# 10 Common Project Pitfalls and How To Avoid Them

*by Garry Musgrave, CTS-D*

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## Introduction

Presentations, attractions, and exhibits have become increasingly more sophisticated. All the architectural enhancements, signage and graphics, and informational goals can be rendered worthless, however, if the core message, entertainment piece, or interactive element does not function. ***The success of the experience is entirely dependant on the message delivery systems***. Unfortunately, these very key systems are often not subject to the same rigorous design and specification processes as the infrastructure.

Not paying sufficient attention to the design and specification of a project's audio-visual systems can result in a number of pitfalls. In this article we list the ten most common problems, and tell you how they can be prevented.

## Design Pitfalls

### 1. Design not flexible enough to accommodate change.

**Problem:** *A complex mixed-media presentation is coming together on site, and a concept that seemed good in design simply doesn't work. The Producer wants some significant changes, and is told that "**everything will have to be re-wired**," and "**we'll need another week!**"*

**Solution:** During the design of an audio-visual system for display or exhibit use it is vital to build-in flexibility and programmability for all foreseeable changes. This can be done by using a top-down, modularised approach to the system design. The changes that are allowed for should not necessarily be restricted solely to future expansion of the system. Certain kinds of presentations need extra flexibility (often appearing to be overkill) due to their very nature. A design consultant who understands this process can accommodate the need for changes in the design so that they can occur with little or no extra cost or delay. Here are two typical examples:

> An attraction that features an entertainment piece needs to be adjusted considerably to make all of the elements (e.g.: animatrons, video heads, lasers, pyrotechnics) compliment the main program – usually video or film projection. In these situations, there can often be significant changes needed vs. what was originally expected – the Producer is seeing everything come together for the first time, and needs the flexibility to change parts that don't work together.
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> A well-scripted, highly-interactive show that meets all of the Producer's expectations needs to be significantly re-vamped after opening because the public do not interact as expected.

### 2. Early adoption of leading-edge technology.

**Problem:** *A high-tech exhibit that must cycle 50 times a day, seven days a week relies on the latest leading-edge technology to make it unique. Unfortunately, it is down more often than working.*

**Solution:** While the A/V components of presentations, exhibits, and themed attractions must always ***appear*** to be leading-edge – this does not always mean that leading-edge technology should be used! A common mistake is adoption of a new technology before it is fully proven and de-bugged – referred to as "bleeding-edge" technology. This can be avoided by applying a thorough knowledge of all available technologies to the problem, and selecting the most effective and practical solution with the least risk. If an emerging technology must be used, the potential problems must be made known to all concerned, and anticipated in the design.

### 3. Unnecessary customisation of existing hardware/software.

**Problem:** *A control system is selected for a presentation theatre. It was not actually designed for this use, but can be made to work with some custom programming and a couple of "black boxes." Two weeks after opening, the show is crashing and when it **does** work there are compromises.*

**Solution:** There are times when custom development cannot be avoided. Often, however, this situation arises when **trying to shoehorn one particular product into a project** – other products may exist that don't require modification. Whenever custom product is included in a design, the reliability (and even ability) of the system can be seriously impacted. There is invariably a de-bugging cycle that will continue past the completion of installation. This practice should be avoided at all costs by researching ***all*** available products or systems, and selecting one that requires little or no customisation.

If customisation cannot be avoided, sufficient time should be allowed for full-scale de-bugging (i.e.: the whole system is installed and operating). Further, all affected parties should be aware of this situation up front. Also vital is a very detailed performance specification outlining exactly how this customisation is to operate and perform. This will help prevent a situation where the contractor and owner (or producer) disagree on what was intended.

## Bidding Pitfalls

### 4. Bids are well in excess of budget.

**Problem:** *The A/V budget is $100,000, but the bids range from $150,000 to $250,000.*

**Solution:** There are generally two causes for this situation:

The design was not developed in sufficient detail during the concept and design phases of the project so that the original budgets could be accurately set (we know of project budgets that were set based on a previous "similar" project, with little regard to the requirements of the current one!).

The A/V specification was not sufficiently detailed to indicate all of the equipment, its expected quality, and the full scope of work. In this case, bidders are forced to make assumptions, and may even be adding-in generous contingencies to cover the vagueness. One indicator of this problem is a wide spread in the bids.

### 5. Bids can't be accurately compared.

Unless a properly written, detailed audio-visual specification forms part of the bid package, the bidders are not bidding on the same basis **and bids cannot be compared**. In the complete absence of a specification, you do not really have bids, but, rather, a series of proposals from the various bidders. These are based on vague requirements and assumptions, and will differ widely from each other. In this situation, not only is a comparison of the bid prices meaningless, but there is no guarantee that ***any*** bidder's proposal will actually meet the needs of the project.

## Installation Pitfalls

### 6. Contractor continually demands extras.

**Problem:** *As the installation progresses the contractor keeps bringing up problems, claims they are fixable for an extra fee, but that they don't fall under the original scope of work.*

**Solution:** The lowest bidder may be the lowest bidder not because of competitiveness, but because they overlooked or underestimated something. Some contractors routinely underbid, hoping to "make it up on extras." Unless a detailed technical specification exists clearly defining the scope and quality of work, you have no ammunition against this practice.

### 7. Dispute over function and intent of system.

**Problem:** *During the installation, it becomes evident that the system being installed is not what was expected. The contractor claims that the system is what was asked for, but the owner/producer disagrees.*

**Solution:** This can be a nasty situation that can only be prevented when the system's performance, function, and quality are clearly documented in a specification that forms part of the contractor's agreement. This benefits both the owner and the contractor.

### 8. Training and documentation are not provided.

A frequently overlooked part of system installation is training of operations and maintenance staff. Even more frequently lacking is proper system documentation. Both should be contractual requirements laid out in the system specifications. Further, you should have someone competent reviewing the submitted documentation to ensure that the contractor is providing meaningful, project-specific information – not just a bunch of binders. Documentation is especially important when changes or repairs must be made a few years down the road. Similarly, spares and maintenance items need to be specified and provided.

### 9. System appeared to work fine, but fundamental problems were revealed after Contractor is paid and gone.

Often there is no acceptance or review of the installation by an independent technical consultant. This can lead to a system being accepted with problems, and the contractor being paid off. Getting a contractor back (especially if the required fix is costly) can be a nightmare. This can be avoided by having an independent A/V consultant review the site work on an on-going basis, and perform acceptance on the completed systems. Acceptance tests and system adjustments should be detailed in the system specification. Since the requirements are clearly defined, a close-out deficiency list can easily be prepared by the consultant – enabling a finite and orderly close-out of the project.

### 10. System works fine but lack of quality workmanship results in failure down the road.

It is quite common for a system to initially operate as expected, but to fail prematurely due to poor workmanship. This is similar to #9 above, and can be avoided by a specification that details workmanship standards and practices. In addition, a periodic review of the on-going installation work and an acceptance ***must*** be done by an independent third-party.

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