MANAGING ePRESENCE IN A GLOBAL ELECTRONICALLY CONNECTED WORLD

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Abstract

This paper will address the challenge of managing ePresence in a complex and rapidly changing global environment. The paper will: 1) briefly define ePresence and differentiate ePresence from earlier ideas and concepts of virtual presence; 2) identify key technologies that are both enabling virtual project and design teams on a global basis, and that are also elevating the importance of managing ePresence; 3) assess both the opportunities and challenges of managing ePresence; 4) explore decision points for managing ePresence in the workplace; and 5) suggest ways in which boundaries between work and home, between professional and personal, can be productively and positively maintained.

Background

Electronic communications have enabled individuals to communicate with friends, family members, business associates, and colleagues at a distance in ways that were unimagined even a decade ago, when the Internet was well along in its initial development.

Engineering projects are increasingly conducted in teams of individuals who live and work in different cities, regions, time zones, cultures and countries. Technologies such as cell phones, internet voice over IP, and low-band-width interactive video are all contributing to this trend. Software making these technologies more flexible, interactive, and available is extending the capacity to be present and accessible to home and work 24 hours per day, 7 days a week, ...if one chooses to do so!

In the future, it may be that working virtually and 7 X 24 is less and less of a choice, and more and more an expectation of others, if not an employment requirement. And on the other side of the coin, individuals may find that the increased flexibility of scheduling and location will be valuable compensation for the loss of privacy and personal control of activity that will inevitably result from these developments.

What is ePresence?

ePresence, as used in this article, is a form of virtual presence, and is defined as the capacity to be present electronically, available for contact from others, and engaged in a real way with activities that are both social and work-related. In the same way we signal presence, availability, and engagement by leaving our office doors open to colleagues and co-workers in the work setting, ePresence enables us to communicate
availability and engagement electronically to team members, supervisors, colleagues, spouses, and others, such as customers and clients, who may need to interact with us on a relatively spontaneous basis. These individuals may be in the next room or building, or they may be located on any point of the globe—in any city, country, or continent. All that is required to signal ePresence, and to observe, acknowledge, and take advantage of ePresence, is an electronic connection to the Internet, and appropriate communication software. This form of virtual presence is very different than early ideas of virtual worlds and immersion in virtual worlds that were articulated as a direction for online virtuality.

Early Ideas about Virtual Presence

Early ideas about virtual presence (late 20th century) focused upon the possibility of individuals being present or active within immersive virtual environments that were created to enable multiple kinds of interactions among people, either through text based interactions, or increasingly, through visual simulations or through the use of avatars. Early virtual environments included MOO’s and MUD’s;1 more recent environments of this type include Second Life 2 and other web-based interactive environments. Scholarship focusing on this type of virtual presence usually included a discussion of: 1) virtual reality contexts and environments created to connect people virtually; 2) the difference between virtual reality and physical spaces; and 3) the differences between virtual interactions mediated through the virtual space, and physical/verbal interactions experienced as a result of face-to-face contact. In today’s business environment, where ePresence is regularly practiced without such specialized hosting software, such notions of virtual presence seem quite limiting, and most virtual activities are closely connected to one’s daily personal and professional routines, needs and context.

Current Views of Virtual Presence—the Idea of ePresence

With the increasing power and capabilities of the Internet and the Worldwide Web, ePresence has emerged as a more powerful and pervasive concept of virtual presence. This new form of interaction builds upon the idea that an individual might never be "unavailable for electronic contact" by others, and that this possible electronic contact can, without specific intervention, supersede the location, software choices, current activity, preferences, and priorities of the individual(s) being contacted. In this context, ePresence is the idea that a person (loved one, co-worker, colleague) is available, in real time (synchronously) or in almost real time (asynchronously), potentially 24 X 7 (24 hours per day, 7 days per week), for electronic interaction (text, audio, video, or all three) with other persons. While sleep is still recognized as essential for human well-being, other human needs, such as privacy, family, daily schedules, protocols, and routines (mealtimes, for example), are under duress. Even though we may avoid making the telephone call or text message to a colleague at 3AM, we may feel quite

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1 A MOO (multiple object oriented) is a text-based online virtual reality system to which multiple users (players) are connected at the same time. In computer gaming, a MUD (Multi-User Dungeon, Domain or Dimension) is a multi-player computer game that combines elements of role-playing games, competitive games, and social chat rooms.

comfortable calling or texting at the dinner hour, and increasingly across time-zones, we are completely unaware of needs and personal/professional schedules other than our own. As just one example of changing practices and expectations, engineers and professionals operating in this global environment need to be aware not only of their own customs, traditions, and holiday schedules, but also those of their international colleagues and customers.

