

## Essay

# Adapting Technical Theatre Principles and Practices to Immersive Computing and Mixed Reality Environments

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To envision the future of technology, we would do well to first look to the past. The past provides a vocabulary of possibilities which can be rearranged and supplemented with fresh ideas and technology to craft not just new opportunities, but a new language of experience. If the future consists of virtual, augmented or mixed reality events in pervasive, ambient or ubiquitous computing spaces, much inspiration and practical guidance may be gained through the examination of principles and practices associated with contemporary and traditional live performance.

Though my professional background is in web programming, development, and design, I've spent the last two years apprenticing to the stage, with an eye towards technologies which will eventually revolutionize live events. Working in technical theatre as an assistant stage

manager, carpenter, electrician, stagehand and bit part actor, I've learned firsthand traditional stagecraft techniques and lore (practical wisdom transmitted on the job in the form of storytelling) going back – in their essence – countless generations. Though the milieu of the theatre is flexible enough to accommodate a tremendous variety of special events and performances, within the West and within the United States in particular, a consistent methodology and process has developed whereby a show concept is taken from a written script through to a finalized performance. The person who typifies and oversees this process within the business of the theatre, perhaps most completely, is the stage manager.

If a staged dramatic event, such as a play, were compared to a computer program, the playwright would be the programmer. The playwright determines the basic parameters of the event: what happens when and where (setting), how it happens (dialogue and dramatic action),

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and who it happens to (the cast of characters, or *dramatis personae*). The playwright, in a sense, outputs a script as his source code. The artistic director, meanwhile, interprets this source code according to his or her artistic vision. The director communicates this vision to designers and production staff, making critical decisions about how the performance *ought to go*. Though these roles may overlap or differ slightly from theatre to theatre, generally the production manager is then the person responsible for assembling the resources, materials and personnel to execute the vision of the artistic director within the context of a particular theatre. However, the stage manager – unseen and unknown by the audience – is the one person whose responsibilities mesh and interface directly with all components of the running of a particular theatrical performance, starting in the rehearsal process and continuing through the actual run of the show.

The stage manager is primarily responsible for recording and enforcing in real-time the aesthetic choices of the artistic director. In a practical sense, this means that the stage manager sits in on the entire rehearsal process, and annotates the script according to the choices of the artistic director. That is, the stage manager literally marks up the “source code” of the script with information pertinent to *this particular instantiation* of the play. These important bits of information generally include: notes about actors’ entrances and exits to and from the stage; blocking – or the motion paths taken by actors during a scene; props and costumes used on a scene-by-scene basis by each actor; and any set changes or scenery pieces to be moved by stagehands or running crew during live performance. Some of this information is indicated in a general way by the playwright who includes stage directions within the script, usually indicated by parentheses and italics (sometimes called “squiggles” in the business). But the stage manager’s notations in these areas make explicit information often only sketched out or implied in the stage directions.

From this information collected, modified and finalized over the course of many weeks of rehearsals, the stage manager creates what

is called a “prompt book” or, more inclusively, a “master book.” Based on the script itself, the master book charts not only the above information, but also has embedded within it essential timing cues critical to the running of the live performance. These most commonly include light cues and sound or music cues transmitted to light board and sound board operators (though stage managers may sometimes control one of both of these boards themselves – along with other entertainment and show control technologies), along within timing cues transmitted by cue-lights or headset to actors and crew backstage to take specific actions at pre-determined times within the show. During live performance, this collection of practices performed by the stage manager, who is watching the show from a booth behind the audience, is known as “calling a show,” and is in some ways analogous to what an orchestral conductor does during a symphony, except it may include not only musical elements, but technical and artistic elements as well. Thus, the master book – created and maintained by the stage manager – contains a detailed road-map governing how the source-code of the playwright’s script is to be executed in real-time during the run of a show. As soon as a show reaches opening night, the stage manager becomes solely responsible for making certain that this road-map is followed – to the letter – whether the show lasts for just a few days, a period of weeks, or the course of several years.

The stage manager also acts as the hub of communications between the producers, the director of a performance, the actors and performers, technical staff and even house management staff assigned to audience hospitality services. In the United States, member stage managers are also responsible for making certain that a production strictly follows union rules, as dictated by Actors’ Equity Association, the American union of stage actors and stage managers. The role of stage manager within the theatre, then, is that of a Renaissance man with experience and expertise in all aspects and stages of theatrical production, but also that of an detailed organizer and hands-on diplomat,

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