

ADRC-TAE Issue Brief: Electronic Kiosks

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INTRODUCTION

One challenge many ADRCs face is how to provide services over large geographic areas with small numbers of staff. Several states have chosen to use kiosks as part of their outreach and marketing and information and referral components. The term kiosk can refer to anything from a display of written materials to an interactive computer terminal, but all kiosks are self-service, relying on the user to search for or input information on his or her own.

Kiosks allow ADRCs to have a presence in parts of their service areas that do not house the physical location of an ADRC, and to place materials in settings where they are most likely to reach consumers – places like senior centers, libraries, the offices of state agencies, and even shopping malls.

BACKGROUND

ADRC Grantees Using Kiosks

Several grantees have included the use of kiosks in their strategy for future ADRC expansion, planning to locate electronic kiosks in places like income support field offices, libraries, and senior housing sites. Minnesota is already using community-based computers to offer electronic access to its ADRC.

Minnesota

Minnesota has developed the MinnesotaHelp Information Network, a virtual and physical network of information and assistance access points, known as Network Portals, which include an interactive online resource database for consumers and providers (www.MinnesotaHelp.info), written materials, toll free telephone assistance through the Linkage Lines, and referrals for long term care consultation with a social worker or public health nurse. Access to the Network is available in places where people currently seek and receive information such as health clinics, community agencies, hospitals, pharmacies, libraries, senior centers, faith communities, social service and public health offices, and places where they work in addition to the Web or the telephone. One of the Hennepin County Network Portals is located in the Brookdale Library. Four computer terminals have been configured to feature aging and disability resources and the ADRC has trained librarians to access long term care information through MinnesotaHelp and the Linkage Lines. The library is hosting ADRC training and outreach activities for professionals and consumers. The collaboration between the ADRC and the Brookdale Library will be expanded to include a number of the other libraries in the Hennepin County Library system. The critical component to the resource center is the availability of a new web based tool that helps users complete an informal assessment of long-term care needs including:

- a. Activities of daily living
- b. Caregiver and familial supports
- c. Health care needs
- d. Financial needs and
- e. Screening for dementia and Alzheimer's disease.

Once the questions are complete, a community resource plan can be developed and then saved or printed at the resource center allowing the user to then seek further assistance in implementing the plan either by self directing access to the services, or seeking the services of a long-term care consultant. The tool also contains important research from the University of Minnesota Center of Aging the makes long term care recommendations. The tool, slated to be launch in the spring of 2006 will be available at resource centers and via the www.minnesotahelp.info web site. The kiosks are organized around the same topics as the tool, ensuring a common theme so that consumers leave with a clear direction.

In addition to web-based kiosks, Minnesota is also planning to locate kiosks with printed information in clinics and hospitals, libraries, housing offices, human resource offices, and community and senior centers. The kiosks will be located in 325 locations across the state and each will contain 12 cards on various topics including planning for future health care needs and caregiving.

Other Organizations Using Kiosks

Most people are familiar with and use kiosk technology in their everyday lives, particularly in the form of automated teller machines (ATMs) but also for self service check-in at the airport, to printing digital pictures at the drugstore. As Minnesota's experience illustrates, kiosks are also being used to deliver services by government agencies and non-profits.

- The Los Angeles County Department of Public Social Services (DPSS) uses self-service kiosks to provide information on its programs and services to clients. Kiosks are available in forty-six DPSS offices. The LA County DPSS serves 9.8 million ethnically and culturally diverse residents over an area of 4,083 square miles. Kiosks allow DPSS to deliver ever-changing program information to clients in multiple languages as a supplement to staff resources.¹
- Planned Parenthood of the Metro Washington Area (PPMW) has installed kiosks in its waiting rooms that offer health information and promote voter registration. In 2006 PPMW plans to add patient satisfaction surveys to its kiosks. The kiosks reduce the amount of time staff spend answering general questions about health care, and the two kiosks currently in use attract more than 100 visitors per week.

¹ Success Stories: LA County Department of Public Services. Available: http://www.touchvision.com/success_ladpss.html

