

E-Powering the People: *South Africa's Smart Cape Access Project*

SUSAN VALENTINE



MARCH 2004

The Bill & Melinda Gates Foundation Access to Learning Award is given annually to a public library or similar organization outside the United States that has shown a commitment to offering the public free access to information technology through an existing innovative program. The award, which includes a grant of up to US\$1million, is administered by the Council on Library and Information Resources (CLIR). An international advisory committee of librarians and information technology experts reviews the applications and selects the recipient.

**Bill & Melinda Gates Foundation
Access to Learning Award Recipients**

2000

HELSINKI CITY LIBRARY, Finland

2001

BIBLIOTECA DEL CONGRESO, Argentina

PROYECTO BIBLIOTECAS GUATEMALA (PROBIGUA),
Guatemala

2002

BIBLORED, Colombia

2003

SMART CAPE ACCESS PROJECT, South Africa

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Access Project*

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March 2004

Council on Library
and Information Resources
Washington, D.C.

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In partnership with other organizations, CLIR helps create services that expand the concept of “library” and supports the providers and preservers of information.

Through projects, programs, and publications, CLIR works to maintain and improve access to information for generations to come. For more information, visit www.clir.org.

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Smart Cape Web site at
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Currently, Valentine is the editor of Health-e News Service, an online news agency covering public health and HIV/AIDS in South Africa. She was a Nieman Fellow at Harvard University from 2002 to 2003.

“If the city wants to succeed by offering people Internet access, it must be offered free. Citizens, especially previously disadvantaged citizens, are not going to spend 10 Rand (US\$1.50) for 30 minutes at an Internet café when that money is needed to put bread on the table.”

MYMOENA ISMAIL
Project Manager
Smart Cape Access Project



Credit: BILL & MELINDA GATES FOUNDATION/PHOTOGRAPHS: KURT VINION

South African representatives receive the Access to Learning Award in Berlin, Germany, at the annual meeting of the International Federation of Library Associations and Institutions (IFLA). Left to right: Smart Cape Project Manager Mymoena Ismail; His Excellency S.M.E. Bengu, Ambassador of South Africa to Germany; Smart Cape Executive Mayor Nomaindia Mfeketo; Deputy Executive Mayor Pierre Uys; and Chief Information Officer Nirvesh Sooful.

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PREFACE

As American public libraries confront the challenges of shrinking budgets, it is inspiring to look abroad to Cape Town, South Africa, and see what has been accomplished with minimal resources against daunting odds. In a city where more than 80 percent of the citizens do not have access to computers and fewer still can access the Internet, public officials set out to build a “smart city,” where “informed people could connect to the world and to each other by the technology of the information age.” The result is the Smart Cape Access Project—an effort that has not only increased the number of library users, helped the unemployed find jobs, and convinced city leaders of the value of free access to technology, but also given people hope.

This case study details how city officials capitalized on an idea and made it into a reality. Using the existing resources of public libraries, they embarked on an experiment of placing a few computers in a handful of libraries in disadvantaged areas and giving users free access. The results, as documented by this account as well as by city officials’ own evaluation, are astounding.

The Bill & Melinda Gates Foundation Access to Learning Award is conferred annually on a public library or similar organization outside the United States for an existing program that gives all members of the public free access to information technology. In 2003, the Council on Library and Information Resources (CLIR) administered the program for the second time and received more than 300 applications from 80 countries for the US\$1-million award. The high quality of applications made the job of the advisory committee extremely challenging and speaks all the more highly of the project chosen for the award.

When examining the 2002 award recipient—Colombia’s Biblored—and the 2003 recipient, we could not fail to note that both projects were implemented by innovative, energetic, and dynamic city officials through public libraries. Thanks to their efforts, previously disadvantaged citizens in Bogotá and Cape Town now have the world at their fingertips.

CLIR values the opportunity to administer this prestigious award. We thank the Bill & Melinda Gates Foundation and Carol Erickson, senior program officer of the International Library Program, for their continued trust and confidence in our work.

ALICE ANDERSON BISHOP
Special Projects Associate
CLIR

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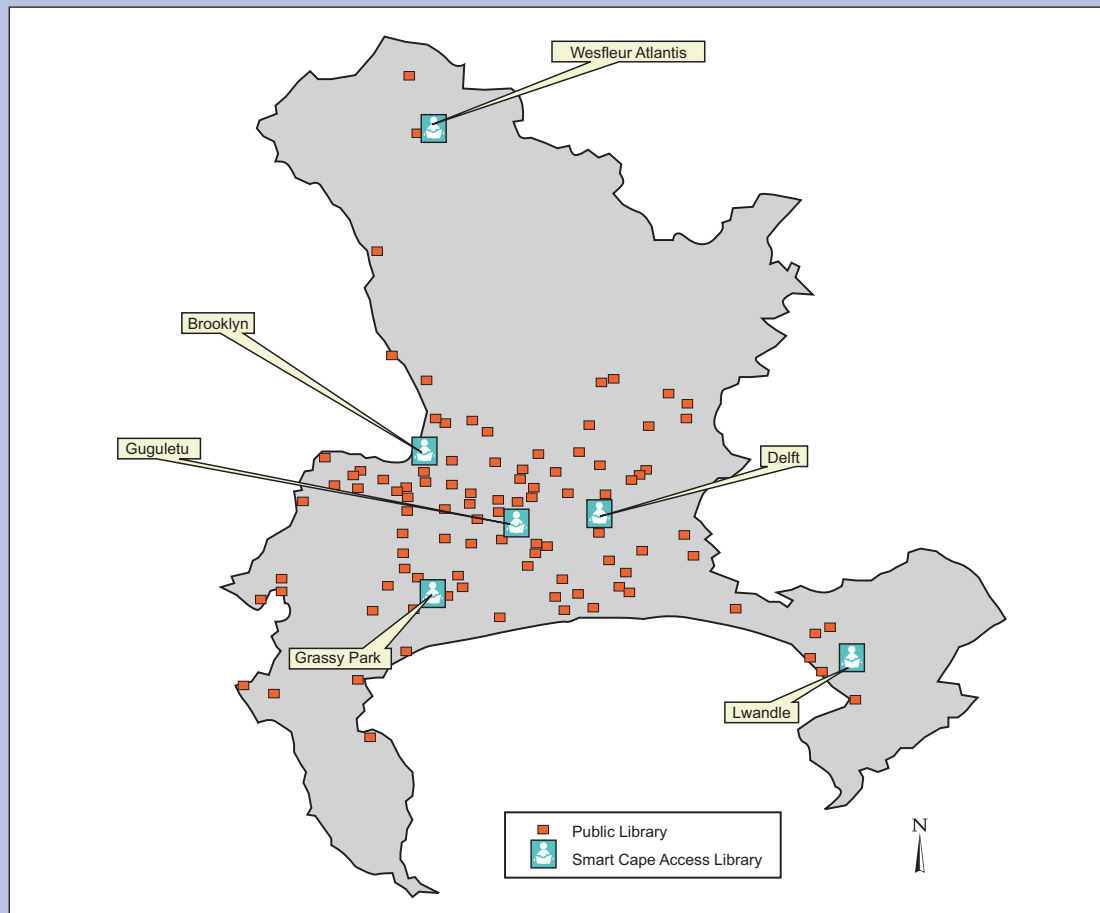
One bonus of writing this kind of report is that it offers the chance to explore a good news story. A decade is not a long time to undo the inequities of our past in South Africa, and in many places, change is painfully slow. However, the Smart Cape Access Project is delivering a tangible benefit that people are using to engage the world in new ways and to create opportunities for themselves.

