

Digital Doorway: Enriching your mind

G CAMBRIDGE
Meraka Institute, CSIR, PO Box 395, Pretoria, 0001
gcambrid@csir.co.za



Digital Doorway™

The Digital Doorway is a joint project between the South African Department of Science and Technology (DST) and the Meraka Institute of the CSIR. It aims to promote computer literacy and associated skills in Africa. The assumption is that people have the inherent cognitive ability to learn computer skills with minimal external intervention. However, computers must be easily accessible to potential learners in an environment conducive to experimentation. Apart from the ability to read text, literacy involves image and screen literacy and particularly, information navigation. The information provided by the Digital Doorway enables learning by 'discovery' rather than by 'lecture'.

The inaugural Digital Doorway installation in South Africa was completed in 2002 in Cwili, a rural village, outside the mouth of the Kei River in the Eastern Cape. Research by a local cognitive scientist showed promising results:

- User age ranged from primary school children to young and older adults
- Familiarity promoted spontaneity, longer visits and increased user confidence. The most spontaneous participants were younger children in larger groups of 12 and more
- Typical visits lasted between 30 and 60 minutes
- Passive participation changed to active use as user confidence grew, and computer literate users became leaders and demonstrated skills
- Competition stimulated peer learning among the younger children, while collaboration was the preferred learning method for young adults.

ACCESSIBLE TO ALL

Phase 2 of the project included changing the single-terminal commercial kiosk to a custom-designed four-terminal kiosk. The housing was designed according to the following principles:

- International ergonomic best practices to ensure use by the widest group of potential users
- Ruggedised construction to minimise vandalism and high usage
- Attractiveness
- Easy maintenance
- Minimal unauthorised access
- Minimal installation time
- Easily modifiable equipment to keep pace with updated hardware specifications
- Minimal heat build-up inside the housing
- Cable access through the roof, or the floor, or a combination of these options.

Phase 3 of the project required a new housing and system architecture due to technology progress and feedback from cognitive scientists. The criteria were a truly Open Source operating system and a platform that would enjoy long-term support:

- An Ubuntu Linux (Dapper Drake 6.06 LTS) was selected as the operating system
- The architecture was changed to a single server and multiple fat clients
- The change in system architecture made the system easily extendible
- The housing was adapted to a three-terminal solution, facilitating easier manufacture, installation and maintenance
- Cable access through the roof, the floor or the rear panel, or a combination of these options.

EFFECTIVE SYSTEMS

Effective e-inclusion projects require fresh and interesting content. Users' early misconceptions change to excitement by the end of the installation. Sustaining this excitement is dependent on the quality, quantity, variety and relevance of the content. Users soon become familiar with the experience - if no new content is available, boredom sets in. However, the regular provision of updated, relevant content encourages users to move from familiarity to peer learning and eventual competence.

- The Digital Doorway system is fitted with a broadband satellite multicast solution for the downlink and a GSM Cellular GPRS backhaul.
- GPRS is also used to obtain statistics from the system to determine if it is still operational and provide data on which applications are being used. This allows tracking of trends and identification of the most popular applications.

By the end of 2008, 200 Digital Doorways will have been deployed in South Africa. We also have Digital Doorways installed at UNICEF in New York, in Addis Ababa, Ethiopia, and in Lesotho.



2002
Cwili



2004
Mamitwa



2005
Pampierstad



2007
Ntshongweni



2007
Rhodes



2008
Barkley East



2008
Soshanguve
FabLab

As most experts in Africa will tell you, the best way to bring the continent's rural communities out of poverty is to give people tools and skills to do the job for themselves - an objective that the Digital Doorway project is tackling head on.