- The Nevada Department of Motor Vehicles (DMV) started installing kiosks at its offices in 2004. Customers can use the kiosks to renew vehicle registration and driver's licenses, and get insurance verification; documentation is dispensed on the spot. The machines take both credit cards and cash, accommodate Spanish-speaking customers, and have an average transaction time of under two minutes. The Nevada legislature earmarked \$2 million to fund the project for two years, and the DMV pays a 5% commission on each transaction. Over the two years of the project, customers have used the kiosks for nearly 300,000 transactions.²
- The federal Department of Housing and Urban Development (HUD) has 110 touch-screen kiosks in public places like shopping malls, grocery stores, and transportation centers, around the country. Individuals can use the kiosks to search for housing and learn about HUD programs like FHA mortgage programs, and then print out their results. In 2004 HUD began incorporating information from partnerships with other federal agencies as well. The goal of the kiosks is to make HUD services available to individuals who might not otherwise seek them out or be able to access the HUD website because they don't have internet access. HUD guidelines require that kiosks be placed within 5 miles of the target population of low income individuals, and HUD contracts with an organization who monitors the kiosks and refills printer paper and makes repairs as necessary.³
- In March 2003, six computerized health screening kiosks were installed at locations in downtown Los Angeles that serve homeless populations, including medical centers, a needle exchange location, and homeless shelters. Users fill out a brief survey, and use a touch-screen menu to access health information and a customized resource directory. The kiosk also includes monitors that can measure blood pressure, heart rate, and body mass, and a phone so that users can make appointments with health care providers. The kiosk prints appointment reminders, and also vouchers for food, transportation, or health supplies that can be redeemed after a scheduled appointment.⁴
- In the wake of Hurricane Katrina, the City of New Orleans was faced with massive demands for building permit but had less than half its usual building and permits staff. The city set up internet kiosks in public buildings around the city, loaded with software preprogrammed to assess damage. The user types in the address of the property that need to be rebuilt, and the system will determine the likely extent of the damage based on, for example, the level of floodwater on a given street, and whether the homeowner can rebuild and whether FEMA will pay for the rebuilding. City supervisors review all applications, sending out an inspector if there questions, and the homeowners can return to the kiosk the next day and print out their building permits.

² <http://govtech.net/news/story.print.php?id=90618> and <http://www.jcm-american.com>

³ <http://www.hud.gov>

⁴ <http://www.ihealthbeat.org/index.cfm?Action+dspItem&itemID=99674> and <http://www.losangelesmission.org/newsroom/nr2003-4.html>

Before the hurricane, New Orleans issued an average of 45 building permits a day; with the new system the daily average is around 625, with much reduced waiting time.⁵

- The Arkansas Office of Motor Vehicles (OMV) has placed kiosks that allow individuals to renew their vehicle tags in Wal-Mart stores. Customers enter their information at the kiosk, which then checks the state Motor Vehicles database and prints an invoice. The invoice can be paid at the cashier, along with the rest of a customer's shopping. The customer then returns to the kiosk, scans the bar code on the paid invoice, and new vehicle tags are printed at the service desk. OMV paid Wal-Mart \$1 per transaction for the first 18 months of the program, and now pays 50 cents per transaction.⁶
- In the early 1990s, Tulare, California installed 30 kiosks that accepted applications for Food Stamps, Medicare, and Aid to Families with Dependent Children (AFDC). Applicants fill out an application form at the kiosk and that information is transmitted to the county's mainframe where social workers who conduct mandatory follow-up interviews can access it. Tulare is rural and its population includes large numbers of refugees from Southeast Asia, so the kiosks can be accessed in English, Spanish, and four Indochinese languages. In addition, the kiosks feature narration by local community leaders that guides users through the program. The county reports that 85% of applications are received through the kiosks, the administrative error rate has dropped to zero from 19%, staff turnover has been reduced, and that it has saved \$108 million over six years.⁷

Paper-based Kiosks

A paper-based kiosk consists of a display or rack containing booklets, pamphlets, flyers, or other written information that consumers can pick up and take with them. Because they don't incorporate computers or other expensive technology, paper based kiosks have some obvious advantages in terms of cost. An ADRC would only need to secure a location, develop and print materials, and ensure the kiosk was kept stocked with information. However, paper-based kiosks are not interactive and cannot respond to information about a client's particular situation.

KIOSK TECHNOLOGY

As the name suggests, electronic self-service kiosks are based on some form of computer technology and are interactive, allowing a consumer to perform tasks like searching for information or filling out forms. The components of an electronic kiosk can vary widely, from a designated computer terminal to a freestanding enclosure with a touch screen, and their software

⁵ Bob Tedeschi, "City Hall Gets Much More Efficient, Despite a Hurricane (or Two)", *New York Times*, April 5, 2006.

⁶ Emily Montandon, "Out and About Service", *Government Technology*, January 6, 2004. Available: <http://www.govotech.net/magazine/story.print.php?id=83618>

⁷ LSC-OIG, "Increasing Legal Services Delivery Capacity Through Information Technology," August, 1996. Available: www.oig.lsc.gov/reports/other.htm

capabilities can also be varied. The selected hardware and software components included in a kiosk determine its price which can vary widely.

