Managing Design With The Effective Use Of Communication Media: The Relationship Between Design Dialogues And Design Team Meetings

Stephen Emmitt and Ad den Otter

ABSTRACT

Effective and efficient design team communication is an essential component of architectural design and construction projects. Face-to-face communication, via meetings and dialogue, is an essential means for design team members to discuss and communicate design ideas. Meetings represent an important forum in which all parties have an opportunity to understand the implications of design decisions on a number of levels.

Dialogue between design team members forms an important part of the interpersonal communication that occurs during design development.

Dialogues have the highest chance of achieving understanding of the design, especially in the early phases when uncertainty is high and less design information is generated compared with later stages in the project. A survey of communication practices via project websites across multiple cases found that design team members chose dialogues as their preferred communication medium.

The results are discussed against research findings from communication in design and management team meetings. The relationship between dialogues and team meetings is then explored from a design team management perspective. The results have implications for the effectiveness of communications within international design teams and hence the manner in which communications are planned and managed.

Keywords:
Design management, Team communication, Dialogues, Interaction, Meetings, Project Websites.
1. INTRODUCTION

Architectural design is a collaborative act that relies on effective interaction between project actors and stakeholders. Interaction affects the strength of relationships between the actors and ultimately colors their ability to work together successfully. Teambuilding, the discussion and subsequent sharing of values, resolution of minor differences and conflicts, question asking and the creation of trust between design and construction team members are just a few of the factors that are crucial to the smooth running of projects and which are reliant on the ability of the actors to communicate effectively and efficiently. Communication between the organizations and individuals temporarily brought together to design and realize architecture is undertaken constantly but the field has received very little attention from researchers, a point noted by Emmitt & Gorse (2003), Dainty et al. (2006) and Krenk (2006). Apart from a small number of doctoral studies, few researchers have attempted to observe or examine the nature of communication as it happens in live design and construction projects (see Emmitt & Gorse 2007). The theme running through this small body of work is the importance of synchronous (face-to-face) communication in developing and realizing architectural design. This is also evident in the doctoral research that has investigated the effectiveness of Project Web tools to facilitate communication (e.g. Abadi 2005, den Otter 2005).

Communication can be defined as a system of interaction between sender and receiver. More specifically, communication is the sharing of meaning to reach a mutual understanding and to gain a response: this involves some form of interaction between sender and receiver of the message. The creation of meaning between two or more people at its most basic level is an intention to have one's informative intention recognized (Sperber & Wilson 1986). Informing someone by any action that information is to be disclosed is considered to be an act of communication.

Daft & Lengel (1984) introduced the media-richness theory for processing ambiguous information in an organization. They argued that team performance improves when team members use media with higher information richness for equivocal and uncertain tasks. Dialogues and meetings should be the best medium for exchanging meaning and reaching understanding. This tends to be supported by empirical work, which has found that design team members have a clear preference for interpersonal communication through meetings and dialogues (Gorse 2002, den Otter 2005).

1.1. Team Meetings

Meetings are concerned with group dynamics and can be used to serve a variety of essential functions. From a design perspective they are used for helping to gain understanding and establishing designers’ intentions and hence reach consensus about the design.
They are also useful in helping to integrate design work packages and facilitate the exchange of knowledge and expertise. From a management perspective, meetings are used for a range of purposes, from team building and maintenance through to the discussion of progress, the resolution of problems, and closure of tasks/work packages. Meetings tend to be formally organized using an agenda and written minutes of the meeting, and are scheduled as part of the project program, their frequency varying to suit the complexity and size of the project. Impromptu meetings may be called at short notice to resolve an unexpected problem.

1.2. Design dialogues

Design dialogues are used more frequently, depending on the organizational situation, distances between design organizations, and the availability of asynchronous communication tools and skills. Individual preference for the use of certain tools also plays a role. In design dialogues, both sender and receiver are able to communicate directly with each other by use of body language, their tone of voice, and the messages spoken but also by making sketches and images to visualize their spoken message. This, often intimate, exchange between two people differs to team meetings where more receivers of the message are present and have to take turns in responding.

