

FINAL REPORT FOR IMLS GRANT # LG-46-11-0088-11

ADMINISTRATIVE INFORMATION

- **Institution:** Brooklyn Public Library
- **Project Title:** Virtual Information Ambassador (VIA)
- **Award Amount and Total Project Cost:** \$25,000
- **Grant Start Date – Grant End Date:** July 1, 2011 – June 30, 2012
- **Project Director Name:** Richard Reyes-Gavilan, Chief Librarian

PROJECT SUMMARY

Over the past decade, virtual reference has become increasingly common in public and academic libraries. It is standard practice for most libraries to offer remote reference services via telephone, instant messaging, email correspondence, or text messaging. To a lesser degree, libraries have experimented with video-based technologies to communicate with patrons who desire a visual component with their online interaction. The majority of these test projects have taken place at academic libraries in university settings, including major public institutions such as Ohio University, University of North Carolina, Greensboro, and Florida State University. These libraries used Skype's voice-over-Internet application to video-chat with patrons. Though highly popular, Skype users may experience delays or interruptions during conversations and network speed can affect the interaction—a notable challenge when considering bandwidth usage during hours of library operation. There has been minimal experimentation with video-based reference or information services in public library systems, with Hennepin County Library in Minneapolis being one of the chief exceptions. Hennepin County Library launched a pilot project in 2010 to evaluate user response to video reference and enable librarians to provide more public programming. Their model, and the solution implemented by BPL, was a result of shifting priorities within public libraries and the need for more efficient use of reference staff time—often referred to as the “just-in-time” model, as opposed to the “just-in-case” framework. According to Christine Clifford, a Senior Librarian at Hennepin County Library who helmed their pilot, nearly all who used the video reference service reported that their experience was positive, particularly after the system upgraded from Skype to the more secure and private SCOPIA conferencing unit by Radvision. However, the overall level of use throughout the project period was low, and the amount of service rendered did not justify an expansion of the pilot.

BPL intended to test the system as a solution for insufficient staffing levels or less activity at the reference desk. As the Library refined its plans for the VIA project, it became clear that front-line informational services were paramount, and could be implemented without major changes to current operations. Seeking to test videoconferencing as an informational and directional solution, BPL found an affordable alternative to Skype with the LifeSize Passport high-definition video system. Using this technology, the VIA project investigated the effectiveness of patron engagement through a video terminal situated at the Central Library, which sees approximately 1 million visitors each year and is located on the border between the neighborhoods of Prospect Heights and Park Slope. BPL saw this as both an important and unique opportunity to provide the community with a progressive intervention that could change or enhance public service. Patrons at BPL and libraries across the nation are using the physical reference desk for research and inquiries less frequently, yet demand for technology and innovation continues to rise. As the Library moves away from the “just-

in-case” model of reference, it seeks alternative methods to reach its diverse audience (i.e. Brooklyn residents and visitors of all ages). BPL recognized the potential to engage its patrons—especially digital natives and those interested in virtual technology—and assist them as they navigated the three floors and disparate divisions of the Central Library. In addition to housing the largest collection of materials in the system, the library is home to its largest and most highly-trafficked public computer center, a distinguished local history archive, the Multilingual Center, an Adult Learning Center, and the Dr. S. Stevan Dweck Center for Contemporary Culture, an intimate auditorium and performance space that offers free arts and cultural programming year-round. The Central Library also hosts a New York City Department of Small Business Services Workforce1 career development and recruitment site and a Passport Service Center through a partnership with the U.S. Department of State. In proffering these unique services, the Central Library opens its doors every day to visitors with distinct informational needs, from babies and toddlers attending early literacy programs with their parents and caregivers to students, job-seekers, people preparing for the GED exam and recent immigrants, for whom the Library is a critical resource and conduit to learning. Given this environment, BPL surmised that an innovation like VIA would be welcomed by the public as an added feature in 2012 and the future. In a fortunate coincidence, the Central Library was in the midst of major construction and the relocation of multiple departments during the grant period, resulting in a project that was as timely as it was convenient.

