Smart Schools
Smarter Asia

from policy to action

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1.3 million Ghanaian children not in school

Roughly 1.357 million children do not go to school in Ghana, according to the Education for All global monitoring report 2007. The United Nations Educational, Scientific and Cultural Organisation, released the report recently.

Nigeria is worst off with 8.11 million out-of-school children, Pakistan a close second with 6.463 million, India at third with 4.583 million, Ethiopia at fourth with 3.615 million, Saudi Arabia at fifth with 1.630 million, Mozambique at sixth with 1.089 million, Ghana at seventh with 1.357 million, Niger at eighth with 1.326 million, Burkina Faso at ninth with 1.271 million, Kenya at 10th with 1.225 million, Cote d' Ivoire at 11th with 1.223 million and Mali at number 12 with 1.172 million out-of-school children. The EFA Development Index for 2004 also showed that 23 out of the total 77 million out-of-school children are in Nigeria, Ethiopia, Pakistan, and India.

Next issue:
New age learning in Malaysia

NGO study holds many lessons for Indian govt schools

In most government schools in India, students stop attending classes after they get scholarships. Most of the government school teachers find it difficult to teach mathematics. The average age of the teachers is 50-60 years old. So, despite various training programmes, they are not motivated to make an extra effort.

These are some of the findings of a non-governmental organisation (NGO), which conducted a survey of 40 government primary schools functioning under the Sarva Shiksha Abhiyan, the flagship education programme of Government of India. The NGO, Ehsaas, released its findings recently.

Vocational subjects in CBSE course soon

The Central Board of Secondary education (CBSE) in India will be introducing vocational subjects required by the industry at the plus-two level in a phased manner to equip students for employment. The course would be known as Professional Competency Education or Occupational Oriented Education and some of them have been identified so far. The subjects could range from health care, fashion and garment technology, BPO call centre courses to financial management transactions. President A P J Abdul Kalam had spoken about equipping students with vocational training at the ten-plus-two level saying there was a need for them to acquire skill at that stage.

YOUR SAY

India learns to spend on education

Domestic household expenditure on food and clothing has come down significantly, while their spending on health, education, transport and communication has improved, the Associated Chamber of Commerce and Industry (Assocham) in India study has found.

Expenditure on education, almost trebled to 15 per cent in 2006 from 5.5 per cent of their total income in 1999-2000. The rising income levels coupled with increased awakening have led to more spending by household on education and other areas, which reflects the improvement in the living standards particularly the middle class.

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Editorial

Be the change!

Blessed with a vibrant culture and diverse languages, cultures and backgrounds, South East Asia has many exciting experiments in adopting ICTs for learning, education, and training. While hard-core software and collaborative learning tools have mostly been written in the global North, the number of innovative adaptations of these tools and technologies to embrace technologies in countries like Singapore, Malaysia, Philippines, etc. comes with a strong national policy making and master plan approach. Learning Management Systems (LMS) and Instructional Design are the most new of these concepts. Whether it was an early adoption of digital technologies like television, video or computer aided learning, the emphasis has been on teacher training, focus on basic proficiency and core IT skills, as well as appropriate infrastructure and hardware acquisitions to create a conducive environment for schools and learning institutions to adopt technologies and go smart.

In this issue we are presenting how Malaysia has rapidly incorporated smart learning in schools with the government drawing up visionary plans for Education through Smart School initiative. The plan to make all schools smart by 2010 follows the Pilot Project from 1999 to 2002 and the post pilot phase from 2002 to 2005 and now the focus is on students making effective use of ICT for active learning, teachers focus on use of ICT for professional and personal growth; ICT is used for building connections between curriculum, instruction and assessment, and for school improvement.

The government of Singapore's IT Master Plan for Education, now in its second phase (2003-2007), is also discussed, along with some inside pages of Smart School experiences of Philippines and some smart talks with the founder of SMART Technologies, Nancy Knowlton.

The level achieved by all these countries is what other countries strive for. Interesting projects and programmes launched in other countries are also able to provide lessons for countries preparing to draw up smart plans and visions.

Digital Learning Asia 2007 conference being held as a part of the eAsia 2007 summit in Putrajaya International Convention Centre in Putrajaya, Malaysia from February 6-8, 2007 is aiming to take stock of the scenario in Asia. Mark your calendars and join the most exciting event and exhibition on ICT for Development.