Design dialogue is a very effective tool to discuss design problems related to others’ design tasks, thus helping both communicators to reach a shared understanding of the design task, ‘talking while drawing’. Dialogue is also an essential tool for the design manager, with informal dialogue helping to keep design work moving in the right direction and formal face-to-face interaction to resolve problems and discuss more sensitive issues. Design dialogue is a means of communication that offers the highest possible exchange of signals, clues, and messages, potentially with the highest chance of understanding the design and its attributes, especially in the early design phases when less design information is available.

2. COMMUNICATION PROCESSES IN ARCHITECTURAL DESIGN TEAMS

A large number of specialists are required to undertake design and management work packages to realize architecture. Design teams for architectural projects can be defined as temporary, multi-disciplinary and network-based organizations.

Knowledge about the design exists on a cognitive level of each design team member, on the level of collaborating design organizations, and on design team’s external level via the client, users, and other stakeholders. In the design team, team members repeatedly generate new knowledge about the design by collecting, sharing, and transforming information.
Group and team communication in terms of face-to-face communication is essential to facilitate these processes. Thus from the perspective of the design team, specialist’s design knowledge usually is embedded in the team and needs to be communicated to become useful knowledge for the design to be produced. To distribute generated design knowledge among design team members for the progress of design, they communicate both face-to-face, synchronously and asynchronously using all available communication tools and media.

The design process can usually be characterized as a continuous process of change that has to be well documented and updated because many stakeholders are involved in the process. Specifically for team communication in integral design processes with a high level of concurrency, design information needs to be well structured. All recently generated and changed information needs to have the right status, version and information about creators and updaters to get overview and transparency on the current design process and progress. In such design teams, members need information updates and feedback from the other specialist designer’s progress most likely direct to prevent mistakes by working with outdated information. Two PhD studies provide accounts of interaction within live construction projects, and these are briefly summarized here.

Gorse (2002) investigated and explained the functioning of design team meetings and its effectiveness for team communication. A review of design and construction professionals use of communication media identified a clear preference for face to face communication over other forms, e.g. drawings, emails etc. This was because the participants had the opportunity to ask questions and explore issues in detail. The survey revealed a clear preference for meetings to discuss design development and review progress.

This led Gorse to focus on progress meetings to collect interaction data using the well-established Bales IPA method (Bales, 1950) from three consecutive site progress meetings from ten design and construction projects. The interaction data was then compared with the effectiveness of projects and team leaders. The research revealed a clear link between the efficient management of meetings and team performance. Efficiency was linked to the way in which the meeting was organized and chaired and also to the communication traits of the chairperson.

Den Otter (2005) monitored changes in design team communication using a Project Website (PWS) in The Netherlands. Contrary to the claims of greatly improved performance from PWS vendors, the research revealed evidence of the IT Productivity Paradox, which shows that investments in IT do not always result in higher productivity (Brynjolfsson, 1998).

The use of a PWS by team members did not change their preference for using dialogues. The majority of the team members and their leaders also disliked team meetings because they found them to be inefficient.

Meetings were too often used to inform (rather than discuss), take too much time (often more than 2 hours) and were not organized sufficiently well to allow considered discussion of the design work and progress. This
emphasized the need for the managers to organize and manage meetings more effectively.

The findings showed that the PWS was not used as prescribed by management and users experienced less benefits than they expected. Only minor changes in team communication were found after the implementation of the PWS. The new means for team communication was not fully adopted by the teams. Team members mostly used the internal computer network instead of the Project Website and contacted each other frequently by dialogues, informal contacts, email and telephone, thus circumventing the PWS. Where people were co-located and working in different offices the use of the Website was more frequent, but mostly for copying files from the computer network to the PWS.

The computer network file management package was used primarily for design information storage and the Website was used as an electronic information archive. Thus less current information was stored in the PWS compared to the computer networks and storage was dependant on the occasional copying activities of the team members instead of a routine activity in daily work.