Before considering technical specifications, ADRCs should think about several strategic issues.⁸

1. What do you want to accomplish using kiosks?
 - Provide access to information?
 - Provide access to an on-line data base?
 - Automate the information and referral process?
 - Allow consumers to apply for services on-line?
2. Who will be using the kiosks, and what are the needs of those populations?
3. Will the kiosk be connected to the internet, or a self-contained hard drive?
4. Where will the kiosks be located? Public, high-traffic locations may work well for information-only kiosks, but any kind of longer and more interactive use may require more privacy. Will the location be secured in some way?
5. How will you measure kiosk performance?
 - Number of uses?
 - Customer satisfaction surveys?
 - Will you need the kiosk to gather some of this information?

Once you have determined what you would need kiosks to be able to do, you can consider specific components.

Hardware

Freestanding kiosks generally consist of an enclosure, a touch screen monitor, and a personal computer (PC).⁹ The kiosk enclosure protects the computer equipment and can also act as a bill board for the kiosk's services. Enclosures can be made of a variety of materials. All kiosks include a monitor on which information is displayed. Touch screen monitors serve as both the display and the user interface. Touch screens can be simpler to use for consumers and more durable than trackballs or keyboards, but may cost more and present some accessibility issues. There are several different types of touch screens, which have different levels of durability and sensitivity. Organizations may have to balance the damage-resistance of a type of screen with its optical clarity and ability to be manipulated for accessibility.

⁸ Montego Net, "Kiosks 101." Online. Available: <http://www.montegonet.com/kiosks101/primer.html> Accessed: January 30, 2006. Users should note that this primer is offered by a kiosk manufacturer.

⁹ <http://www.slabb.com/about/index.htm> Accessed: January 30, 2006. and <http://www.montegonet.com/kiosks101/primer.html> Accessed: January 30, 2006.

Where the kiosk is placed will affect the type of enclosure and level of security necessary.¹⁰ You could use a standard PC terminal for your kiosk if it were placed in a library, doctor's office, or some other location where there was staff supervision of its use. A kiosk placed in a high-traffic public area like a mall, however, would need to be more durable and secure, bolted to the ground, for example. The average lifespan of an electronic kiosk can range from three to ten years, depending on the quality of the machine and how heavily it is used.¹¹

The PC inside a kiosk typically functions in the same way as a standard desktop PC, allowing the owner to run standard applications and programs. Kiosk may in fact use standard PCs, or may use small-form PCs to reduce the overall size of the kiosk. Adding a printer to a kiosk allows users to print out information and referrals, but can increase hardware and maintenance costs. Hardware will probably be the most expensive part of a kiosk.

Software

The software component of a kiosk displays content, prevents kiosk users from changing the content or using the kiosk for other purposes, and connects the electronic components of the kiosk. While software can be developed specifically for a kiosk application, kiosks can also be used to provide access to existing web sites or applications. When using kiosks with existing content, owners must think about whether that content is well designed for the way consumers at a kiosk will access and use it, and make sure they have additional software to ensure consumers can only use the kiosk for its intended purpose. Remote monitoring software can allow kiosk owners to track usage information, update content online, and receive notification of problems.

Maintenance

Maintenance is an important component of kiosk use because a non-working kiosk may alienate consumers and reflect badly on the ADRC. The prevalence of standard Windows-based PCs in kiosks means that the ADRC's IT staff may be able to handle most content updates and software issues. Problems with hardware may require support from the manufacturer or an outside repair service.

The amount of variation in kiosk components and functions makes it difficult to generalize about either design or price. ADRCs considering electronic kiosks are encouraged to research their options and think carefully about their capacity to purchase and maintain kiosks.

Cost

A number of factors determine the final cost of an electronic kiosk, including size, planned location, and level of customization. An interactive kiosk with a resistive touch screen LCD monitor, standard enclosure, software, and printer, will cost approximately \$5,000 to \$10,000.

¹⁰ "Kiosk Buyer's Guide." Available: http://www.buyerzone.com/retail/interactive_kiosks/buyers_guide1.html
Accessed: May 19, 2006.

¹¹ "Kiosk Buyer's Guide."

Upgrading and customizing components are additional costs that can double or triple the cost of a kiosk. Organizations may be able to save money by looking at used kiosks, although their ability to customize the kiosks will be limited.¹² Renting or leasing kiosks is an option that avoids having to make a large initial investment, however, rates can run \$2,000 to \$2,500 per month and your organization may have to sign a five to ten year contract.¹³

In addition to the cost of the kiosk hardware and software, maintenance, monitoring, and installation must be taken into account when pricing kiosks. Installation costs are generally in the range of \$250 to \$500 per kiosk, not including shipping or the cost of installing custom software.¹⁴ The cost of monitoring and maintaining the kiosk depends on whether these are tasks your organization's IT department can take on, or whether you need to contract with an outside company. Monitoring contracts can cost between \$20 and \$800 per month, depending on the number of kiosks and the level of service.¹⁵

