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Visual Scheduling Applications for Mobile Devices

Visual scheduling applications are a type of cognitive support technology that is meant primarily to help those with cognitive or developmental disorders create and maintain daily routines. They work by using pictures rather than text to organize a schedule. Many applications include other features, like sending alerts to remind users of upcoming activities or providing a timer to let the user know how much time is left in their current activity. Depending on the manufacturer or developer, the applications can range in sophistication from being a simple schedule with preloaded visuals to systems with social cues to help people in daily interactions.

While primarily designed for people with developmental disorders, such as those found on the autism spectrum, these applications have a wide range of potential users. People with memory difficulties due to stroke or traumatic brain injury would benefit from reminder/cue alerts. And since they are visual in nature, anyone with text difficulties (like those with Dyslexia or low vision) would find their presentation helpful. It could even be useful to those who don't speak the dominant language of their location due to the universality of many signs and pictures. AbleData.com is a good resource for determining which scheduling applications and devices are a good match for different needs.

Visual scheduling technology is offered either on a dedicated device or as software to be

installed on a device a user already owns, i.e. computer, tablet, or smartphone. The dedicated devices can be prohibitively expensive for many people, and may not be appropriate depending on the user's needs. Dedicated devices often resemble PDAs, and can range in price from several hundred dollars to almost \$2,000. The price and limited availability of these devices can put them out of reach for many, but the visual scheduler application software is much cheaper and can be easily customizable.

While visual schedule software does exist as desktop computer applications, the inherent need for these schedules to be on-the-go makes their mobile counterparts an increasingly convenient choice. At this time, the majority of these apps exist only in Apple's App Store for use on iOS devices, i.e. the iPhone, iPod Touch, and iPad. Although the increasing market share for mobile devices running Google's Android mobile operating system suggests that perhaps app development for these devices will increase ("Nearly Half of American Adults...").¹

One of the most highly recommended visual scheduler apps available from the App Store for iOS devices is the *First Then Visual Schedule* (\$9.99, App Store 3/3/2012) (Keiffer).² This scheduler app works in the same way that paper and pen visual schedulers do, with actions set in sequential order with accompanying pictures. The visuals clearly reference the action indicated, and their large size makes them easy to identify. As the name implies, actions are laid out in a "first _____, then _____" format, allowing the user to see and prepare for the next action. Its different viewing modes let the user decide how many steps to view on the screen at

¹ Pew Research Center quotes 20% of smartphone owners as using an Android device, up from 15% in May of 2011 ("Nearly Half of American Adults...").

² as of 3/3/2012 has a 4 out of 5 star rating on the App Store, and Autism Plugged In recommends it as one to "put on your top iPhone Apps" (Keiffer).

a time. Like many visual schedulers, there is an allowance for customization, and users are able to use their own pictures, captions, and even sound recordings for creating a schedule.

Generally mobile apps are cheaper than the desktop versions or dedicated devices, typically running between \$2.99-\$9.99 USD. While the initial price of the applications is low, what does need to be addressed is the price of the devices on which they are designed to run. The initial price of tablets can range from \$129.99 for the Coby Kyros Android tablet to \$699.00³ for the highest end iPad2⁴, and if a user wants continuous 3G/4G connectivity, the price increases not only for the device, but for the monthly data service plan as well. It is important to note, however, that the majority of the features used in these mobile applications are usable on wifi-only devices, and most are accessible even when offline, so data plans are typically unnecessary. Price becomes an even harder issue to gauge when considering smartphones. Promotional pricing and other retailer incentives often reduce the price substantially. Many smartphones are even free with sign-up.

Additionally, it should be mentioned that the user does not need to be the primary owner of the device- a family member or companion is likely to have access to a smartphone or portable tablet PC. For instance, in March of 2012, the Pew Research Center found that 46% of adult cellphone owners have smartphones, a figure which is up from 35% in May of 2011 (“Nearly Half of American Adults...”). Clearly the opportunity for device ownership exists for these users and their immediate circle.

Many libraries are already developing and releasing apps across the various platforms. Most of these applications are built with a limited service in mind, however, concentrating on

³ As of 3/2/2012 <<http://www.amazon.com>>

⁴ As of 3/2/2012 <<http://www.apple.com/ipad/>>

catalog searches and user account details. Accessibility apps and cultural institutions have yet to intersect in a meaningful way for potential users. Visual scheduling applications offer a unique option to model a widely available technology with a format (visual scheduling) that many underserved users are comfortable with to enrich their experiences at library, museums, and similar institutions.

The most obvious and simple way for a libraries or museums to incorporate visual scheduling in an app would be to create visual tours for their collections. By using the “first_____, then_____” format, pictures of pieces from the collections along with captions saying where the objects or books are can create a sequential route for users to follow on their own. Since devices that host apps often have built-in cameras, visual tours could easily be supplemented with scannable QR code technology. Libraries could extend on their catalogs-as-apps mode as well by including pictures of titles, potentially even allowing users to make reading schedules in a visual schedule format. And since many libraries and museums have free wifi for visitors, downloading these apps on the spot would not be an issue.

These are only a few potential options for cultural institutions to build off the work of cognitive aid apps, specifically visual schedulers. With the expertise of app developers, there are doubtless other innovative features that could be incorporated to add other dimensions to the user experience- and with the relative affordability of the technology, this should be a first resort for institutions. It is important that those who rely on cognitive support aids aren’t forgotten when designing mobile experiences, since they are often not just an add-on for the user, but a way to enhance their experience in a meaningful and significant way.

Works Cited

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