ITWEB

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Global agribusiness Syngenta has become the first private-sector partner in the Digital Doorway (DD) programme. The DD is a joint initiative of the Department of Science and Technology and the Meraka Institute of the Council for Scientific and Industrial Research (CSIR), intended to help bridge the 'digital divide'. "We're investing significant capital into the DD over a three- to five-year period, starting from the middle of last year," reports Syngenta South Africa human resources and corporate social responsibility manager Kate Tucker.

A DD is a robust computer terminal, placed in a location – such as a community centre – that is accessible to the public. It is not an Internet terminal.

"The primary objective of the DD is education through experimentation," explains Meraka Institute engineering technologist Grant Cambridge. "Each DD consists of a single server and two diskless fat clients. The software required is preloaded in this server, and includes a schools Wikipedia, a full-text-based Wikipedia, maths games, science games, science simulations, free textbooks from Project Gutenberg, and videos on aerospace and science from the US National Aeronautics and Space Administration."

"Part of our investment is getting agriculture-related science and technology material developed, written, edited and handed over to the CSIR for loading into the DDs – this agricultural material will go on all DDs countrywide, not just those funded by us," elucidates Tucker. "The main objective is to enhance the image of agriculture. There is a lot of baggage around agriculture in South Africa. It is seen as grubbing in the soil. We want to show that it is a modern sector, which involves engagement with science, technology and innovation. Agriculture is very scientific these days, but the youth still do not realise this."

The first fruit of Syngenta's involvement in the initiative was to sponsor the DD at a farm school on the Manjoh Ranch outside the Far East Rand town of Nigel. This was then moved to the Almac Development Centre in Alra Park, Nigel. (Manjoh Ranch's owners, the Da Costa family, had concluded that not enough people had access to the DD on their property, and thought it would make a bigger and more beneficial impact if moved into town.) Syngenta will be funding another five DDs this year, and more in 2009 and 2010.

The DDs are assembled by the Meraka Institute, although manufacture of the components is contracted out, and a subcontractor provides the labour for the assembly and deployment of the units. Each DD is contained within a steel box and fitted with splashproof (IP65-rated) steel keyboards, while the screens are mounted behind plexi- glass, which is 250 times stronger than glass. There are several versions of DD, including four-terminal, three-terminal and single- terminal models.

DDs use open-source software – Ubuntu Linux, with Xfce as the user interface. "Each DD server has three diskless fat clients (which load programmes from the server), a Mindset server which provides additional content, as well as a multicast satellite download, and a GPRS (general packet radio services – such as cellphone) backhaul," states Cambridge. "So we can multicast data down to each DD but, to save money, for the DD to talk back, it can send small files through the national cellphone infrastructure." There is significant asymmetry in the amount of information that is sent to DDs (a lot) and the amount each DD needs to send back (a little).

"The children love the DD," reports Almac Development Centre manager Clarissa Clements. "We, as a centre, service four schools – two high schools, two primary schools – within a kilometre radius; all our community's children are targeted by this DD.

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