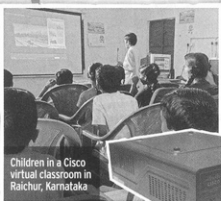# A Box Called Dwara

Dwara, the code name for Cisco Education Enabled Development (CEED) 2700, is a complete cloud and infrastructure solution for education and skill development

It is conceived, designed and manufactured in India, but has global significance. It costs $1 per child per month over three years

It has everything a classroom needs – router, computer, projector, cameras, speakers, microphones, and even power management

Children in a Cisco virtual classroom in Raichur, Karnataka

The pilot projects in Hoskote, Raichur and Shimoga in Karnataka, have already clocked 600,000 student hours

It has been designed to withstand heat and dust, and is theft resistant

It lets teachers in a central location interact and share content with students in multiple locations in real time

In the Indian context, where connectivity is a problem in many regions, Tuli says the flip classroom model is useful, as it lets children study from content pre-loaded on a device and then interact with the teacher in a classroom. He says this is where access to quality content through massive open online courses, or MOOCs, can be effective. Such content is freely available online. "We should stop teaching people things that they can Google," he says. "The ability to analyse information is what we need to inculcate."

Despite the abundance of free content, there is still a bottleneck, especially in technical education. AICTE's Mantha says it is looking at hosting quality content

through the National Programme on Technology Enhanced Learning. This collaboration between the Indian Institutes of Technology and the Indian Institute of Science provides free web and video courses in engineering, the sciences and the humanities. "This content can be hosted in the cloud and made interactive," says Mantha. "Interactivity is the key, as technology is based on concepts and algorithms. Hence the importance of blended education cannot be ignored. The major work still has to come from the teacher, who cannot be replaced."

Asheesh Raina, Principal Research Analyst at Gartner, says everything in and around the cloud will take a while to become mainstream. "The landscape will emerge

only when there is equilibrium of demand and supply." Mantha adds that it is important for any cloud solution to be able to become sustainable after a point, and this includes content and the last mile.

The adoption of the cloud in schools is expected to pick up once last-mile connectivity is ironed out. This could happen after the high-speed pan-India National Knowledge Network starts reaching the villages that most require such assisted education. "Roads don't reach all villages, but we can take fibre optics everywhere," says CSIR's Brahmachari. "In this new world, we should be able to put content on the cloud and take it to all these locations." ◆

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