My thanks to all the busy library staff who made time to talk and show me around their libraries. A special word of thanks to all those Smart Cape users who graciously interrupted their precious online minutes to talk with me. I trust you got the extra online time promised!

The goal of the Smart Cape Access Project is to ensure that all citizens of Cape Town have access to basic information and communication technologies. Based in public libraries, this public access model offers free use of computer technology through existing facilities and resources. It also allows technical management, including maintenance, of the computers from a remote facility, reducing the amount of time librarians spend on management.



Cape Town Public Libraries



Perched on a peninsula on the southern tip of the African continent, Cape Town is one of the world's most beautiful cities. It is also one of the most economically and socially polarized. Planted at the foot of the 9,000-foot-high granite face of Table Mountain, the downtown city looks out across Table Bay and Robben Island, the former maximum-security prison that is now a World Heritage Site. Luxury homes hug the two splendid coastlines that run the length of the peninsula. Cape Town has one of the greatest differentials between rich and poor in the world. The city center and waterfront on the shores of the Atlantic Ocean boast shopping, restaurant, and business facilities on a par with the best in the world. But if a visitor follows the commuter rail line southeast from the city, a different Cape Town begins to emerge.

Inland, on the Cape Flats and beyond, live the poorer citizens of Cape Town—some in modest homes, many in state-subsidized housing, and others in informal settlements. It is estimated that one-quarter of residential households in the City of Cape Town need formal housing—solid structures set out in designated areas with access to water and electricity. The large informal settlements comprise a maze of shacks made from a variety of scrap materials such as wood, iron sheeting, and tarpaulins. The average unemployment rate is 20 percent, but among poorer communities it is much higher. Only 5 percent of city residents earn more than US\$1,100 per month, while 40 percent earn between US\$142 and US\$357 per month.

“The Smart Cape Access Project provides an opportunity for poor children in particular to access the same information and technology that is available to their more privileged friends....By making cutting-edge technology available to everyone, we move closer to social justice and equal opportunity for all.”

NOMAINDIA MFEKETO
Executive Mayor
Cape Town

Much of this inequity arose during the years of National Party rule from 1948 until 1994. During this time, infamous legislation was introduced under the policy of apartheid that privileged white citizens in all things and extended a lesser degree of privilege to “colored” inhabitants over black African residents, who make up more than 75 percent of the national population. Under apartheid, city management was fragmented and resources were distributed unequally along racial lines. One of the key tasks of the new democracy established in 1994 was to reunite the city and establish a coherent structure for local government that would administer greater Cape Town as an integrated entity.

Cape Town is the second-largest city economy in South Africa, contributing 11 percent of national output in 2002. It has a sophisticated, but uneven, infrastructure that includes first-rate medical care, prestigious educational institutions, high-tech industry, and world-class tourism facilities. For the most part, this world is restricted to the wealthy elite, the majority of whom are still white, although this is changing.

Not surprisingly, the gap between rich and poor, employed and unemployed, and skilled and unskilled translates into a very real “digital divide.” More than 80 percent of the city’s residents do not have access to computers, and only 14 percent have Internet access. World Bank figures show that of the 304 million people worldwide with Internet access in March 2002, only 2.6 million were in Africa. By contrast, some 137 million were in the United States and Canada.



Credit: BILL & MELINDA GATES FOUNDATION/PHOTOGRAPHS: CHRIS BENNION

Lizo Thomas came to Cape Town from Johannesburg looking for work. He got on the Smart Cape computer at Lwandle Library, saw an opening for a library assistant, and got the job.

Cape Town Assesses the Digital Divide

In January 2000, the Cape Town City Council, conscious of the fact that the growth of information technology (IT) can cause greater economic inequality and social polarity if there are no “concerted efforts to bridge the digital divide,” undertook an assessment of the digital divide in the city. This assessment, the first of its kind in the world according to council documents, not only considered physical access to technology in the form of telephones and computers but also examined the “interrelated issues” that determine how effectively IT could be used to gain concrete benefits.

According to the author of the assessment report (Wright 2002), the process was unique because it “reached out to people in small



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organizations and some of the poorest communities in Cape Town to gain an understanding of their particular experiences and desires as well as to alert them to the issues at stake.” The report concluded that the city had the chance to use IT to alleviate many of its problems. At the same time, it cautioned that unless the city acted on these opportunities, “the information ‘have-nots’ will be increasingly excluded from jobs and communication channels, leading to greater political and economic disenfranchisement.”

Within South Africa, in almost all things besides tourism, Cape Town plays second fiddle to Johannesburg, the business capital of the country. However, perhaps somewhat presumptuously, but in line with its commitment to a “smart-city” strategy, Cape Town now bills itself as the IT hub of the country.¹

In terms of scale, this is wishful thinking. The sheer size of Johannesburg (almost three times that of Cape Town and the largest city economy), plus the fact that it is home to 60 percent of the country’s IT industry, completely dwarfs the “mother city”

Boys regularly use Smart Cape computers, but girls are beginning to show increased interest. With terminals and online minutes at a premium, users usually have an audience.

in the south. The Western Cape’s IT industry comprises approximately 1,200 companies and employs 27,000 people, making it the second-largest employer in the province (tourism ranks first). A third of the companies working in the sector export products and services to Africa, Europe, and North America. The bulk of this export trade (76 percent) is with other African countries.

Within South Africa, Cape Town accounts for about 30 percent of South Africa’s IT industry; the remainder is scattered around the rest of the country. But the city has made a conscious decision to develop its information and communication technology. Consequently, the claim to be the IT hub of the country is not so far-fetched, says Nirvesh Sooful, the city’s chief information officer.

