Arts Management &
Technology Laboratory

Assistive Technology in Performing Arts Organizations

By

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INTRODUCTION

Arts organizations want to attract a diverse audience into performing arts venues. While challenges surround the type of programming an arts organization is able to produce or present, opportunities are available for audience diversification by providing a safe and welcoming environment for audience with disabilities. In many ways, the Americans with Disabilities Act (ADA) helps to ensure that arts organizations provide, at the very least, a legally safe physical space for all patrons. But few requirements are included among those provisions to provide programming that creates an optimal experience for all patrons.

Throughout this paper, the opportunity to provide arts programming that creates an optimal experience for all patrons is referred to as "the accessibility initiative." This initiative moves beyond compliance with the ADA to focus on removing barriers between artistic programs and the patron. It challenges arts organizations to keep up-to-date with technology in order to provide efficient access

for people of all abilities. The accessibility initiative offers an opportunity to understand patrons and better accommodate their needs, thereby increasing audiences and creating stronger relationships with arts patrons. It is an opportunity for arts managers to learn how to provide supports to serve the entire community.

This paper addresses some common barriers surrounding diversity and inclusion, attempts to eliminate assumptions, and seeks to broaden understanding of the use of assistive technology at the national level. It presents a national perspective on the various assistive technology tools that performing arts organizations currently offer to patrons with sensory disabilities. After establishing this framework, the paper focuses on the feasibility of implementing two specific assistive technology tools by arts organizations: open captioning and audio description services.

WHAT IS ASSISTIVE TECHNOLOGY?

Put simply, assistive technology is a term that includes assistive, adaptive, and rehabilitative devices that assist individuals with disabilities. Within an arts organization setting, assistive technology is any provided service that uses technology to create a better experience for patrons with disabilities and provides further access to an event, performance, gallery, or exhibition. Assistive technology includes:

- Large print and braille playbills
- Audio description
- Captioning (open or closed)
- Sign language interpretation
- Accessible seating
- Sensory-friendly performances

The options are extensive for arts organizations, and vary from low to high technologies. For example, accessible seating, which includes seats for patrons using a wheelchair and their guests, is required by the Americans with Disabilities Act of 1990 and is a rather low-tech service. Audio description, however, is a high tech service that is typically used for patrons who are blind or have low vision.

THE NEED FOR ACCOMMODATION

In 2012, the Annual Disability Statistics Compendium conducted an American Community Survey and found that among the United States, 38.4 million individuals had a disability—a prevalence rate of 12.3 percent. Within each state, the prevalence rate ranged from 9 to 21 percent of the population. This rate, while not high, is growing and represents a proportion of the community that is not yet—but could be—fully represented in performing arts audiences. The use of assistive technology is an opportunity to bridge the gap between the actions on stage and the patrons attending the performance, while building a new, more diversified audience.

ONLINE SURVEY

STATEMENT OF PURPOSE

To better understand the current use of assistive technology at performing arts organizations across the country, the author distributed an online survey in October 2013. The results provide a national perspective on the use of assistive technology for individuals with sensory disabilities.

DESIGN

The online survey consisted of ten items (see Appendix). Responses were anonymous; respondents listed the genre of art their organization presents and the city and state in which their organization is located. Other items collected information on the types of assistive technologies used by the organization, how often they are utilized, funding required, and the impact of those technologies on their audiences.

DEMOGRAPHICS

The survey began on October 29, 2013 and closed on November 13, 2013, and yielded responses from 60 unique arts organizations representing 36 cities in 21 states. Exactly half of the respondents indicated the primary focus of their organization was theater, while the other respondents identified their organizations to focus on music, dance, or museums, or to be an arts council. Those that responded 'other' mostly consisted of performing arts venues or college venues that offer a range of programs.

Organization Type	# of Respondents
Theatre	30
Museum	9
Music	7
Arts Council	5
Other	5
TOTAL	60

RESULTS

Survey findings indicate arts organizations are making great strides to provide assistive technology services. Among respondents, nearly 77% offer American Sign Language and 70% offer large-print programs for their audiences. The least common service identified by respondents was Braille print programs, which 38% of respondents indicated their arts organization offer. Other forms of assistive technology identified by respondents are open captioning (48%) and audio description (57%).

When considering these survey findings, several factors likely contribute to the prevalence of assistive technology services among arts organizations. First, the type of arts organization affects which services are offered. For example, a museum or arts council may not have program booklets for patrons, and may contribute to braille print programs appearing among survey respondents as the least frequent assistive service offered. Second, the level of technical work and cost required to offer assistive services may also contribute to which services an arts organization provides. American Sign Language and large-print programs require less specialized equipment, which may make these services easier to implement. Conversely, audio description and open captioning require a significant amount of planning time and specific equipment to work properly in any venue.

To better understand technology acquisition for open captioning and audio description, the survey also asked respondents how their organizations acquired the equipment for these assistive technology devices. The majority, 57%, allocated funds from the organization's operating budget, while 40% received grants for accessibility work or assistive technologies.