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The Malaysian Smart School Initiative

Deconstructing Secondary Education

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The Smart Schools in Malaysia were never intended for smart students only when they were first envisioned. It was an ambitious project that brought together the Education Ministry, private industries and other stakeholders to work hand-in-hand to create a schooling culture that is informed, thinking, and creative using technology as an enabler in the teaching and learning process in line with the country's needs to make the critical transformation from a production-based economy to a knowledge-based economy by 2020. The project started with 87 pilot schools from 1999 is now being expanded to reach 10,000 schools by the year 2010. The featured story focuses on the implementation of the teaching and learning processes at the pilot schools and the challenges faced by the schools in trying to achieve the stipulated goals of the Smart Schools. It also looks at the post pilot phase and the rollout plans lay down by the Ministry to move forward towards achieving Malaysia's vision of producing knowledge-based workers.

At the initial stage of the smart school project, many people had the notion that the Smart School was a school for smart students only, and that without the presence of technology or computers, a school could not be termed a Smart School. Therefore, to put it in the right perspective, it must be stressed here that the Smart School is for all children and technology is just an enabler and not a driver, and its presence in the schools does not mean it can catalyse better educational outcomes. It is however correct to say that with the use of technology, we are able to take the Smart School to its destination more quickly and efficiently.

The Conceptual Blueprint that was published in 1997 defines the Smart School as "a learning institution that has been systemically reinvented in terms of teaching-learning practices and school management in order to prepare children for the Information Age". The word *"systemically reinvented"* is used in the definition

because the Ministry of Education, Malaysia intends to make a radical transformation to the education system by reviewing the curriculum and pedagogy, enhancing the roles of teachers, administrators, parents and the community, and empowering the students to become more responsible for their own learning by practising self-accessed, self-directed and self-paced learning.

The presence of the information and communication technology (ICT) is critical because it helps in making the teaching and learning processes more interesting and enriching, and in the long run, the students will become more technology savvy. The Smart School initiative has been planned to ensure that the education system prepares future Malaysian citizens not only as knowledge workers for the Information Age but to be able to achieve Malaysia's vision of becoming a fully developed nation by the year 2020.

The Pilot Phase

The Smart School project started in early 1996 when the Ministry of Education (MOE), Malaysia first discussed its concept and implications on the education system. By late 1996, the Smart School Flagship became one of the seven applications identified under the Multimedia Super Corridor (MSC) initiative (The MSC is a 15 x 50 km zone, stretching from the Kuala Lumpur City Centre to the Kuala Lumpur International Airport launched in 1996 as a regional launch site for companies developing or using leading multimedia technology).

The Telekom Smart School (TSS), a consortium led by Telekom Malaysia was awarded the contract to develop

the applications. The Multimedia Development Corporation (MDeC), a private company wholly owned by the Malaysian Government to manage and market the MSC, also collaborated with the Ministry of Education to ensure the implementation of the Smart School flagship.

Ninety schools throughout Malaysia were identified to pilot the project but this was later reduced to 87 because three new Smart Schools could not be built on time when the pilot was launched. This included 83 secondary and 4 primary schools. Of these, 6 new schools (2 secondary and 4 primary) were built and provided with the level A (Full Classroom Model) Smart School technology specification and the rest were existing secondary schools (41 fully residential schools and 40 day schools) that were provided with level B (Laboratory Model) and one school with level B+ (Limited Classroom Model) technology specifications. Each new Smart School with the A technology level was provided with 520 computers (7 computers in all the classrooms and science labs, 4 computer labs with 36 computers each, and the rest in the teachers' room, resource centre, and the administrative office); Level B schools were provided with 37 computers (one computer lab with 21 computers, and the others in the resource centre and administrative office); and the Level B+ school was provided with 81 computers (6 computers in 15 classrooms and science lab and the rest in the resource centre and administrative office).

- Technology Infrastructure comprising IT and non-IT equipment, Local Area Networks, and a virtual private network that connects the pilot schools, the Ministry's Data Centre and Help Desk;
- Support Services in the form of a centralised Help Desk, and service centres throughout the country to provide maintenance and support;

- Funding for the Smart School Project was provided by the government with an allocation of RM400 million, of which RM100 million was for the training of administrators and teachers on the Smart School concept and RM300 million was for the implementation of the *Smart School Integrated Solution* (SSIS) in the 87 pilot schools under the Pilot Project Agreement between the Government and TSS signed in 1999.