“Cape Town has become the choice for IT and new media companies, as well as the film industry and related technology,”

¹ The “smart-city” strategy, adopted by the city council in 2000, envisioned “a smart city populated by informed people, connected to the world and each other by the technology of the information age.”

says Sooful. “Now, international companies are starting to invest in Cape Town, looking to set up support centers here. Cape Town is being seen as the technology hub for South Africa. We won’t ever overshadow Johannesburg, but a lot of innovation is coming from Cape Town.”

This innovation and the city’s commitment to a smart-city strategy gave birth to the Smart Cape Access Project.

Launching the Smart Cape Access Project

The pilot phase of the project was launched in July 2002, when 36 computers were installed in six public libraries in disadvantaged areas across the city. In each library, one computer was designated for administrative use and the other five were earmarked for public use. Each administrative computer was then linked to the central management site of the entire network. One month later, library patrons had free Internet access for the first time in South Africa.

Libraries were chosen as the best locations for the project largely because they had the necessary infrastructure—secure buildings owned by provincial government and

equipped with electricity and telephone connections—and were known to city residents as accessible public places. Furthermore, libraries had trained staff whose business was information provision and management.

Users can log onto the Smart Cape computers in any of the three official languages of the Western Cape province—English, Afrikaans, and Xhosa.

Each of the five public computers at a Smart Cape Access Project point allows users to do the following:

- prepare documents, such as a letter or curriculum vitae (CV)
- prepare spreadsheets
- surf the Internet
- send and receive e-mail messages (a Web-based service that can be accessed from any Internet-connected computer)
- print documents (at a charge of 30 cents [US4.5 cents] per page)
- save documents (on a floppy disc that the user must supply)

As Nirvesh Sooful explains, the driving force behind the birth of the Smart Cape Access Project was a desire within his department to turn some of the rhetoric about building a smart city into action. “Everyone has a grand vision, but the question is how to do it. What we set out to do was simply to make sure we actually did something,” says Sooful, who admits to a degree of bemusement at how well the initiative has been received locally and abroad.

“We really just wanted to make sure we got something off the ground. We thought if we get it right, it will snowball, and if we get it wrong, we’ll accept we made a mistake and it’s no big deal. If we succeed, the benefits will outweigh the failure,” says Sooful with a grin.

Snowball it has. The city has a total of 107 libraries serving its three million citizens. With the Bill & Melinda Gates Foundation Access to Learning Award, the Smart Cape Access Project will expand to the remaining 101 libraries by the middle of 2004.



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Free Internet access is critical to Smart Cape’s success.

CHOOSING THE PILOT SITES

The six libraries selected for the pilot project included two at the most extreme perimeters of the city's administration in the north and east. Sites were identified on the basis of the extent of need and the existence of appropriate space for the project. All six sites are located in areas with predominantly low socioeconomic classes, and five are in communities deliberately disadvantaged under the apartheid government.

Staff consultation and participation were key components in the conceptualization of the project. Although district managers of libraries nominated potential sites, the final selection criteria included the willingness of frontline staff to incorporate the project into their libraries. Once the sites were chosen, staff from the six libraries met with city management to discuss how the project would work. After that, one librarian from each facility was chosen for training. "Management actually listened to the librarians," says Carmen Holtzman, coordinator for libraries in the city's Social Development Directorate. "That was a big plus," she adds.

Less than a year later, by March 2003, the six pilot sites had registered a total of 6,054 Smart Cape users. By February 2004, the total number of users was 7,463. Most libraries reported a consistent demand for the service, with users lining up for their 45 minutes of online access. Help-desk calls averaged 30 a month, according to a December 2002 survey. User error was the most frequent reason for help-desk calls.

Altogether, the 107 libraries in the City of Cape Town have some 280,000 registered members. Approximately 91,000 people use the libraries each month. Anyone may enter a public library and use its reference facilities—read books, newspapers, and magazines. But to borrow a book or to use the Smart Cape computers, one has to register as a library member. Membership is free but requires an application form.

If the pilot phase is any indicator, the establishment of Smart Cape sites in all the city's libraries will see new members signing up simply to get online. Already, Smart Cape-linked libraries report visits from members of public libraries in neighboring suburbs or districts who come to the Smart Cape libraries' doors because of the computers and Internet facility.

FREE INTERNET ACCESS

Free Internet access is a critical factor in the project's success. For people who do not have Internet access at work or cannot afford it at home, the options are limited. There are some 16 Internet cafés in the city, as well as a handful of community-based telecenters, but none of these offers free connectivity to the Web or e-mail accounts, as do the Smart Cape sites.

In South Africa, telephone calls from land lines, as well as cell phone calls, are charged per minute, even per second, making it prohibitively expensive for anyone outside of the middle classes to dial up and surf the Internet.

Smart Cape Access Project Manager Mymoena Ismail stresses that if the City of Cape Town is to realize its vision of making information technology available to its



Project managers consulted librarians to facilitate the implementation of access points. Left to right: City Coordinator for Libraries Carmen Holtzman, Brooklyn and Wesfleur Library Manager Ninnie Steyn, and Smart Cape Project Manager Mymoena Ismail.

Credit: BILL & MELINDA GATES FOUNDATION/PHOTOGRAPHS: CHRIS BENNING

citizens and improving IT literacy and communication between government and the public, Internet access must be offered without charge. “If the city wants to succeed by offering people Internet access, it must be offered free. Citizens, especially previously disadvantaged citizens, are not going to spend 10 Rand (US\$1.50) for 30 minutes at an Internet café when that money is needed to put bread on the table,” she says.

PRIVATE DONATIONS AND PARTNERSHIPS

In a tight budgetary environment, donations and partnerships from private organizations were key in launching the project. All the computers were secondhand machines donated by the city’s IT Directorate. Most were Pentium 1 computers that were refurbished by students from the Peninsula Technikon, a technical college. The computers were stripped of original software, standardized as much as possible, and prepared for installation. No donated software was used. The Shuttleworth Foundation, located in Durbanville, South Africa, donated technical expertise regarding open-source software that was licensed from vendors or obtained at no cost from Internet sites. Xerox South Africa donated printers, and Cablecom Ltd. gave cabling. The City of Cape Town paid for installation.

The creation of local Web content relevant to communities using the Smart Cape computers was done largely in partnership with local companies and organizations. Smart Cape does not have the capacity to create or generate local content on its own; instead, it facilitates the delivery of relevant local content from other Web sites. For example, Web sites of nongovernmental organizations funded by the government of the City of Cape Town are linked to the Smart Cape Web site, as are other partners, such as the Medical Research Council and its AfroAIDS site.

Part of the smart-city strategy is that relevant information should be made available online in the hope of creating small and medium enterprises and improving the



Credit: BILL & MELINDA GATES FOUNDATION/PHOTOGRAPHS: CHRIS BENNON

Lwandle Library Assistant Richard Sing likes to impersonate Nelson Mandela, urging children to learn about the world through books and computers.

ways departments within local government communicate with each other. Ismail acknowledges that the provision of IT will not in itself create much-needed jobs for citizens, but she believes it can empower people to market themselves, start their own businesses, or gain access to useful information.