Using these survey findings as a glimpse into the national perspective of assistive technology, arts organizations spanning several genres appear to working diligently in the accessibility initiative to provide programming opportunities for all patrons. Most performing arts organizations appear to be starting with those assistive technology services that have less risk and then are exploring services with higher technical elements, such as open captioning and audio description. These two assistive technology services are offered less than other services among performing arts organizations, perhaps due to the more technical work required and higher costs.

FEASIBILITY

An arts organization must consider two factors before offering assistive technology services: functionality and cost. It is necessary first to have an understanding of how each assistive technology functions and operates. Because various options and types of equipment exist to provide assistive services, the functionality must

best fit the performance venue and the management capabilities of the organization. As for cost, several options are available to fund assistive technology services. When determining how potentially to fund each service, first assess the relative cost to own, rent, and operate the services. To determine the feasibility for an arts organization to implement two services reported less frequently by survey respondents, the functionality and cost of open captioning and audio description is discussed in detail below.

OPEN CAPTIONING

Functionality

The Kennedy Center's [Accessibility Tip Sheet](#) defines captioning as "a word-for-word transcription of what the performers are saying or singing as well as sound cues like 'phone rings' or 'knock at door.'" CART, which stands for computer assisted real-time translation, is an alternative name for the captioning services. Open captioning utilizes a LED sign system placed just out of the "stage picture" of a performance. The LED sign is typically about four feet in length and holds two to three lines worth of scrolling text. However, LED signs are not the only option, as open captioning can be displayed in several formats, such as television screens and projectors.

Open captionaing text is displayed synchronous with the actions presented on stage. If the performers never vary the text of the performance, a script can be pre-entered into the computer. If the performance includes

improvisation, an evolving script, or no script at all, then the text must be entered as it is happening. In these situations, a captioner is hired to manually operate the flow of the text.

Captioning is typically utilized to serve patrons whose hearing loss is too severe to benefit from the use of assistive listening devices and who either do not know or do not use sign language. However, everyone in the audience is able to see the open captioning screen and may find some benefit from the service. The LED screen is usually located in an area that provides little distraction for audience members who do not wish to utilize this service.

Cost

According to the [Theatre Development Fund](#) (TDF), hiring a captioner for one performance costs, on average, between $1,200 and $1,800. This cost includes formatting the script, previewing the show, synchronizing text scrolling, and providing the display. This estimate is fairly standard across the country, as TDF works in several states and does consultation for these services. However, less costly options may be available, depending on the software and equipment already present in-house. If an organization already has a trained

captioner, for example, LED screens can be purchased or rented through various companies. Below are examples of vendors, recommended by the Kennedy Center:

- **Electronic Signs** developed software compatible with an LED sign so that anyone can operate the captioning. It sells both the LED sign and the software as a package. The sign is also compatible with standard CART software so that it can be used for real-time captioning.
- **Figaro Systems** has a back-of-the-seat system originally designed to provide surtitles for opera. It is currently working on a handheld option. The system will interface with standard CART software so that it can be used for real-time captioning.
- **Personal Captioning** has several types of systems. The most advanced is a small, portable wireless FM unit. It is currently developing two other systems, including a PDA and a unit that clips to glasses.
- **Sound Associates,** developed I-Caption, a hand-held device that can be used to provide captioning and audio description.

In addition to these four larger companies, the [Described and Captioned Media Program](#) provides a list of all captioning-related services offered throughout the United States.

Costs
Open Captioning

- Hiring a translator
- Renting captioning equipment (LED screen and software)

Estimated Cost = $1,800 per performance

AUDIO DESCRIPTION SERVICES

Functionality

An audio described performance is a performance where a trained describer explains what is happening on stage during pauses in the dialogue. Typically the describer points out visual elements of the stage, costumes, and the movement of the actors.

To provide this service, organizations must have access to assistive listening devices (ALDs), which are technologies to enhance the ability of a person with a hearing loss to hear better. ALDs consist of a microphone patched directly into the sound board/mixer of the theater and a headset worn by the patron. Alternatively, ALDs are being used by arts organizations to reach the blind community, allowing awareness of the movements and actions on stage for patrons who are blind or have low vision. There are four types of ALDs that are used, but the most common for audio description are the FM System and Infrared System:

- **A hardwire system** is a closed system in which sound can only be within the cables - similar to a headset plugged directly into an iPhone jack.
- **An induction loop system** broadcasts electromagnetic current within an area designated by cable antenna.
- **An FM system** is like a small radio station with pre-set frequencies
- **An infrared system** has a receiver placed in the line of sight of the emitter and sound is transmitted through infrared waves.

Cost

According to Kristen Link, Director of Education and Accessibility at City Theatre in Pittsburgh, PA, the initial investment of audio description equipment for the organization was about $5,000. This cost included the transmitter, antennae, approximately 30 receivers, and

headphones. A performing arts organization may incur an additional cost per performance for a trained audio describer, or an in-house staff member can complete a three-day training session and provide describing services, thus saving the per performance cost.

The Described and Captioned Media Program provides an extensive list of all description services offered throughout the United States. Another option is to use a contracted service for both personnel and equipment.