The Smart School Curriculum was developed by the Curriculum Development Centre; pre-service and in-service training of teachers was conducted by the Teacher Education Division; and the training of school administrators was undertaken by the Aminuddin Baki Institute, the Ministry of Education's staff development centre.

The Smart School Pilot Project ended in December 2002, with 87 networked schools throughout the country, 1494 courseware titles for the 4 subjects, a computerised and integrated Smart School Management System, a Help Desk and Data Centre, and trained administrators, teachers, and IT coordinators in all the pilot schools.

The Smart School concept

The teaching and learning environment is integral to the Smart School concept and comprises four areas, namely, the *curriculum* that is designed to help students achieve overall and balanced development; *pedagogy* that allows for the appropriate mix of learning strategies to ensure mastery of basic competencies and promotion of holistic development; *assessment* that is designed to give accurate feedback of students' readiness, progress, achievement and aptitude; and *teaching and learning materials* that are cognitively challenging and motivating by combining the best of network-based, teacher-based, and courseware materials.

Even before the pilot project was officially launched in July 1999 with the signing of the agreement between the government of Malaysia and TSS, the schools identified for the pilot project were already asked to implement the Smart School teaching and learning process in January 1998, and the four subject teachers were required to introduce "smart" teaching and learning, with or without ICT. In-service teacher training had already started the year before with one teacher for every subject from each pilot school undergoing a 14-week course at selected Teacher Training Colleges. These teachers in turn conducted in-house training for their colleagues.

Initial evaluation of the Smart School Pilot Project

With the implementation of the Smart School project, the Schools Division was requested to coordinate the evaluation process, and the collaborative monitoring was carried out twice, once in 2000 and another one in 2001, after which it was taken over by the Smart School Team at the Technology Education Division. When the monitoring was conducted in 2000 and 2001, the Smart School Integrated Solution was not fully released to the schools and the full integrated solution was only utilised fully in March 2003.

Evaluation of the Pilot Schools in the post-pilot phase (2002 – 2005)

When the pilot project was successfully concluded in 2002, evaluation studies were carried out by various groups commissioned by the Ministry of Education and MDeC. These included a benchmarking study by Frost and Sullivan, an independent consultant, to compare the Malaysian Smart School's Integrated Solution with eight other countries, a study by local academics, and technology evaluation by the Smart School team and TSS.

Teaching and Learning in a Smart School

In the Smart School Pilot Project, the teaching and learning materials were developed for only four selected subjects, namely, Bahasa Melayu (Malay Language), English Language, Science and Mathematics. The materials developed were in the form of browser-based courseware, teachers' guides, student worksheets, and exemplar lesson plans. The instructional design for the materials took into account the curriculum specifications and the pedagogical demands of the Smart School as described in the Conceptual Blueprint as follows:

- Must cater to the different capabilities of students, for example, their learning styles, multiple intelligences, and learning modalities;
- Be suitable for a variety of learning environments, ranging from teacher-centred to student-centred environments;
- Allow students to practise self-paced, self-accessed, and self-directed learning;
- Must have built-in assessment capabilities so that assessment records can be stored electronically for teachers to monitor students' progress;
- Promote values, skills (especially creative and critical thinking skills), knowledge and language across the curriculum; and
- Allow for horizontal integration between subjects, and vertical integration between learning areas in a subject.

The self-paced, self-accessed and self-directed learning is a new feature of the smart school teaching and learning process in which it is envisaged that this type of learning can be facilitated via the use of technology.

The benchmarking study compared the merits of the SSIS and its components with similar implementations in Australia, Britain, Canada, Ireland, Japan, New Zealand, Singapore and the USA to benchmark their best practices in ICT-mediated education with that of Malaysia. The study reported that no other country had contemplated automating the whole school process and the Malaysian achievement had brought such sophisticated advantages within

Smart School team and TSS found that the Smart School Courseware was under-utilised as teachers preferred to use the newer courseware produced to teach Science and Mathematics in English while the Smart School courseware was in the Malay Language. This was because the government changed the policy for the teaching of these two subjects in English starting in 2003 for Primary Year 1, and Secondary Forms 1 and Lower Six students.

from 2006 to 2010. The plan to make all the schools "smart" by 2010 would leverage on all the ICT Initiatives the Ministry of Education had undertaken such as the Computer Lab project (to provide computer labs to all schools), Teaching of Mathematics and Science in English (PPSMI), Training of teachers to teach Mathematics and Science in English (ETeMS), SchoolNet Project (to provide internet broadband facilities), and Educational TV (ETV).