STAFF INVOLVEMENT

When the project was introduced, library staff were cautiously enthusiastic, according to Ismail. The staff seemed to be saying, “We like the idea, but don’t expect too much from us. We’re overstretched and underresourced,” she says. As a result of budget cutbacks and staff shortages, library hours have been reduced. Hours of operation generally coincide with business hours. The design of the project took into account the generally low level of computer literacy among librarians, as well as their apprehension about dealing with new technology that might require more time than they could afford.

One person in each library was chosen as the “super user” and attended a two-day training course to learn how to operate the administrative computer and the five public

terminals. The super users could then train other staff at their libraries as the need or interest arose. A Smart Cape user guide was developed and placed at each computer. Little else was expected from the rest of the staff. “We wanted people to feel that their role was to administer the facility at a management level,” says Ismail. “They should adapt it to suit the needs of their library and their communities. We wanted them to understand that the facility could look after itself. They weren’t required to become technical boffins [scientific experts].”

The inclusive approach adopted from the outset by Smart Cape managers, as well as the efficiency in rolling it out, are among the keys to its success. “When we implemented the project, it was the first project that people said had been implemented on time,” says Ismail. “Librarians said they were surprised at how professional it all was and the fact that they had been consulted on where to house the computers and where to put up the signage. It was a different approach. They were part of the process in every activity—the marketing, the design, even the furniture.”

Ismail is especially encouraged at how the project has taken off and how, with minimal marketing, enthusiasm for it has spread throughout the city and even the province. Librarians realize the changes it has made in their libraries. Membership has increased, volunteers have emerged at different libraries, and librarians have assumed local leadership roles.

The success of pilot sites has given senior management in the city pause for thought about the role of libraries in an information-based society. “They’ve realized that they can make a real contribution to communities. That it’s the place where people are going for information, and it is part of the infrastructure that we should be utilizing,” says Ismail.

One example that helped drive home the potential of IT to the city’s political leaders was the “Listening Campaign,” which was supported via the Smart Cape Web site. The campaign was an initiative by Cape Town Executive Mayor Nomaindia Mfeketo to solicit citizens’ views about their most pressing concerns. When the campaign started, citizens could fill out and deposit questionnaires at libraries; from there, the questionnaires were delivered to the mayor’s office. Smart Cape then put the questionnaire online. In one day, more than 700 responses were sent to the executive mayor. Many respondents asked for more information about ways to access city services and job opportunities.

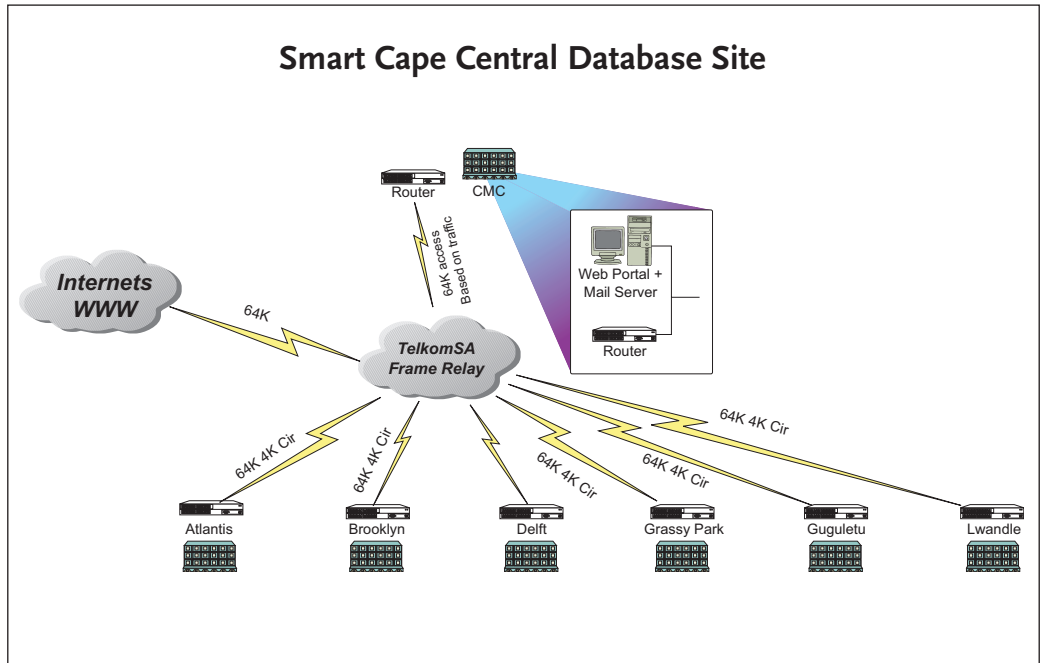
TECHNICAL SPECIFICATIONS

Libraries with Smart Cape computers are connected using a dedicated frame-relay network provided by Telkom, the South African telecommunications utility. The computers at each access point use a Linux operating system. The computers for public use have no hard drives and are served by the administration computer. Each workstation can be remotely maintained from the central management site which controls the entire Smart Cape network. The service runs on a 128kb line.



Credit: BILL & MELINDA GATES FOUNDATION/PHOTOGRAPHY: CHRIS BENNION

Smart Cape user guides were developed and placed at each computer. But fellow users regularly share their knowledge.



The following systems have been developed and implemented to administer the facilities:

- an administration system with a Web interface that manages workstations and the duration of sessions and allows the administrator to terminate all sessions in progress when it is time for the library to close;
- a user-registration system that allows library members to register and limits the number of sessions per user each day;
- a timer-management system that manages the duration of user sessions and indicates how much time remains in each current session.
- a print-management system that manages the process for printing documents using a networked printer installed at each access point.

The central server utilizes Qmail and DbMail to provide e-mail, Apache to run the Web server, and Multi User Traffic Grapher to capture network and user statistics.

Smart Cape administrators at each library have telephone access to a help desk that logs and rectifies technical problems. Eight people usually staff the desk, and calls are assigned to two support technicians.

The Smart Cape technical staff based in the city's IT Directorate monitor the most popular Web sites visited as well as which applications are most frequently used. While this limits users' privacy (certain sites are blocked for access, and users who log on to porn sites can have their memberships revoked), it also means that management can enhance services.

The computers at each access point run open-source applications based around Open Office, a nonprofit initiative for sharing software. Initial software that was loaded allowed for word processing (including spreadsheets and presentations), Internet browsing, e-mail, and online chat programs. Later, in response to the monitoring of users' needs, a typing tutor was installed, as well as a paint package and an online Smart Cape Help feature.