Costs
Audio Description

- Transmitter
- Antennae
- Receivers and Headphones

Estimated Cost = $5,000 initial investment + describer per performance

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RECOMMENDATIONS

According to survey findings, of the respondents whose organizations offer assistive services, 58% schedule open captioning into the organization's season, and 68% schedule audio description for at least one show per performance run. A full season with provided assistive technology services can become quite costly, but resources are available to reduce expenses in a variety of ways:

- **Partnerships –** If other organizations in the region own materials for open captioning or audio description, an opportunity may exist to build a partnership and borrow or trade assistive technology equipment.

- **VSA –** This international organization on arts and disabilities (formerly Very Special Arts), provides open captioning and audio description equipment for its affiliates in several areas of the U.S. It has also created "hubs" to share this equipment with surrounding organizations, free of charge. While VSA is not the direct contact that fosters the shared services, individuals can contact local VSA affiliates to inquire to borrow equipment.

- **Grants –** Either locally or at a national level, several grant-making agencies look for arts organizations that expand their audiences and diversify programming services. Survey findings indicate that 40% of respondents received grants to support assistive technology services, allowing organizations to make initial investments and then to continue these services.

Although the cost of the initial investment for assistive technology services can be sizable, the cost of upkeep for these technological devices—for the most part—is minimal. If funds are available, the cost to purchase will save ongoing costs (and hassle) to rent or borrow equipment, and will ultimately save the organization money and time as a result.

Finally, train internal staff on how to use whichever assistive technologies are acquired. If the equipment and software can be purchased outright, staff members should be trained, for example, on manually operating the open captioning services for performances with permanent scripts. Also explore available training programs and opportunities to learn best practices in audio description.

CONCLUSION

Arts organizations are already beginning to understand the importance of providing assistive technology services that supplement artistic programming. Potential positive outcomes for arts organizations in doing so are to reach a diverse audience, increase patron loyalty, and create an inclusive environment surrounded by the art. At the same time, the cost and time to implement these new technology services are challenging arts organizations to discover the true needs and wants of their communities

By understanding assistive technology devices, how they work, and the feasibility of providing them, arts organizations can begin taking small steps to provide these services throughout the scheduled season. Implementation of these services requires planning, time, and effort, but the potential outcomes yield great benefits for the arts organization that provides them, and moreover, to the community it serves.

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APPENDIX A

Survey Items and Responses

1. Type of organization

TYPE OF ORGANIZATION	NUMBER
Theatre	30
Music	7
Museum	9
Arts Council	5
Other	5
TOTAL	**60**

2. Please provide the city and state where your organization resides.

States	City 1	City 2	City 3	City 4
Arizona	Phoenix	Tempe		
California	San Francisco (2)	Costa Mesa (2)	San Diego	Los Angeles
Colorado	Aspen	Denver		
Connecticut	New Haven			
Florida	West Palm Beach	Miami (2)		
Illinois	Chicago	Ilmhurst		
Iowa	Iowa City			
Maine	Brunswick			
Maryland	Bethesda	Hagerstown	Wash. DC (3)	
Massachusetts	Boston (4)	Pittsfield		
Michigan	Grand Rapids			
Minnesota	Minneapolis (2)			
New Jersey	Princeton	Ewing	Millburn (2)	
New Mexico	Santa Fe			
New York	NY City (4)	New Paltz		
North Carolina	Greensboro	Durham		
Ohio	Columbus			
Pennsylvania	Pittsburgh (13)			
Tennessee	Nashville			
Texas	Houston			
Wisconsin	Hartford			

3. Please check all assistive services your organization uses:
Audio Description - 34
American Sign Language - 46
Braille Print Programs - 23
Large-Print Programs - 42
Open Captioning - 29
Other – 6

4. Does your arts organization have at least one staff member dedicated to accessibility services?
Yes, that is his/her only responsibility - 9
Yes, but he/she has other duties - 41
No – 10

5. If your organization uses Audio Description, how often are these services offered?
Always (every performance/event/in every gallery/etc.) - 4
Sometimes (select performances/events/galleries/etc.) - 23
Provided upon request only (not scheduled into the season) - 7
We don't provide Audio Description services – 20
Skipped – 5

6. If your organization uses Open Captioning, how often are these services offered?
Always (every performance/event/in every gallery/etc.) - 7
Sometimes (select performances/events/galleries/etc.) - 21
Provided upon request only (not scheduled into the season) - 8
We don't provide ASL services – 20
Skipped – 5

7. How did your organization acquire assistive technology devices (OC and/or AD)? (select all that apply)
We received a Grant -24
We allocated funds from our operating budget to purchase devices - 34
We rented devices - 11
We don't use assistive technology devices - 10
Skipped: 3

Open-Ended Questions Asked (responses not included here):

8. Please explain why your organization uses assistive technology.

9. What challenges does your organization experience in providing assistive technology?

10. Briefly describe your organization's audience that is using assistive services. If available, provide an estimate of attendees per offering and their reactions to using the assistance provided.