Following the Pilot Project from 1999 to 2002 and the post-pilot phase from 2002 to 2005, the Ministry of Education developed a visionary plan for the roll out of the Smart School from 2006 to 2010. The plan to make all the schools "smart" by 2010 would leverage on all the ICT initiatives the Ministry of Education had undertaken such as the Computer Lab project, Teaching of Mathematics and Science in English, Training of teachers to teach Mathematics and Science in English, SchoolNet Project and Educational TV

the reach of the average child attending a government school. The Teaching and Learning (TLM) courseware was also tailor-made for the Malaysian curriculum whilst schools in the other countries used courseware developed for the generic market. One of the recommendations made by the study was to intensify change management programmes and pedagogy training for all teachers on how to integrate ICT in teaching and learning.

The study by the local academics found that almost half of the teachers surveyed mentioned that in-house training for subject teachers was only moderately successful in achieving its objectives and the trainings were not repeated for new teachers who had just been transferred to the school and had never attended any Smart School training. The Senior Assistants also said that the teachers needed more effective training than what was available and delivered in-house.

The technology evaluation by the

Findings from the evaluations helped the Smart School team to identify measures to try to overcome the issues with regards to technology, infrastructure, support, and human resources.

Making All Schools Smart

In the original Implementation Plan, the Ministry of Education intended to use the findings of the Pilot Project to prepare a Master Plan to ensure that all schools in the country become Smart Schools in stages, by the year 2010. The Government of Malaysia would play the role of architect and driver by preparing guidelines and providing basic amenities to schools, and actively encouraging all schools to become Smart Schools on their own initiative by using their own financial resources and expertise.

Following the Pilot Project from 1999 to 2002 and the post-pilot phase from 2002 to 2005, the Ministry of Education developed a visionary plan for the roll out of the Smart School

Much of the activities between 2006 until 2010 will be focused on ensuring that all schools are equipped with the hardware and courseware (and all new courseware developed will be web-enabled), and rigorous training of teachers and administrators for the implementation of the Smart School, and change management programmes conducted to instill the ownership of the Smart School initiative among the stakeholders.

The Malaysian government has made an ambitious and bold initiative and has laid the foundation for our schoolchildren, the future citizens, to progress towards achieving Vision 2020. It is now up the various stakeholders to play their part and ensure that the path towards achieving the goals is obstacle-free. ■

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Country Perspective

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E-learning Practices in Singapore

e-Learning in Singapore has its roots in the first generation type of technology-based training during the early 1970s. That was the period when mainframe computers were selectively used in banks, manufacturing plants, major government ministries like the Defence and the universities. Later when mini-computers became popular, computer-based training packages were developed on the mini-computers like the Honeywell and the PDP series of mini-computers. When the trend shifted towards the use of the desktop Apple II computers and the IBM-compatible PCs, teachers and trainers began to develop many computer-assisted learning packages using languages like the Pilot language and the Quest authoring system.

Next came the widespread use of video-based training during the early 1980s. The laser disc player became one of the more popular equipment to use for playing back video clips of training such as those for the front office hotel staff. Many multi-media based authoring software systems like the IconAuthor and the Toolbook were used widely to develop multimedia-based computer-based training. The laser discs then made way for the smaller and more convenient CD-ROMs.

Finally when the Web became very popular some time in 1994 and 1995, people started to use the Internet to browse the World Wide Web and create innovative applications. It was also during this time that people began to realise the need to track student's learning. E-learning content developers started to use e-learning standards like the AICC.

The polytechnics and universities

E-learning in Singapore took off in a big way when the Web became very popular some time in 1994 and 1995. The polytechnics and universities were the early adopters and champions of e-learning. However, e-learning in the schools in Singapore were given a boost especially with the 1st IT Master plan for Education which lasted from 1997 - 2002. Since then there is available the 2nd IT Master plan for Education, which will last from 2003 – 2007. The article presents an overview of the e-learning practices in both the education side as well as the corporate world in Singapore. What about individual e-learning companies? How do they survive? How can the effectiveness of e-learning be measured, whether it is in a school environment or a corporate environment? The article makes all observations and brings answers too.

were the early adopters and champions of e-learning. However, e-learning in the schools in Singapore were given a boost especially with the 1st IT Master plan for Education which lasted from 1997 - 2002. Since then we have the 2nd IT Master plan for Education, which will last from 2003 – 2007.