Feedback on the present system will be incorporated into the upgrade that is due to take place in the coming months. A faster Internet browser will be introduced, and the Open Office package will be upgraded to include features such as converting documents to PDF, a résumé wizard for creating CVs, and a greater selection of fonts. A more-advanced typing tutor will be loaded to track typing speeds and errors. The new system will also include a Smart Cape bulletin board so that everyone in the project—librarians, volunteers, users, and the project team—can communicate with each other. Community bulletin boards will also be created so that users can post announcements relevant to their own concerns.

The Smart Cape Access Project in Action

“This is part of a new vision for libraries. It’s a move away from the traditional role of handing out books over the counter and issuing overdue notices. Now we must play a social role. We are in a position to uplift the community.”

– KARIN JOHNSON, Librarian,
Atlantis Public Library

Like many of her colleagues in library services, Karin Johnson is very positive about the Smart Cape Access Project, even though it has meant more work. In each of the six pilot project libraries, librarians have welcomed the extra capacity that the Internet has brought to their ability to provide access to information. All the libraries report a rise in the number of people signing up as library members in order to access the Smart Cape computers. The librarians enthusiastically recount stories of users who have found jobs over the Internet. They are also pleased with how library staff are able to access recent information that is not available in the books on their shelves.

Library users truly appreciate the free Internet access supplied by the Smart Cape

project, as well as the opportunity to use the library computers for typing CVs and assignments. Even when the system is painstakingly slow and users complain about the speed, there is invariably a voice expressing gratitude for the free service.

While the Smart Cape project has been well received by staff and users alike, librarians have voiced some concerns about the program. A common staff complaint is that library budgets are calculated on the basis of how many books are borrowed rather than on how many people are actually using the library—be it the reference section or the Smart Cape facility. “Our circulation figures for July were only 6,141,” says Tholiwe Mahali, principal librarian at the Guguletu Public Library. “That makes it seem as if people only took out one book all month, but we are helping people in the library all the time. The number is a bit low because of the school holidays, but people who come to our library often read the reference books and do their work here. Judging resource needs by circulation is not an accurate reflection of how the library is being used.”

Librarians also complain about the long lines as library users wait for their 45 minutes



Credit: BILL & MELINDA GATES FOUNDATION/PHOTOGRAPHS: CHRIS BENNING

School children use the Smart Cape computers for school projects and typing resumes.



Many unemployed youths use the Smart Cape computers to look for jobs. Some get positions overseas.

of online access on one of five computers. Although many users are novices and able to do only the basics, others have learned how to infiltrate the administrative systems and tamper with the clock that limits the length of their sessions. All six libraries have experienced this problem. “I think these youngsters are born with an extra gene—they find all the loopholes,” says Anita Shaw with a laugh. Shaw is the chief librarian at Grassy Park, an area synonymous with high crime rates and gangsterism.

Nirvesh Sooful acknowledges that a common concern expressed by the libraries is the need for more computers and faster speeds. He also admits that this is not likely to change in the near future. “Bandwidth is expensive in South Africa, and cost is an issue in sustaining this project,” he says. “We don’t want to compete with Internet cafés. We are a community service, a shared facility, and we will always be slower. Our aim is to provide public access, not to put Internet cafés out of business.” He hopes the Smart Cape project will help stimulate the need for Internet access, and business people will discover the need and be prepared to pay in order to get

speedy Internet access at commercial facilities.

Ismail reports that they are already receiving reports from individual entrepreneurs who have used Smart Cape computers to start their own businesses. They praise Smart Cape, but ask for greater privacy and longer time online. The entrepreneurs say they are willing to pay for such services. This has led to the start of another pilot project—a digital business center in Khayelitsha and Guguletu that will be designed to meet the needs of small businesses.

This development underlines a further dimension to the Smart Cape Access Project. It is not only about meeting the need for free Internet access but also about creating a need based on an understanding of the kind of information that can be accessed on the Web. In Smart Cape Access Project’s first report, Sooful and his coauthors write, “An important barrier to building viable levels of user demand is that until people have experienced the benefits of digital connectivity, they have little or no understanding or desire to take the time, effort, and money to go and find out. This is an ‘unfelt’ need; it is hard to understand how disempowered you are by being denied access to information that you don’t know exists and have no way of obtaining and using” (Sooful, Ismail, and Neville 2002).

Unfortunately, some library members do put the Internet access provided by Smart Cape to unauthorized uses. Attempts to log on to porn sites require ongoing vigilance from Smart Cape system administrators, and a craze among preteenage boys to access the game site Dragonball Z has exasperated Smart Cape coordinators at four of the six libraries. The boys log on to the site, then download and print images for swapping with other kids at school. In some cases, the motivation for accessing the site is entrepreneurial. One 12-year-old said that he would download the most popular figures, print them out at 30 cents (US 4.5 cents) a page, and sell them for 1 Rand per page at school.

Similar unofficial, unsanctioned small-scale ventures have appeared at other libraries. Twenty-year old Brandon Langeveldt, a volunteer at the Delft Library who tutors new users, says some who did not have the time or the know-how to use a computer or draw up a CV paid for the service. "I know some people charge 11.50 Rand (just less than US\$2) to type up a CV for someone. I prefer to help people learn how to do it themselves. Then they know for the future," says Langeveldt, who is starting a two-year computer programming course at a local university.

Volunteers are an important element in the success of the Smart Cape project. In most cases, they are young men who have some computer experience, are unemployed or studying, and relish the opportunity for free Internet access. They are also motivated by a desire to help others learn how to surf the Internet and to become more computer-literate.

In libraries where there are few or no volunteers, the burden falls more heavily on librarians. Those librarians report more problems with managing the Web site than do those in libraries where there are confident, knowledgeable volunteers.

A huge majority—79 percent—of Smart Cape users are men. "In our first few months online, the most popular site was BMW—that tells you something!" says Ismail. Car sites

remain one of the most popular. Ismail adds that most of the women who use the computers are active in nongovernmental organizations, such as battered women's associations. These users are looking for information and how to network with other organizations, both locally and nationally.

A big challenge is how to involve women in the Smart Cape project, both as users and as volunteers. Traditionally, girls in this culture are less exposed to technology and consequently are less confident about trying it and asserting themselves to have time online than boys are. "We are trying to bring in female volunteers," says Ismail. "There is still a hierarchy in our communities. Men are the public face, and girls won't ask boys how to use the Internet," she adds.

The librarian super user at Guguletu library, Lubabalo Dzedze, says the dominance of male users probably reflects cultural norms. "Men have more spare time; women are at home doing housework, preparing meals, looking after children," he notes.