3. MANAGING DESIGN TEAM COMMUNICATION

Our argument is that design dialogues and design team meetings need to be better understood because interaction effects team communication and ultimately colors the outcome of the process and the product. Both media need to be utilized by design managers to improve performance and help to encourage creativity and collaboration within design groups. Gorse (2002) found that effective managers used a narrower range of communication acts and communicated less than the managers who were less effective. This would suggest that the use of dialogues should also be timely and considered if they are to be effective.

Den Otter (2005) found that most team members preferred dialogues because they offered the best control over communication acts. Weaknesses of a team meeting relate to the time required (to prepare, attend and subsequently act on the decisions made) and the tendency of managers to use meetings too often, thus reducing their effectiveness as a communication and decision-making tool in a group context.

Benefits relate to the ability of key project stakeholders to interact and discuss problems, hopefully resulting in decisions that allow the design and hence the project to progress smoothly. Benefits of the meeting also appear to be related to the ability of the meeting chair to conduct the meeting in a professional manner. Weaknesses of a dialogue may be its informal nature and the lack of a written record of the outcome of the interaction.

Benefits of dialogues appear to relate to a better mutual understanding of the design problem through (often impromptu) face-to-face discussion. The mutually agreed outcome of the dialogue can then be taken into the formal meeting, allowing better-informed discussions or arguments. For
that reason dialogues can be an important tool for the team leader to establish team members’ opinion about design issues and progress as well as other matters related to the social dynamics of the team.

Dialogues and design meetings can serve as a ‘glue’ to maintain the collaborative nature of design teams if used effectively and deliberately by design managers. Design managers should regard dialogues, as an important instrument for increasing the effectiveness of team meetings, because of the richness of communication offered by dialogues, specifically in the early design phase when individual team members’ design knowledge needs proper assimilation in the team.

By regularly having dialogues with the individual team members, design managers will get a thorough insight to individual design problems and hence get a better overview of the progress of the entire design. Such information will help them to focus on the most pressing problems, to tune differences in design visions of team members and to steer team meetings effectively. For example, management may propose a certain direction in the team meeting or put forward alternatives to the team to be discussed and on which to take decisions. Discussing the effectiveness of the interfaces between the various design work packages may be better done in dialogues because of the detailed nature of the discussions. This is especially important for tuning and synchronizing activities in concurrent design teams. In these settings the design process is divided into specific parts that are worked on concurrently. In such communication environments dialogues can function better than meetings for avoiding miscommunication, fine-tuning and synchronizing aspects of the design between specialist designers and to resolve sensitive issues related to the effective participation of underperforming team members. The main advantage of a dialogue being direct face-to-face communication using socio emotional communication acts.

4. CONCLUDING COMMENTS AND RECOMMENDATIONS

Management of interpersonal communication in design teams influences efficiency and performance as shown in the research by Gorse (2002) and den Otter (2005).

Design dialogue still remains the favorite media for interpersonal communication despite the growing use of asynchronous communication. Design dialogue remained the preferred means of communication because of its high media richness, and the stimulating effects for understanding, sharing of expert design knowledge and team building, which was experienced to be effective for individual design progress.

Design team meetings served a complementary function, providing team members with a forum to exchange ideas and reach mutual understanding. However, unlike the face-to-face dialogue, the team meetings were found to be effective (in terms of effectiveness of communication) only when well managed.
Design team managers may stimulate the use of dialogues for design knowledge assimilation and a better understanding of the design between team members. Similarly, managers need to encourage interaction in well-planned and managed meetings. This is especially important for sharing knowledge, reaching mutual understanding and fine-tuning design solutions in integral design processes with a high level of concurrency. Managers may also use dialogues to gain a better understanding of the team’s social dynamics and the design team members’ capability to perform their tasks in time and to budget, while also achieving design quality within the limits of the project.

Our message to readers of this paper is that design managers must recognize the value of interpersonal communication and not get too distracted by technological developments and arguments for process innovations. People are the most important element in design and construction projects. Planning and management of design team’s synchronous and asynchronous communication must be grounded in a better understanding of both synchronous and asynchronous communication within the workplace, which implies the need for more applied research.

5. REFERENCES


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