And, as engineering design and manufacturing has rapidly developed into a global enterprise, project teams are working around the clock, transferring work across time zones, among individuals from different cultures, and taking advantage of resources that are expensive or impossible to duplicate multiple times. ePresence has become an integral aspect of enabling these virtual teams to function effectively, reduce costs, improve efficiency, shorten the time-to-design and time-to-production and market challenge, and build products more acceptable in a global market. Many benefits are attributed to ePresence and virtual teams. These benefits include the following possible benefits to individuals and employers. Individuals can:

- work at home
- maintain flexible working schedules
- have more time with family
- work while travelling and maintain productivity
- collaborate with experts anywhere on the globe
- work with a variety of useful technologies and tools
- maintain closer family relationships while maintaining productivity

These benefits are supported by technologies that enable individuals to overcome barriers of location, time differences, and unequal resource distribution, and are also presented as improvements to personal flexibility and professional productivity. But with each potential benefit, the boundary between what is work and what is leisure is reduced.

**Technologies Supporting ePresence**

Multiple technologies that both enable ePresence to occur, and indeed propel its use, have developed rapidly. These technologies are designed to be low cost, easily accessible, and omnipresent to the user. They are based on sophisticated software which allows one to manage both one’s own ePresence and that of others. The result is that the user and the technology are separated only by specific action by the user. Just as desktop and distributed computing replaced the mainframe in the last century, these new mobile technologies are designed to follow or accompany the user, whether in the field, the office, the vacation, or the home. Both technologies and related software operate across technical platforms, international borders, languages, and culture. They depend upon powerful servers that enable a shift in the idea of personal distance away from geography, and towards distances measured in time required for contact and the availability of technology to make contact. People across the world may now be more easily contacted, and heard from, than the person whose office is around the corner or two floors down. Presence and availability are easily signaled, and contacts are quick and precise.
Many specific technologies have advanced these changing practices of ePresence. Engineers in this dynamic technological global environment are communicating with each other world-wide by cell phone, through messaging systems such as Microsoft’s Instant Messenger and other similar products, and through sophisticated systems such as Skype, which enables both voice and text synchronous interaction at no cost to the user when landlines and telephones are not used. Skype enables users to signal their personal electronic presence and availability at multiple levels (do not disturb, away at the moment, available, and contact me). Multiple users can talk simultaneously, and the software enables video to accompany real-time interaction. Skype also provides for multiple types of technologies to be simultaneously employed (computers, cell phones, landlines), enables, text-based chat, and the software can link up to 25 separate users world-wide into a single exchange. All of this can be initiated by a single user without outside assistance. Its biggest disadvantage for corporate users is that special software for Skype must be downloaded, and many corporate networks do not allow client software such as Skype to be downloaded onto corporate machines, thereby restricting capability to personal or at-home machines.

Other Internet-based software enable in-depth and complex interactions and facilitate interactive media-rich synchronous contact among multiple locations and individuals. Adobe Connect and Microsoft’s LiveMeeting are two such platforms, and there are many other similar products. Such products are not quite as spontaneous in their application as the cell phone, Skype, or other ePresence tools, but their use is growing and they contribute to the idea of 24x7 global ePresence.

**ePresence—An Opportunity for Engineers, or a Requirement?**

ePresence enables far greater connectivity among professional engineers than ever before. Project teams are able to form, connect disparate but valuable resources and inputs, exchange models and make decisions, and advance progress in ways simply unthinkable just a few years ago. In addition to ensuring that all relevant resources can be assembled quickly and effectively, virtual presence and the technologies that support it are the glue that holds these teams together.