Credit: BILL & MELINDA GATES FOUNDATION/PHOTOGRAPHS: CHRIS BENNION

With the majority of Smart Cape users men, project managers and librarians are sponsoring programs specifically targeted toward women.

Looking Ahead

In December 2002, a local consulting firm completed an early evaluation of the Smart Cape project. The company measured project aims and achievements to date. The group's report was published on the Web in January 2003 (<http://www.smartcape.org.za/smart.pdf>).

Two key findings of the report were the importance of volunteers and concerns about long-term sustainability. Both issues are being addressed in current and future plans. For example, although the city is unable to pay volunteers, local government has approved a "formalization" process that will include the awarding of certificates of service that volunteers may use when applying for jobs.

Ismail believes that the Smart Cape computer facility has opened the eyes of city officials to the necessity of solid IT. Recently, the mayor publicly acknowledged that maintaining the information superhighway was as important as maintaining the city's roads.

"You can talk and tell people, but unless they see the results they won't believe you," says Ismail. "We must demonstrate with practical examples; then, we'll go somewhere. That's what we've done with the Smart Cape Access Project, and it's paid off."

Receiving the Access to Learning Award was one of the biggest achievements for the Smart Cape team. It has given the work the international recognition that senior city managers notice. Indeed, Ismail's vision goes beyond coupling Smart Cape only to libraries. "Our intention is to ensure an access point can be placed anywhere, not necessarily a library. It could be situated in a health clinic to give users access while they wait."

The biggest issue is sustainability. "The more we can attract donor funders or partners from the private sector, the more we can achieve in getting Cape Town to really become a smart city," says Ismail. In line with the 2002 evaluation, plans are under way to approach nongovernmental organizations and the private sector to see whether they will pay a fee to have their content hosted on the Smart Cape Web site.

Inside the Six Public Libraries

LWANDLE

Lwandle is a township in transformation. Established in 1958 as a dormitory community, it comprised a collection of single-sex hostels for workers who worked in the nearby fruit and canning industry. This did not stop a steady flow of families into the area during the 1980s, but it was only after the election of a democratic government in 1994 that the rudimentary hostels were upgraded and turned into family-type accommodations. Today, Lwandle's public buildings include two primary schools, one high school, the Migrant Labor Museum, and a public library.

"I know this township like the back of my hand," says Richard Bartman, assistant librarian at Lwandle Library, who supervises the use of the five computers clustered under the Smart Cape sign. "I've been born, bred, and buttered here," he adds. Bartman has worked in the library since it opened six years ago.

Unemployment is a major problem in Lwandle, with some two-thirds of the community jobless. Domestic violence, teenage pregnancy, and alcohol abuse are common social problems.

The majority of library users at this site are between 14 and 35 years old. In the mornings, most users are unemployed youth; in the afternoons, schoolchildren visit the library to log onto the Smart Cape computers. Pat Sybokwe was one of the first to sign up when Smart Cape came to the library in August 2002. He uses the Web to send e-mails to friends around the country, to read newspapers, and to look for a job. Politics and business

Total number of Smart Cape registered users as of February 2004: 7463

Atlantis Wesfleur	1,718
Brooklyn	1,048
Delft	1,183
Grassy Park	2,246
Guguletu	880
Lwandle	388

interest him the most. “This is much better because it’s free. It costs 17 Rand (US\$2.46) to go to the Internet café in Somerset West,” he says grinning. Sybokwe has not found work from his online searches, but Bartman reports that several Smart Cape users have found employment by e-mailing their CVs in response to advertisements.

Fourteen-year-old Tsoarelo Mtebele clammers onto the high stool in front of a computer and confidently starts reading his e-mails. “That youngster knows all about computers,” Sybokwe says with a smile— “He’s going to be a hacker one day!” Uncomfortable speaking English, Xhosa-speaking Mtebele says he usually looks at Web sites with games and soccer. He does not use the Internet to help with schoolwork, although other students sometimes do, according to Bartman. “I’ve been able to help them find information about the budget or to look for financial statements of sports clubs,” says Bartman.

“I preach the gospel that everyone should register so we can increase our library membership and encourage people not just to use the computers but also to borrow books. I also encourage teachers to give the learners assignments that require them to come and get Internet access, but the teachers are not really cooperative. I think it’s mostly ignorance. Most of the teachers don’t live here, and 90 percent of them have never seen the inside of this library. It’s an embarrassment,” Bartman states.

DELFT

Delft Library has around 8,000 members, more than half of whom are under 13 years of age. The five Smart Cape computers not only offer the chance to surf the Web or type assignments or CVs but also serve as home to a small informal economy. “I never see when or how it happens, but I know that some of the students and nurses pay others to type up their assignments or CVs for them,” says Ingrid Neethling, senior librarian.

Staff cutbacks mean that Neethling and her team of four librarians are always overstretched, trying to serve general users as well as the additional members the Smart

Cape site has attracted. She relies on a group of youths whom she affectionately refers to as “the boys” to help new users and oversee access to the five computers. “Each user is allowed 45 minutes, but some of them have figured out how to reset the clock, and they sit on the machine for an hour before someone comes to tell us they’ve been there for too long,” says Neethling.

Delft opens its doors at 10:00 each morning. The clientele changes as the day progresses. Older people come first thing in the morning, unemployed young men later. Students come in the afternoons and stay until the doors close at 7:00 p.m.

“Our oldest user is 70 years old,” says Neethling. “The boys taught him how to use the Web, and now he spends his time visiting all kinds of biblical sites. James is another



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Every day, children come to the libraries after school to use computers. Some stay until their parents pick them up after work.

elderly fellow; he spends his whole mornings in the library, sending e-mails and so on. His wife even phones him here if she needs him for something.”

Randall Kennedy is a Smart Cape volunteer. He is 21 years old and taught himself everything he knows about computers. “There are seven volunteers; Brandon Langeveldt and I trained two of them,” he says proudly. Between them, they make sure that there is always someone at the Smart Cape site to help users. “Older people want help sending e-mails, writing love letters, and so on. In the afternoons, we help people with information for their assignments—things like volcanoes, hurricanes, and AIDS information,” he says. “Smart Cape makes life easier. You can search online for jobs and then e-mail your applications without having to find a fax machine and send them off,” says Langeveldt.

GRASSY PARK

It’s 11:15 on a drizzly September morning when Dexter Anthony logs on to the Internet

at the Grassy Park Library—a single-story building in a working-class area restricted to “colored” residents during the apartheid years and notorious for its high crime rate and gang activity.

Dressed in street gear, a yellow beanie pulled down low over his eyes, Anthony exudes street smarts and gangster cool. “It’s great,” he says with a disarming smile, pushing his hat back up from his eyes. “I come here often. This morning I’m checking e-mails for my auntie. Her husband works on a fishing ship off the coast of Norway. I’m actually looking for a chat room for her so she can talk to him online.”