PROCESS



In fall 2010, BPL’s senior management and the Department of Information Technology began exploring the potential use of videoconferencing equipment in its branches. Virtual reference services in the form of email and chat were already being offered by BPL, and had been an integral part of the public service plan for several years. In the most recent five-year Plan of Service report (2007-2011), the Library acknowledged the need for additional hours of reference services and growth through innovation. BPL had therefore demonstrated its commitment to projects such as VIA, and was in a

position to investigate the use of video technology in its busiest branch, where it could be evaluated by patrons and administrators. Leading up to the grant application, BPL consulted with telecommunications vendors (Cisco and Lifesize) to determine pricing and feasibility, and team members that would eventually work on the VIA project met with LifeSize—the most cost-efficient vendor—to examine the features of their system. The team envisioned numerous possible applications of the product, yet agreed it would first have to be introduced in a highly controlled environment. The VIA project was subsequently proposed to IMLS with the full support of BPL’s senior management and the Board of Directors, and the expectation that it could be implemented without interruptions to normal service.

The VIA project was officially launched in September 2011 under the direction of Richard Reyes-Gavilan. Diane Riordan was hired as the principal Virtual Information Ambassador and the Library acquired equipment—a LifeSize Passport high-definition video communication system and a 43” plasma Samsung monitor mounted on a compatible metal stand—with the support of grant funds. There were two terminals for the project—the Virtual Information Ambassadors used a Dell desktop with a standard flat screen and the public end included the Samsung monitor and a camera. Ms. Riordan and the interns were introduced to the system’s features and trained to use the unit by Rawle Jackman, who also provided her with a User Guide. They were provided an office in a private section of the library as a work space and with Mr. Jackman’s guidance they tested and adjust the levels of lighting, sound, picture quality and camera positioning in preparation for live implementation. In October, the first phase of the two-phase project began. The public endpoint of the system was initially installed with the large plasma monitor at the Central Library’s Welcome Desk, in the Entrance Lobby with the screen facing the front doors of the building’s main entrance. (Midway through the project, the VIA monitor was moved to test its practicality in an alternate location.) The Welcome Desk is often staffed by a trained volunteer who directs patrons to the library’s various service points and divisions. To test its efficiency, service was intentionally scheduled when a volunteer was not at the desk, and from a remote location Ms. Riordan or a trained intern greeted every incoming patron who came into view. To further raise awareness of the system, BPL’s Marketing and Communications Department designed a sign that attached to the corner of the screen and said: *Do You Have a Question? Ask Away!* The marketing team also created the design for a mat which was placed at an optimal distance from the screen where patrons were instructed to stand. (Production of these items was outsourced and covered by the grant.)

Prior to live implementation, Ms. Riordan and Mr. Reyes-Gavilan developed data collection sheets and a key to code responses. The system was first broadcast to the public on October 18, 2011, and interactions with patrons began being recorded as qualitative and quantitative statistics for evaluation. When a patron approached the screen, a Virtual Information Specialist answered questions related to building directions, information regarding collections, times and locations of programs and events, and information about other BPL sites and local points of interest. For the first two months, the system was active at the Welcome Desk for eight to ten hours per week. On average, the Virtual Information Specialists fielded 12 informational questions per hour, while 77 patrons per hour acknowledged the system’s presence upon entering. Of the questions logged during this period, 35.5% pertained to building directions, 14.3% related to collections, 11.7% were regarding events in the auditorium, and 32.3% were either comments about the VIA system or requests to speak with specific staff members. The comments provided important feedback about the technology in many cases, as the system froze several times early in the project period and patrons informed the staff members of the glitches.

Comments about the new system as a library innovation were mixed, though predominately positive. The device was especially appealing to children and young adults, whereas some older patrons noted that they would prefer to speak to someone in person. To this end, general responses were grouped into three themes: young patrons often said the technology was “cool”; some patrons asked where the Virtual Information Ambassador was physically located; and others thought it was “creepy” or off-putting. Those who had a specific question stepped forward without hesitation, and children and adolescents were usually comfortable engaging with the system and its attending Virtual Information Specialist. Seniors were also impressed by the innovation, and several stated that they were pleased the Library was embracing the technology. The adults who responded negatively to VIA were often opposed to being “on camera,” although they were not being recorded.