ACCESSIBILITY FOR ELECTRONIC KIOSKS

Under the Americans with Disabilities Act (ADA), the United States Architectural & Transportation Barriers Compliance Board issues ADA Accessibility Guidelines (ADAAG). These guidelines, when adopted as final rules by the Department of Justice, have the force of law. The ADAAG include specific guidelines for how to make Automated Teller Machines (ATMs) compliant with the ADA. Although other types of kiosks are not specifically mentioned in the law or the guidelines, both disability advocates and kiosk manufacturers believe that kiosks are covered by the ADA. Many kiosk manufacturers advertise their products as ADA-compliant. If necessary, the ADAAG provide ADRCs with a reference point to evaluate whether their automated kiosks are physically accessible, and can be found online at <http://www.access-board.gov/adaag/about/index.htm>

The ADAAG guidelines cover mainly physical accessibility issues like clear floor space and reach ranges, along with mandating accessibility for individuals with visual impairments. However, consumers may have a range of physical and cognitive impairments, and ADRCs should try to make their resources as widely accessible as possible. ADRCs may also be using different types of kiosks – from paper-based kiosks offering brochures, to computer terminals in public places, to automated kiosks that resemble ATMs – the meaning of “accessible” will vary with the type of resource.

ADRCs serve target populations who often have physical, cognitive, or functional impairments and therefore, need accessible resources. Approximately 15-20% of the general population and up to 50% of the elderly population is made up of individuals with physical, sensory, or

¹² “Kiosk Buyer’s Guide”

¹³ “Kiosk Buyer’s Guide.”

¹⁴ “Kiosk Buyer’s Guide”

¹⁵ “Kiosk Buyer’s Guide.”

cognitive disabilities.¹⁶ Kiosks may be a good way to make resources available in terms of time and location, but they must also be accessible those with disabilities or other impediments to using the kiosks themselves. Accessibility, then, varies based on both type of impairment and type of kiosk. The chart below outlines common types of impairments, and modifications that can make different types of resources more accessible.

IMPAIRMENT ¹⁷	ACCESSIBILITY MODIFICATION
Difficulty seeing	<ul style="list-style-type: none"> • Spoken input and output • Tactile displays (e.g. Braille) • Enlarging text, changing colors, fonts, and graphics to make them more easily seen.
Difficulty hearing	<ul style="list-style-type: none"> • Visual representation of noise. (e.g. flashing light for buzzer) • Written text and captioning. • Making sounds louder or altering pitch. • Including a headphone jack that allows wear headphones, reducing surrounding noise, or to connect the device directly to a hearing aid.
Difficulty speaking	<ul style="list-style-type: none"> • Using a keyboard or keypad for input.
Difficulty touching or manipulating items	<ul style="list-style-type: none"> • Using spoken input. • Using remote control devices that interface with the kiosk using infrared signals, allowing the user to interact with the kiosk using a configuration of buttons or other controls that suits his or her abilities. • Asking users to confirm input using a separate button, or spoken input.
Difficulty comprehending	<ul style="list-style-type: none"> • Modifying colors, text sizes, and fonts. (e.g. making text larger) • Modifying the level of language and eliminating technical terms and jargon. • Offering a choice of languages. • Slowing down the speed at which information is presented, or making the speed adjustable.

¹⁶ Gregg C. Vanderheiden, Ph.D., "Anywhere, Anytime (+Anyone) Acces to the Next-Generation WWW." Online. Available: <http://trace.wisc.edu/docs/aaa/aaa.htm> Accessed: February 2, 2006.

¹⁷ Adapted from Trace Center, University of Wisconsin-Madison, "User Needs, and Strategies for Addressing Those Needs," 1998. Online. Available: <http://trace.wisc.edu/world/kiosks/itms/needs.thml> Accessed: January 23, 2006.

OTHER RESOURCES

Accessibility

<http://trace.wisc.edu/world/kiosks/> The Trace Research & Development Center is a non-profit research center at the University of Wisconsin, Madison that works to make technology more accessible. The resources available on its website include a compilation of information on accessibility for public information/transaction machines like ATMs and kiosks, links to the relevant federal statutes and regulations, and information on accessible design generally. The Trace Center also developed EZ Access®, a set of software interface enhancements and hardware components that makes electronic devices more accessible to people with disabilities.

<http://www.disabilityinfo.gov> Online site for the New Freedom Initiative. Technology page links to a variety of resources on accessibility and assistive technology.

<http://www.ataccess.org/rresources/webaccess.html> Resources on web accessibility, including pages on making content accessible to individuals with a variety of impairments, and a resource directory of similar sites with accessibility guidelines.