Anthony is also on an errand for his grandmother, checking to see whether or not a friend in Belgium has sent an e-mail message. If he receives a message, he will print it out and take it to his grandmother and then come back and type a reply. Anthony typifies many of the users on the Cape Flats for whom the Smart Cape project offers a world of new opportunities. As many fellow users do, he goes online to look for work. He’s studying and needs a part-time job.

Of the six pilot sites, Grassy Park has the largest membership: some 22,500 members and a staff of seven. Despite severe staff shortages, Anita Shaw, the librarian in charge, is extremely upbeat about the Smart Cape project. “It’s a very positive thing. I mean, we’re in information service, so through the Internet we can provide extra information, and people like using it. Smart Cape has offered the library staff a chance to learn,” she says.

Eric Klynhout, a volunteer from the community, has assumed responsibility for the project, which has taken a load off staff. He inherited responsibility for Smart Cape when it was just two months old. An energetic pensioner with a healthy mop of white hair, he is vigilant about keeping the system efficient and accessible to legitimate users. “We can’t have youth surfing porn sites. If we catch them, they’re automatically thrown off the system,” he says. Many Smart Cape users



Grassy Park has the largest number of users. It is located in a working class community with a large Muslim population.



Credit: BILL & MELINDA GATES FOUNDATION/PHOTOGRAPHY; CHRIS BENNION

Volunteers are vital to Smart Cape's success. Erik Klynhout, or "grandpa" as he is affectionately known, helps users every day at Grassy Park.

complete school assignments. This, Klynhout says, is directly related to the attitude of the principal at the local high school, whom he describes as "open minded" and eager for his students to learn about the Internet.

ATLANTIS WESFLEUR

Atlantis was a community established under the apartheid government with substantial subsidies to attract industrial investment and create employment exclusively for "colored" workers. In 2003, those subsidies have long been discontinued; unemployment now hovers around 50 percent. Atlantis is an hour's drive north of Cape Town.

Karin Johnson has worked at the Atlantis Wesfleur Library for 11 years. She has no formal training as a librarian but is a qualified teacher and loves working with people. When she joined the library, there were no computers. All books were registered manually, and a card system monitored the lending of materials. Under the old Western Cape Regional Services Council, she says, libraries fell under the Amenities and Cemeteries Directorate. In the postapartheid era under the Cape Metropolitan Council,

libraries were included in the community services portfolio. Additional restructuring under the City of Cape Town has brought libraries into the Directorate of Social Development.

Johnson is enthusiastic about the "new vision" for libraries that offers a much closer involvement between librarians and the communities they serve. She adds, however, that some of her colleagues are less comfortable with the changes that require them to interact more closely with the community. She has been nominated to sit on the Gender Task Team for the City of Cape Town. The purpose of the team is to promote women's development and gender equality.

In a community where domestic violence is widespread and women have little economic power, these are crucial development issues. "I feel passionate about the project. I'm someone who wants to work with people," Johnson says. Her enthusiasm extends to hosting a children's program on the local radio station, Radio Atlantis. "I present a story program for children. I read stories from books we have in the library and in that way help market the books we have. I also give parents advice about what they can read to their children and where to find books in the library. People are listening; it's wonderful. They come to the library to find the books they've heard about on the radio," she says.

Johnson is also involved in several special projects the library runs during the school holidays. "There are no facilities for children around here, no movies or anything. The library is the only place for them. During the holidays, it's flooded with children. Unfortunately, we don't get the resources we need."

Library membership at Wesfleur is around 11,000. Many of the newly registered members have signed up purely because of Smart Cape. Johnson says she and her colleagues have tried to capitalize on this as a means of introducing new members to other library services and promoting a culture of reading. "There are always crowds of people in the library, either using

the computers or reference books, but unfortunately, our circulation statistics don't show this, because relatively few people take out books. So now, if people use computers, they are encouraged to take out books." Johnson says many members regard their library membership card as a computer card. Demand is so high that staff introduced a system whereby users get a number when they come in to the library and wait until it's their turn for 45 minutes online.

Johnson is buoyed by the increased membership that the Smart Cape facility has attracted. She estimates that the library signs up between 90 and 150 new members each month because of the computers. Men are the majority of Smart Cape users, and Johnson is keen to change this profile. She designated August as "Women's Month" and arranged workshops focusing on business opportunities for women. "We had about 30 women attend. I showed them the Web, and afterwards they all enrolled at the library, so they could continue using the Internet. As for schoolgirls, when we go out to the schools, I always try to encourage them to come to the library." According to Johnson, most of the schools in the area have computers, so children are familiar with how to use them, but because they have no Internet connectivity, they do not know how to surf the Web.

In addition to local residents, a large community of foreign Africans—many are refugees from Angola and Congo—regularly uses Smart Cape computers. Fernando Mota has been living in the area for three years after fleeing the civil war in Angola. He goes online to read news of his homeland. He plans to return home as soon as he can find work. One reason the Smart Cape facility is so popular is the absence of an Internet café in the area.

Despite its foundation as a job-creation center where industry was subsidized to encourage development, Atlantis is a poor, isolated community with few support structures. Opportunities are desperately



Credit: BILL & MELINDA GATES FOUNDATION/PHOTOGRAPHS: CHRIS BENNION

Atlantis Wesfleur designated August 2003 as "Women's Month" and arranged workshops on business opportunities for women.

needed in this city, where crime and unemployment are major concerns. Alcohol abuse and domestic violence are widespread, and the local clinic is struggling to cope with the high incidence of tuberculosis. "People say that for every man, there are 10 women in Atlantis," says Johnson. "Those men who do have jobs all too often go directly from work to the shebeen (tavern) without even going home first. A lot of men are having affairs. Sometimes this place reminds me of Sodom and Gomorrah in the Bible. This community really needs positive things. The children don't see positive things around them. There's nothing for them here," she adds. Although there are no street children in Atlantis itself, many children leave the area and live off the streets in the wealthy suburbs of Tableview, a 45-minute drive from Cape Town. "Their parents don't care if their children have gone; all too often, they're too drunk to worry," says Johnson.

Despite many challenges within the community, the Wesfleur Library has a long list of positive examples that underscore the value of free Internet access in a poor community. For example:

- A young finalist in a national TV talent competition e-mailed his application from his Smart Cape e-mail address. A record company wanted him for a recording session and e-mailed him accordingly. Because he had not checked his e-mail and replied, the recording company called all six Smart Cape libraries to track him down. When they called Wesfleur, someone was able to get a message to him, and he made the journey to Cape Town in time for his recording session.
- A young man applied for work as a carpenter in Denver, Colorado. He got the job and left the country in September.
- A man applied successfully via e-mail for a job with the Mossgas Energy Company in Mossel Bay in the southern Cape.
- A mother and daughter registered on the Smart Cape system in anticipation of the daughter taking an au pair job in the United States. Before leaving, she taught her mother how to use e-mail, and now they correspond regularly.