During its first two months of operation, the most significant challenge was resolving technical difficulties with the new equipment. Due to the system's configuration, the Virtual Information Specialist had to be notified of sound or image problems by a patron or staff member on the floor. BPL's information technology team was quick to respond to these issues, and by the midpoint of the project these instances were rare. As with any monitor, picture quality and audio output are critical factors, and in a public space they are affected by lighting and acoustics. Given the system's initial location at the high-ceilinged entrance, lighting and ambient noise significantly impacted what was seen and communicated by the patron. For the staff member, visibility of the patrons on the screen varied from day to night, as they were backlit by glass doors and ceiling lights approximately 50 feet above the floor. During the day, the patrons were visible, but without adequate lighting the images were dark. Alternatively, lighting was not an issue for patrons. They could see the staff member clearly on screen unless there were technical problems, which were found early on to be attributed to the BPL network and the Passport system hardware. After repeated comments from patrons, BPL's information technology team resolved the visual issues by making adjustments to the network and increasing bandwidth. However, there were subsequent issues with the equipment, which began making a clicking noise. The information technology team then contacted LifeSize and the company replaced the device. With the new equipment in place, the system was sufficient but the reception of sound was affected by everyday library activity as patrons entered and exited the building. To be heard clearly by the Virtual Information Specialist, patrons were asked to stand on the mat (to ensure optimal distance from the equipment) and speak louder. BPL allayed this problem to a degree by affixing a cover above the microphone to capture their voice. After two months of service in the lobby, the system was moved to the second floor where building conditions were more suitable to the system and technical issues were minimized.

The second phase of the project began in early January with the monitor and teleconferencing system being moved to the second floor mezzanine. The monitor was situated at the top of an escalator and staircase where it was visible from the lobby. The second floor is comprised of two large collection divisions (History, Biography and Religion, and Society, Sciences and Technology), the Adult Learning Center, a Workforce1 Center, a local history archive in the Brooklyn Collection, and the Popular Library, which contains DVDs, CDs, periodicals and microfilm. There are also multiple training rooms where educational workshops and training programs are frequently conducted. With moderate lighting and calm surroundings, this location was more conducive to a private conversation with the Virtual Information Specialist. Patrons were more comfortable and willing to approach the system, and sound was perceived to be amplified on both terminals. Visibility was also enhanced, as lower ceilings provided direct light throughout the day. While the screen still occasionally froze and became pixelated, it happened far less often and usually during hours of high network usage.

The Passport system was the most affordable videoconferencing option through LifeSize and was supported entirely by the grant. It was remarkably easy to use, but as the least expensive system in the LifeSize line, it also had the fewest features. Beyond face-to-face interactions, Virtual Information Specialists had the ability to toggle between images on their computer screen or split the screen to show both camera views. Toggling back and forth was useful because it provided the user with active visual images of the BPL website and the library catalog, as appropriate. Splitting the screen, on the other hand, created a mirror image of the patron, which they often said was discomfiting. By the second half of the project, Virtual Information Specialists were adept at using the system and the service had markedly improved. BPL offered more hours of coverage in January

and maintained this service level until the project's conclusion in March. With no children or youth services on this floor, there were significantly more adult users during this period, as 9,800 people acknowledged the system. There was also a 37% increase in the average number of reference questions per day, which may be partially attributed to the service point's placement near the majority of the Central Library's non-fiction collections. Virtual Information Specialists helped guide patrons to the collections, while some reference questions were directed to librarians in the related divisions. During the second phase, they answered approximately six questions per hour—half the rate of the entrance location. The lower rate of questions per hour was likely due to the fact that patrons were already headed to their destination when they encountered the system, and there were far fewer young people on the second floor. In its nine weeks of service in this location, 29.2% of the interactions were about collections, 28.7% were directional, and 36.3% were comments and questions about the system or the Library. The remaining interactions (5.8%) pertained to programs, events, other BPL sites and neighborhood information.

PROJECT RESULTS

The VIA project was one part of BPL's strategic efforts to test out innovative services that could enhance and expedite transactions between staff and patrons. As the Library's initial foray into video-centered information services, the project was a resounding success. The project was generally praised by the public, and the primary Virtual Information Specialist stated that working on VIA was comfortable and rewarding when the system was operating smoothly. In particular, VIA's relocation to the second floor improved service quality in multiple dimensions, as it proved to be a valuable resource for patrons with varied information needs. Aided by vibrant signage and a floor mat placed at an optimal distance from the camera, the Virtual Information Specialists answered patrons' questions sufficiently or directed them to the nearest reference librarian to receive further assistance. While there were technical difficulties in the early stages, they proved to be informative, allowing the Library to understand how a telepresence would function in a live setting and what specific obstacles would surface. Once the challenges were identified, BPL was able to establish procedures to rectify them quickly. Project staff soon learned that an enclosed and relatively intimate environment like the Central Library's second floor landing was ideal for this type of system. After evaluating its outcomes and potential applications, BPL believes a video information system would be an enticing and useful addition to libraries with high traffic or multiple branches that have the necessary resources to implement the technology.

