier to continue a conversation when you’re face-to-face with a client or co-worker. Overall, the respondents all agreed that building relationships and connections with the people we’re working with is often harder to obtain over a virtual meeting, concluding that in-person meetings are essential and will never be lost to a completely virtual workplace.

When asked to describe the benefits of virtual meetings, many people said that the option to screen share, mute certain speakers, and allows for last-minute scheduling. Many also commented on the time that they save from traveling back-and-forth to meetings. Cutting travel times frees up more time for people to work on their more pressing deadlines and projects. A majority also agreed that freeing up meeting time with virtual meetings ultimately drives productivity, giving it a seat at the table in the construction industry for years to come. These benefits did not relate to the size of the project. Regardless of the project size, the respondents had a similar preference as it relates to meeting types. See figure 1.3 below.
While most people did prefer in-person, the results are still mixed—along with the positives and drawbacks that come along with each. When it comes to the preference of in-person, participants said they preferred it because in-person allows you to see who you’re working with, their reactions to issues and comments, and the project becomes more cohesive when you’re able to have open conversations—those which are stunted with virtual meetings. They also said that many projects that are remote are more likely to have poor internet and service which can prevent screen sharing. On the other hand, some advocated for virtual in their responses, claiming that virtual is more convenient due to eliminating travel time and making it more accessible for people from different locations. The capability to screen share and portray information to everyone involved easily is a huge positive for many. Most of the people who responded agreed that when it comes to relationship building, reading body language, and addressing problems as they come up—in-person meetings are the clear choice. Most of the drawbacks of virtual meetings had to do with technological issues, rather than convenience. When virtual is functioning properly and the technology is accessible, there is a greater element of convenience and accessibility when a spontaneous issue comes up. Needing to gather people from a variety of locations can be challenging, virtual meetings offer a quick solution to this.

**Conclusion**

Based on the data above, the notion COVID-19 has completely shifted the trajectory of the construction industry is certain—presently and for years to come. Given the looming uncertainty of life after COVID-19, it is nearly impossible to predict what the future will bring to the field of construction. Although the data illuminates exactly how divided employees are on the benefits and drawbacks of virtual vs. in-person meetings, the survey concludes that hybrid workplace meetings are here to stay within a post-pandemic climate. It serves as a guidepost for those in the construction industry questioning what serves their teams better, virtual, or in-person meetings? The data shows that there is a need for both. If you are looking to build relationships, foster connections, and communicate in real-time without interruptions, in-person meetings are preferable (utilizing more of the soft skills necessary to the success of any company). On the other hand, if a problem arrives unexpectedly and needs a quick solution—a virtual meeting is an easy way to get all teams together without much planning. Certain types of meetings such as tailgate safety meetings require both connection and relationship building—two of the pillars needed to create meaningful and profitable
work. However, the desire for the flexibility and convenience virtual meetings bring will never be outdated. Change happens rapidly and without much warning but using a hybrid meeting system can help a team maintain its previous productivity and structure.

**Future Research**

Since the data shows that all construction meetings were held in-person until COVID-19, future research will have to be done in accordance with time. COVID-19 is still a large determining factor in how workplaces are functioning. As time passes, there will be more opportunities to ask a broader scale of construction employees to analyze the benefits and drawbacks that a hybrid meeting model brings. Adding the perspective of engineers, architects, owners, and any other project professional would add valuable data to be analyzed. The longer COVID-19 continues to affect the construction industry, the more chances there will be to ask a larger pool of professionals their thoughts, therefore making the results more accurate. For this reason, the future research will be ongoing.

**References**