GUGULETU

In her 28 years at the Guguletu Library, Principal Librarian Tholiwe Mahali has seen city administrations come and go as South Africa's changing political landscape has been reflected at the local-government level. In 1976, the library was burnt down during the student uprisings. It reopened in a community hall in 1981, and in 1998 moved to new premises under the administration of the City of Cape Town. "Nowadays, for the first time, we can choose books for ourselves, for our community," Mahali says of the changed political dispensation. "If you're a librarian, there's nothing you enjoy more than serving the needs of your people and choosing for the community." Under the apartheid regime, book selection was controlled centrally and

public libraries had little say in what books filled their shelves.

Membership at Guguletu numbers in excess of 4,000 adults and 5,000 children. A staff of five, including Mahalis, runs the library. She says the library is supposed to close at 8:00 p.m., but because of restructuring processes and staff shortages, it is forced to keep shorter hours. "If we had enough staff, we could stay open longer," she says.

Lubabalo Dzedze has been a librarian for the past five years and worked in Guguletu Library for the past two. He has a bachelor's degree in politics and history from the University of Cape Town and a postgraduate diploma in library and information science. Given his familiarity with databases and the Internet, it was natural that oversight of the Smart Cape project would fall to him. He says Smart Cape computers have made a huge difference in people's lives. The library signs up about eight new members each day—almost always people who want to use the computers to type up and print their CVs or look for work online. Others surf the Web for news and sports, monitoring their favorite soccer clubs and league log tables.

Dzedze says the Smart Cape facility has made a big difference in his work. "I do my work more efficiently now. It's easy to do a Google search and find information for our users. We always ask the schools to tell us what projects they are assigning their students so we can prepare information, but they seldom do. With the Internet, we need never be caught off guard. We can always look up the information that students need," he states.

Many school projects focus on relatively new topics about which the library doesn't have books. A common example is New Partnership for African Development (NEPAD), a program initiated by South African President Thabo Mbeki and his Nigerian counterpart, Olusegun Obasanjo, to secure development funding and regeneration of the continent. It's a popular topic for teachers to assign their students, yet little has been published. Without access to the Internet, students would be stumped.

The Guguletu Library and Smart Cape have played a vital part in a business venture belonging to Xolile Mzonyane. "It's the only way to go places while staying in one place," he says. Smart Cape has allowed him to explore his options, find out how to obtain a small business loan, and register his closed corporation. "I did all my projections on these computers, browsed the Web, saving myself transport money and what I would have had to pay online." He plans to open a franchised cell phone facility and is awaiting the shipment of materials that will enable him to start up his business. "I'm hoping I can get a secondhand computer from somewhere so I can do my books and stuff," he adds.

BROOKLYN

Brooklyn is a suburb situated between an industrial area on the west and an air force base on the east. Under the apartheid administration, this area was reserved for working-class whites and housed many of the city's poorest residents. Today, the neighborhood is multiracial.

The library is part of a new complex housing a community hall and clinic. Set back from the main road, the complex looks out to Table Mountain and downtown Cape Town. Jacinta Avontuur, the senior library assistant, had virtually no computer training when she was asked to supervise the Smart Cape computers. "It all seemed very easy during the training sessions, but when it came to the practical side of things back in the library, it wasn't always so simple. I would phone the help desk regularly," she says. She says there have been numerous problems with the system. "It's not very user-friendly. People don't know how to register, and we're not always able to help them. Another problem is that people come with discs, and they want to print out something and we can't open them," she states.

Not surprisingly, adults are the most frequent users in the mornings and children predominate in the afternoons. It is not uncommon, Avontuur says, for some children to skip school and come to the library instead. Twelve-year-old Julio Kaplan is a regular; he even comes to the library on Saturday mornings. Julio claims that school is often boring, and it's more interesting to come and play on the computers and surf Web sites. "The computers are a big novelty," says Avontuur. "On Mondays and during school holidays, the kids will be at the door from early on waiting for us to open at 10:00 a.m. At the end of the day, at 10 minutes before closing, it's hard to get them to stop. Still, it's a good thing. It keeps them off the streets."

The library is situated in close proximity to several wealthy neighborhoods where the libraries do not yet have Smart Cape computers. As a result, many of the Brooklyn Smart Cape users come from suburbs such as Tableview and Milnerton. Avontuur often gives computer books written for children to older patrons who are not yet computer-literate in order to introduce them to the basics of the Web. The oldest user is about 60 years old, she says, and the youngest is 6 or 7. "It's amazing. The youngsters know exactly



Credit: BILL & MELINDA GATES FOUNDATION/PHOTOGRAPHS: CHRIS BENNING

Smart Cape access points help South Africans, particularly youngsters, realize how information technology can change their lives.

what they're doing," she says. Library staff are now considerably more comfortable with the computers, although at first they were highly skeptical. "At first, they wouldn't touch the PCs, but I told them they couldn't rely on me all the time. 'What would they do,' I asked, 'if one day I wasn't there and patrons needed help?' So now they're much better."

The first Smart Cape user in the library on a rainy Saturday morning is Ricardo de Faria. He's a 20-year-old architecture student who lives across the road from the library. Born in Cape Verde, he traveled south to Angola with his family, but the civil war prompted them to move to Cape Town, where Ricardo has lived for the past 10 years. He uses the Internet to follow news from home and regularly visits the BBC News site to check on developments in Cape Verde. He hopes to go back there someday. His other duty is to send e-mails to relatives on behalf of his family.

Caleb Julius is 14 and at Tygerhof School. He's a frequent visitor to the library and loves the computers. "It's better than school. You can learn something here," he says with a smile.

Conclusion

The Smart Cape Access Project is still in its infancy. Given the success and lessons of the pilot project, the next step is to expand to the remaining 101 public libraries across Cape Town while providing computer literacy classes, developing local content, and helping achieve the vision of a smart city.

Project managers, librarians, and city officials in Cape Town are keenly aware of the challenges they face given the continuing transformation of their city, let alone their country, where combating poverty and joblessness is the top priority. Resources remain a constant worry. The cost of bandwidth and telecommunication charges are extremely high; in addition, there are costs involved in training and teaching communities to develop their own local content. Nonetheless, despite this climate of uncertainty and change, the team behind the pilot phase of the Smart Cape Access Project has injected a fresh energy and direction into public libraries, their staff members, and the lives of many disadvantaged citizens across Cape Town.

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Smart Cape users

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