In addition to enabling teams and working groups to form more efficiently and effectively, and overcome the barrier of location and distance, ePresence extends the productive capacity of the team and the time it has available for productive work. By ensuring that teams can be easily formed globally, work and progress on engineering projects do not go on idle while a given group of professionals in a particular location enjoy their evening cultural or sporting events, and their 8 hours of sleep. What happens in Silicon Valley, or Detroit, does not stay in Detroit while Detroit sleeps. Development is ongoing in Germany, India, China, Japan, Viet Nam, and New Zealand. In effect, ePresence and the opportunities for coordination, communication, and consolidation dramatically reduce the real time development cycles of designs and testing of new products. Elapsed time in the product development phase has already been cut dramatically, and this trend has only begun. More than a decade ago, Eisenhart and Tabrizi (1995) reported that fast adaptation had become essential to pivotal, strategic competence for many organizations; the recent decade of activity has confirmed their conclusions.

With ePresence, working with colleagues in different time zones is made easier, and the barrier of language can in some ways be reduced through increased use of
written and visual information. While physical interaction is often viewed as essential for building trust and easing the likelihood of miscommunication, ePresence does allow for communication on time critical projects among individuals who have never met in person. ePresence is acknowledged to enable greater personal flexibility with the ability to work effectively online from any location, including home, second office, and increasingly, those places that ordinarily would be associated with vacation venues. This changing landscape is exemplified by the pleasure boat named “The Office”, and by the computer or cell phone in action somewhere on a remote beach. In some instances, businesses view this mobility as a way to cut their overhead costs for office space, and they may actually reward employees who are willing and able by virtue of their work to give up a home office. And in other cases, businesses located in physically undesirable or very remote communities are able to take advantage of ePresence to attract and engage with professionals whom they otherwise would be unable to recruit to their location.

As a result, ePresence has taken hold in the global workplace, and has moved from an opportunity and an option, to almost a requirement for professional practice. Increasingly, the question is not whether to embrace ePresence, but rather, how to manage one’s ePresence effectively.

The Virtual Team: An Immediate Challenge to Effective Management of ePresence

ePresence may no longer be optional in a global professional engineering workplace. Clearly, managing ePresence is no longer voluntary for engineers who are required to participate in virtual or eTeams. Strategic management of ePresence can be critical in achieving professional competence, effectiveness, recognition, and reward. Before discussing specific challenges of managing ePresence, it is useful to briefly review some key components of effectiveness working in virtual teams. Zigurs (2003, p. 340) defines a virtual team as a “collection of individuals who are geographically and/or organizationally or otherwise dispersed and who collaborate via communication and information technologies in order to accomplish a specific goal.” Each of four major dimensions of dispersion—geographic, temporal, cultural, and organizational, can be diagrammed on a continuum moving away from the traditional concept of teams formed in site-based contexts.

Challenges of working effectively in virtual teams include understanding the unique dynamics of virtual teams that may involve multiple cultures, politics, languages, time zones, as well as differences in both business and personal goals, practices, processes, and rewards. Lee-Kelly and Sankey (2007) report that time zone differences and cultural differences are particularly difficult to overcome in working effectively in virtual teams. In addition, differences in leadership and management style, and unclear roles and responsibilities exacerbate team difficulties.

Zigurs found several elements of team health to be even more critical in the functioning effectiveness of virtual teams than for the site-based team. In particular, Zigurs notes that great effort and attention must be given to developing strong relations and a sense of community among team members. However, she observes that fact, what often happens in virtual teams is that teams typically focus almost exclusively on the task at hand, and thereby teams often fail to develop a sense of common identity, purpose, and, among the team’s members, mutual valuing of each other. Rosen, Furst,
and Blackburn (2007) and Zigur (2003) confirm that elements critical to effective team performance include:

- the idea of trust, which can sometimes be easier to gain in virtual environments than in site-based environments, but is also very fragile and easily lost or damaged, often very unintentionally. This reinforces a number of findings in the literature about the need for virtual teams to learn about each other, take time for social interaction and community building, and to find ways of sharing issues, challenges, and constraints in a safe and supportive environment.

