



Real Spaces to Create Virtual Presence

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Summary

- Innovative real spaces are needed to create presence in virtual environments
- Architecture is the guiding discipline to develop this plan
- Networking, broadcasting, supercomputing, audiovisual and virtual reality disciplines need to be coordinated
- A facility manager with comprehensive knowledge is needed to enable a space for virtual environments to function

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As innovation races ahead at light speeds, there is a dire need for someone to also look at the present to collect, correlate and construct a new architecture for interacting with the artificial spaces we are creating. By using advanced architectural design coupled with inspiring space and flow management we can bring together the learned lessons of high end audiovisual techniques, virtual reality and supercomputing to create presence in virtual environments. Though our focus is tightly held by the grandeur of virtual environments, we should not ignore the reality within which these environments exist. The real space in which virtual environments exist and its efficient functionality towards multiple display ends play a critical role in the success of application development and ultimately the creation of presence.

A virtual reality display system by itself is not enough. Currently there are many products commercially available which allow users a fully immersive virtual experience. These systems are fully engaging to us once we enter into their environment. They are not, however, conducive to the working practices that we have been used to. An argument could be made that our work practices must change towards the use of these new systems. I believe, however, that we must design systems to more closely match our working behavior. The former argument is simply a way to accept the current infantile state of

design of virtual environment systems. There is a time and a place for fully immersive virtual environments and this requirement will grow, as applications become more sophisticated. But, there are other ways to construct spaces, which allow for virtual reality immersion plus the accommodation of non-stereoscopic audiovisual environments for the manipulation of data, distance interaction, and systems control. Currently, there is a trend towards creating telecubical environments. Still, these efforts are technically oriented focusing solely on the immediate display area. We need to broaden our scope towards an overall methodology which satisfies many programmatic functions.

Advanced audiovisual systems have been a significant part of the corporate elite culture for over ten years. Video conferencing and presentation rooms have always been the crown jewel of technology for most major corporations. Though, these systems have proliferated through corporations they are just now becoming known to the academic community. As the cost for these systems have been steadily dropping, they have become more and more available as viable options for researchers and academics to consider. These audiovisual systems coupled with the advanced supercomputing and networking applications creates a wonderful opportunity to create a dynamic environment. Furthermore, with the addition of projection based virtual reality environments the potential to construct environments to handle a multiple of disciplines is really exciting.

Architecture is the fundamental discipline to link all of these components together. By using architectural methodologies to create a process where each of the required components (audiovisual, supercomputing, networking, broadcasting, virtual reality, and systems support) are synthesized. A complete unified design of an efficient, working, virtual environment can be created. A lead architect can meet individually with all these disparate groups and incorporate their needs into a master plan for building the ideal space. It is the inherent nature of the architectural profession to analyze and perform such functions. The architectural profession will also be able to guide the design plan through the rigors of build out and construction phases. However, developing spaces for virtual environments is very new. Architects will need to learn how to communicate with people from very different cultures and need to be able to reach out for help in this area when needed. Architects will also need to think in terms of traffic flow and how groups of people interact with these environments so the lessons learned from the entertainment industry should also be incorporated into this design process.

After a space for virtual environments is built the job is far from over. It is at this point where facility managers need to inhabit the space and control the programs and work environments. These facility managers must also have been involved in the evolutionary process of the Architect. The ultimate burden to enable the virtual environment space to function rests on the shoulders of the facility manager. This position is not to be taken lightly. A Virtual Environments Manager will need to be able to cross many varied disciplines and have a general knowledge of networking, supercomputing, audiovisual and virtual reality environments, not to mention program management and marketing. The programmatic goals of the facility could dictate additional infrastructure requirements. In creating a comprehensive audiovisual backbone for the entire facility, the possibility for collaborative broadcasting and/or interaction is great. Separate from

collaborative environments between similar environments, broadcasting to lower non-interactive levels of visualization should not be dismissed. To enable this, an advanced in house audiovisual control station can handle these types of broadcasting needs.

In conclusion, the components for creating a dynamic space for enabling virtual environments lay all around us. It requires an open minded architect to bridge the many disciplines and create a plan which can efficiently incorporate all the needs and functions demanded by such an environment. Virtual environments demand the synthesis of multiple professions into a single real space. By using an architectural methodology as a binding mechanism, a comprehensive design can be developed and the end goal of creating presence can be achieved.



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