

K-Yan Compact Media Centre

Innovation Report

I. The Context

- (1) There is an increasing need for integrating the use of technology at the community level in general and more particularly in education. This need has been articulated by a cross section of groups: Governments, educational institutions, policy makers, administrators, teacher, students and parents
- (2) Current technology requires use of several different, complex and expensive electronic devices and systems for the same – multimedia computers, television sets, large format display devices, audio players, VCD/DVD players and game stations. However, each of these products address only a few of the desired requirements
- (3) The current design of personal computers, for instance, allows them to be used by single users only – single small screen, close distance while learning, providing an “isolated” experience. Teachers find it difficult to explain a point to the whole class on the small screen, making the PC inadequate for group learning, which is the typical classroom format
- (4) Further, given the cost of setting up a computer lab, to provide capacity for computer aided learning apart from computer learning, would imply high level of investments. Alternate technology platforms, which could meet the needs of a large class e.g. a large plasma TV, or an LCD projector, are either as expensive, or have limitations in their mobility and robustness
- (5) IL&FS has been working in the education space for the last 6 years in integrating the use of technology in curriculum teaching through its subsidiary, the IL&FS Education & Technology Services Limited (IETS) which has been specifically incorporated for this purpose
- (6) The inadequacies of the available hardware in this context led IETS to initiate the process of designing a multi-media delivery platform suited to the needs of group learning through technology. IETS worked with Industrial Design Centre (IDC), Indian Institute of Technology (IIT), Bombay in development of K-Yan-Compact Media Centre
- (7) K-Yan is a portable integrated multimedia electronic device built on convergence technology particularly for use in storage and processing of digital / analog signals from satellites, broadcasts, telecasts and for ultra-large size display of images, for community use in areas of education, shared learning, community awareness, promotional and publicity campaigns, public governance, entertainment, internet, broadcast access and so on

(8) Period: The K-Yan Development commenced in July 2003 with the development of prototypes by IDC, IIT-Bombay. Commercial Production commenced in March 2004. The process of design and product development is a continuous process and is being undertaken by a separate K-Yan Design Centre. The Design Centre is manned by experts drawn from the fields of product design, technology and production planning

(9) Needs and Objectives of the Innovation: Delivery of technology-assisted training has, traditionally been undertaken through a PC Lab set-up wherein the learners work in small groups to browse educational content. This approach, while being optimal, is not a commercially feasible proposition on account of the large investments required. It is estimated that the cost of setting up a PC Lab would be in excess of Rs 6 lakhs and would additionally call for a dedicated room/ computer lab. Moreover, Personal Computers do not facilitate group or community learning which, on account of its collaborative and peer learning, is widely accepted as generating learning outcomes

Connection of PC terminals to large screen 29 inch TVs to deliver technology-assisted training directly in the training room also poses problems with respect to screen size, relative to the class strength and output resolution apart from increasing the cost of infrastructure. A lower-resolution system such as a large-screen television, will not display fine text or detail which would make content less or unreadable, a factor critical to electronic page-turners

PCs connected to low-brightness projectors, which are usually cheaper, do not perform well in normal natural light conditions (day-time). Experience indicates that anything less than 1400 ANSI lumens is unsuitable for multi-media interactivity in an instructor-centric classroom

Alternate technology platforms, which could meet the needs of a large training group e.g. a large plasma TV, are either as expensive, or have limitations in their mobility, robustness and versatility

There is therefore a need to deploy a technology, which is amenable to group learning while not being constricted by the shortcomings of present technology viz. (high) cost and (lack of) richness of learning experience and interactivity through the delivery mechanism deployed K-Yan has been specially designed keeping the above in mind

(10) The K-Yan has been conferred the Maharashtra IT Award – 2004 by the Government of Maharashtra

II. Implementation of Innovation

- (1) Productising K-Yan meant involvement of not only IDC, IIT- Bombay but also working with over 20 vendors including 3 international vendors. IETS also worked in developing a manufacturer required for K-Yan assembly in terms of transferring technology / processes required for K-Yan assembly and building capacity within the identified manufacturer to undertake the assembly
- (2) IETS recognized that the education sector is not adequately funded and therefore worked towards commercially producing a cost efficient product. Towards this end, it has developed a model for outsourced manufacturing in Special Economic Zone
- (3) The challenge of developing a product suited to the demands of the varied Indian climate was met by working closely with IDC, IIT-Bombay and with component suppliers
- (4) The product thus developed has been tested by Electronics Regional Test Laboratory, Ministry of Communication and Information Technology and has been endorsed by Space Applications Centre of Department of Space for its compatibility with the Edusat Project
- (5) The wide coverage (K-Yan has been deployed in 49 locations across India thus far) necessitated establishment of a robust service support network. IETS overcame this challenge of establishing a pan-India service network in a short time of 9 months by establishing relationships with a number of local service providers. This, coupled with its relationship with component suppliers, translated into fast turn-around and minimum downtime

III. Impact Assessment

- (1) Achievements within the Organization: The development of K_Yan has meant a paradigm shift for the organization in terms of moving away from being a pure education services provider. Existing skill sets within the organization were realigned and resources with fresh skill sets introduced for the K-Yan productisation. Intensive in-house training and capacity building programs were undertaken for Technology and Education Service Consultants within the company so as to equip them to properly guide schools and educational institutions in the use of K-Yan
- (2) Achievements Outside the Organization: K-Yan has, in less than 10 months of its launch, been deployed across over 260 schools and educational institutions. More importantly, the diverse usage of K-Yan - in rural communities, by NGOs, for information dissemination across a wide geography through the use of vehicles etc. - has validated the thought, its implementation methodology and therefore the innovation itself

K-Yan has been recognized at various levels of Government as being an innovative device for enabling technology-assisted education. The Department of Information Technology & Biotechnology, Government of Karnataka, has, for instance, recommended the preferential tax treatment for K-Yan on the basis of its utility for the education sector

The Government of Maharashtra has also recognized IETS's contribution in bringing technology to education and has awarded it the Maharashtra IT Award-2004

- (3) Specific Socio-Economic Impacts : As a natural outcome of its inherent advantages, an appropriate technology like K-Yan, which facilitates group learning, can be used to counter problems highlighted by the pre-project activities of Sarva Shiksha Abhiyan (SSA) viz. lack for joyful learning, shortage of teaching-learning material, high repeater rate, remoteness of school and shortage of teaching staff

Experience has shown that use of technology-assisted education leads to improvement in class attendance, pass percentage, student enthusiasm and teacher motivation levels and fall in drop-out rates. K-Yan effectively enables this in the school context

On a community level, it is imperative that the use of technology goes beyond just providing access to news services and application forms through citizen-government portals – technology needs to transform into a role of an enabler of development. Technology needs to be leveraged to benefit a cross-section of development targets – health, education, empowerment, and employment generation. Technology interventions facilitated by K-Yan can be geared towards such community-based services