Videoconferencing technology is widely recognized as a dynamic tool with value in spheres of business, education, remote communication and myriad fields within those areas. Its use in libraries is promising on several levels, though it requires careful consideration and planning, as well as a test period to assess the public's response. Skype and the basic videoconferencing equipment purchased by BPL are viable solutions with minimal requirements for installation. However, the lack of functionality (e.g., multi-screen) and network interruptions with these options are veritable hindrances. Staffing the system or using it as a remote reference desk also raises questions. While it is relatively easy to learn to use, staff members may not want to be projected on a screen or they may be disinclined to use new technology. Additional concerns on the part of staff may include the perception that the technology will be implemented in order to replace staff members. Library administrators must emphasize the potential the technology has to support, not replace, librarians. BPL's union contract mandates that the union, which covers most public service employees including all librarians, shall be given notice in advance of the introduction of automation or

technological changes. It is therefore crucial for administrators to properly promote the advantages of the technology in advance of its introduction at traditional librarian service points.

Evaluation of the project included a brief survey and meticulous notes on the comments and observations of users. Throughout the second phase, users were invited to fill out a survey with seven quantitative and qualitative evaluation questions regarding ease of use, audio and visual quality, helpfulness, recommendations for improvement, comparison to the usual Information Desk, and overall satisfaction. The table below displays the quantitative results (from 0.5% of the total users), which were rated on a five-point scale from negative (1) to positive (5).

Topic	Average Rating	Total Responses
Ease of Use	4.48	46
Sound Quality	4.30	47
Image Quality	4.36	47
Helpfulness	4.48	46
Satisfaction	4.24	46

The two open-ended questions asked patrons to describe their experience and provide feedback on service improvement, and responses varied considerably. Those who appreciated the service thought it was “futuristic,” “pleasant,” and a “wonderful idea.” Negative comments conveyed that a minority of users felt “disconnected” and “detached,” and more than one person mentioned that it reminded them of “Big Brother.” The most notable suggestions to improve VIA were to staff it with a multilingual librarian and place a monitor on each floor. Both of these ideas were cited during BPL’s post-grant planning process, during which those involved in the project discussed the future applications of VIA.

In its final review of the project, BPL concluded that the equipment was satisfactory and management discussed how it could continue to use the system in different capacities. With 59 branch locations, BPL has a large and disparate library system, and usage varies widely among sites. The VIA team considered moving the staff endpoint of the equipment to a branch with low volume at the reference desk, but has opted for an alternative use at this time. In the case of a video-aided reference desk, a librarian could serve patrons at another site (as BPL branches are on the same network) by multitasking. Although BPL believes this is one of the best potential uses of the equipment, the plan is on hold while the Library focuses on its forthcoming Strategic Plan of Service. The strategic plan will launch in January 2013, and among its six broad goals is one of creating an institution that is innovative and responsive to change. Further refinement and expansion of videoconferencing will support this goal. Initially, the Library plans to experiment with the technology as a means of attracting larger audiences to its local programs. Experimenting with the technology at a branch service point will follow some time in fiscal year 2014.

BPL excels at delivering public programming to patrons of all ages. Its most popular offering is the system-wide First Five Years early literacy program, which takes place each week at every branch with storytime and music programs for babies, toddlers, preschoolers and their parents and caregivers. BPL would like to provide these programs more frequently at high-use branches, but staffing levels and other activities limit the number of programs that can be offered. The telepresence would enable BPL to conduct programs at one branch and stream them live at another branch. BPL also offers free arts, literary and music programs at its branches and the Central

Library's Dr. S. Stevan Dweck Center for Contemporary Culture, which attract popular local and international artists, writers and performers. Some of these programs are presented for non-English speaking audiences and draw capacity crowds. By streaming these programs live at other branches, patrons could watch in their local branches if it were more convenient for them. BPL hopes this would augment its cultural programming and bring more publicity to its events.

BPL would like to inform other libraries and institutions about its project and will post information and the white paper on the Central Library and the As-a-Librarian virtual reference page. As videoconferencing technology becomes more sophisticated, library administrators should remain interested in how it can best be leveraged within their institutions. Email, online chat, and distance learning have all become readily accepted and efficient means of remote engagement, and BPL believes videoconferencing will too.