- the technology itself, if it is perceived by individual team members to be a barrier, and especially if that barrier is uneven across the team. It is important to carefully evaluate all technologies the team will be using and to reinforce the use of these tools through practice. Team members really need to become competent with all of the tools early on in the process. Delay in developing this competence will negatively affect trust among team members, and will create uneven contributions and workloads.

- leadership. What differences in leadership style and action are required in leading virtual teams? Leaders of virtual teams are likely to miss many cues that reflect dissonance among team members, lack of focus, activity that is off-task, or other indications of poor performance.

- Lack of full knowledge of team member’s skills, areas for improvement, and other constraints. It is worth spending time on these elements as a part of initial team formation, practice with tools, and setting the stage for the longer term. The team is likely to find hidden gems of competence, as well as to uncover challenges/limitations that should be addressed upfront.

- multiple and very complex roles that team members play, both within the virtual team, and outside of it in their own site-based environment. Roles in a virtual environment are more difficult to discern and to assume, and therefore more organization is required in advance for teams and their members to be effective. And, conflicting demands on time, commitment and energy can easily detract from member engagement.

- team processes. What processes are helpful in focusing both the energies and the emotional commitment to the team and its goals? How is organization, feedback, reward, mentoring, vision setting, building trust, and other important elements, accomplished?

- Cultural constraints. This is a very difficult challenge, in that often “we don’t know what we don’t know” and both culture and individual personality creates many “blind spots” that interfere with effective communication and team progress. Understanding simple principles of cultural differences, such as Hofstede’s five dimensions of cultural differences, can be very helpful. Exploration of these dimensions, which have to do with how different cultures frame key aspects of culture, are beyond the scope of this article, but represent key understandings relevant to the functioning of cross cultural virtual teams.

Greenberg, Greenberg, and Antonucci (2007) ask the question “why is sustaining trust so difficult in virtual teams.? This question directly points to some of the unique features of virtual teams, including lack of face-2-face contact, social interactions,
informal safe exchanges that lead to greater personal knowledge of team members, and the absence of communication cues and body language that are inevitable in face-to-face exchanges. They also see the use of technology to mediate interactions as an inherently weaker form of communication. Virtual teams, while experiencing many of the same stages as face-to-face teams, require specifically different actions to move through Tuckman’s (1965) stages of team formation, inception, organization, transition, and task accomplishment. Some models add a sixth stage, acknowledging that most virtual teams also have a final stage of dissolution. Within the inception stage, it is critical for team members to develop skills necessary, gain knowledge of each other, learn about their anticipated roles, and learn and contribute to the definition of the task at hand. Establishing expectations regarding schedule, how the team and its members will be evaluated, and an emphasis on cooperation rather than competition is also important to communicate. Team-building activities are useful during the inception and organizing phase. Teams that leave out the personal and emotional aspects of interaction often pay later with lack of trust and team cohesiveness around an agreed upon goal. Ongoing and regular communication, dedicated schedules, and leadership are critical during the organizing and transition phases, and clear expectations and patterns of ePresence of team members should be identified and shared among team members so that they are known, anticipated, and appreciated. Helping team members be available, and positive in orientation, will go a long way to ensuring effective team performance. As deadlines are met, and successes achieved, it is important to both acknowledge and celebrate these.

Cascio and Shurygailo (2003) indicate another form of complexity of virtual teams lies in the complexity of the locations of their members and the origins of team leadership. They suggest that virtual teams can be organized within a single location, or across multiple locations (the geographic dimension) and they can involve single or multiple leaders or managers, leading to four types of virtual teams. It is also worth noting that many team members travel frequently and regularly and may not be location-based at all. The most complex virtual teams involve individuals in multiple locations working through multiple managers (matrixed leadership virtual teams). Among leadership elements identified by Cascio and Shurygailo as affecting the performance of all virtual teams but especially the matrixed leadership teams are communication strategies, including frequent advance communication and reinforcement of timetables and schedules, effective group communication when using technologies for communication, and the appropriate choice of communication vehicles, depending upon what is being solved. They suggest that in this complex form of team, an initial face-to-face kickoff meeting can be highly valuable in establishing mutually agreed upon roles, responsibilities, procedures, and communication processes, and at the same time can help to build a more explicitly trusting atmosphere. Social interactions are essential and should be frequent, and reinforced, and clear roles should be continuously reinforced. They also point to the importance of recognizing emerging leaders and helping team members in establishing “proper” (author’s emphasis) boundaries between home and work.

So a first critical step in effectively managing one’s own ePresence is to become both knowledgeable and skilled at working with others electronically across cultures, time zones, international boundaries, languages, to accomplish meaningful tasks. In the process of developing and expanding these skills, it is important to develop one’s own leadership style and skills, and to build one’s own strategy of e-Presence into these experiences.
Managing Professional and Personal ePresence

Effectively managing ePresence is not only a fundamental component of successful virtual or eTeams; it is also necessary to maintain personal boundaries as well. How do individuals organize and manage this presence?

One can view ePresence as a continuum, from never available electronically, to always available, with a choice of being available through several technologies, depending upon circumstances and need. It simply is not realistic to be on the extreme of either side of this continuum, so how does one manage the continuum? Each technology offers multiple levels of managing ePresence. One can customize technologies to allow higher notice of personal presence for those with whom we wish to engage, and lower levels for those with whom we wish to delay or manage contact. Simple technologies such as call-waiting, caller id, and customizable ring tones are already available, with many more features on the way. Technologies such as Skype allow customized settings signaling levels availability along this continuum, as previously noted.

What criteria do I use to make judgments of how available I want to be? Selected example questions for each technology currently prevalent on a global basis are:

Cell Phones

- Do I give out my work cell phone number freely? For personal as well as professional access?
- Do I also carry a personal cell phone, and do I give that number out for professional as well as personal access?
- Do I answer my cell phone without checking caller id first?
- Do I carry my cell phone at all times? Do I turn it on while carrying it? Do I turn it off during meals, evenings, weekends and other times of leisure?

E-mail/Computer/Online Availability

- Do I make myself available online in a visible way to others via instant messaging, or via technologies such as Skype?
- How often do I check for new e-mail?
- Do I respond to personal e-mails during office time? Do I respond to professional e-mails during personal time?
- Do I make myself available for contact at certain times, and how might working in a global team across time zones influence this decision?

Clearly, questions such as those above are ones that, until very recently, were generally not serious issues or questions. Before the era of the internet and mobile phone, individuals wanting to connect with others had to have specialized information such as home telephone number, hotel and room number, and/or travel schedules. For much of our professional and personal time spent away from home or office, we were simply unavailable for contact, and our colleagues and our families understood this
clearly. Separation of work and personal space was relatively easy, and was determined primarily by where we happened to be physically. Today, the separation of professional space and personal space has been obliterated, and maintaining a boundary between these two worlds is extremely difficult. And, we are just beginning to realize the power of new tools for managing ePresence.

Conclusion

The pace of change in engineering design and project management has increased dramatically with the fast-paced development of economies globally, and with the dramatic growth in communications technologies worldwide. Contact between the United States and businesses and manufacturers in India, China, and other Asian countries has increased exponentially, and global virtual teams are becoming commonplace. Being able to work effectively within global virtual teams has become a critical skill for project and design engineers, and for professionals in business generally. Virtual teams are becoming an essential tool for businesses operating in a fast-paced and competitive global environment that demands increasing business productivity, fast adaptation, and achieving competitive advantage.

Managing personal and professional ePresence effectively is an essential skill for engineers working in global virtual teams and is critical not only for increasing professional productivity and value but also for expanding personal flexibility and options. In addition to being skilled at participating in and managing virtual teams, individuals must be aware of how they organize and manage their personal and professional ePresence, and how they maintain and manage personal and professional boundaries. It is important for engineers to become fully competent with tools that enable and control one’s ePresence behaviors and preferences, and consider fully how they can best navigate this new dimension of professional life.

References


Curriculum Vitae