E-learning in the schools

The road towards the effective use of technology in teaching and learning in schools started with the 1st IT Master plan for Education. This Master plan started in 1997 and it set up the IT and training infrastructure for all the schools in Singapore. In particular, the 1st Master plan achieved the following:

- Teachers were expected to acquire the basic proficiency in IT integration.
- All teachers were trained in the IT core skills (30 – 50 hours per teacher per year).
- There was a compulsory module in initial teacher training on IT in

the National Institute of Education (NIE). All schools would be equipped with adequate IT infrastructure and be provided with proper IT support.

- All schools would be networked and connected to the Internet.
- Teacher: Notebook ratio to be 2:1. This means having two teachers to share one Notebook PC.
- Pupil: PC ratio of 6.6:1 (for primary schools); for secondary schools, the ratio is 5:1 (secondary/JC).
- Other IT equipments like projectors, printers, etc. would be provided.
- Every school would be provided with one Technology Assistant who will assist the teacher in IT support.
- There was widespread acceptance of IT as a pedagogical tool.

Unlike the 1st IT Master plan for Education which focused more on developing the IT infrastructure, the 2nd IT Master plan for Education emphasised more achieving the

effective and pervasive IT integration into the curriculum to bring about engaged learning.

The following are some of the intended outcomes in the 2nd IT Master plan:

- Pupils use IT effectively for active learning.
- Teachers use IT for professional and personal growth.
- IT is used to enhance connections between curriculum, instruction & assessment.
- Schools have capacity and capability in using IT for school improvement.
- Widespread infrastructure support and effective use of IT in the classroom.
- Active research on IT in education would be strongly encouraged.

In terms of the use of the Learning management System (LMS), the following are the results from a survey:

- 75% of schools own/subscribe to a LMS
- 61% of schools that do not own/subscribe to a LMS intend to purchase/subscribe to one
- Average cost of procuring a LMS has dropped from about S$50 - S$80 in 2003 to about S$20 – S$50 in 2005
- 62% of the schools preferred to procure their own LMS

In addition, most of the schools felt that content is the most important item in e-learning compared to either the system or the support.

In contrast to the schools, e-learning in the institutions of higher learning (polytechnics, Institute of Technical Education and the universities) have the following characteristics:

- Decisions are made independently as all the institutions of higher learning (IHLs) are totally decentralised.
- Every IHL has its own e-learning system team and content development team.

- E-learning in all the IHLs is delivered mainly via LMSs, e.g. Blackboard, IVLE, WebCT, Moodle.
- Some contents are subscribed from vendors like SkillSoft and NETg.

Generally, e-learning in Singapore schools are rather widespread. However, sometimes there are lessons to learn from when there are some national emergencies. For example, the country faced the SARS pandemic in 2003 and all schools were closed at short notice. The lessons learnt from the situation have made the education planners and policy makers more supportive of e-learning for all schools in Singapore. In fact, since then the Ministry of Education has been actively preparing for a national emergency such as that of a bird flu pandemic in Singapore. There are

Type of content used

plans to ensure that all schools in Singapore have access to learning management systems to deliver online lessons when schools have to be closed because of a pandemic.

E-learning and corporate bodies

The situation in the corporate bodies is very different. Corporate bodies are mindful about the effectiveness and return on investment in e-learning. Two case studies will be presented here in an attempt to get a realistic

understanding of the corporate e-learning in Singapore. These are the NTUC Income and the Civil Service College of Singapore.

NTUC Income

The NTUC Income is a cooperative insurance company. It is one of the big four insurance companies in Singapore. It employs about 800 office staff and has over 4,500 insurance advisors. In terms of human resource development, it has stipulated 40 hours of training every year for every staff. Its annual training budget is about 4% of the company's payroll.

NTUC Income started exploring the use of e-learning since 1995. It started by putting up simple documents on instructions for learning (e.g. Clerical to technical, covering duties) on its own Intranet network. The actual e-

learning initiative only started in Oct 2001. To implement e-learning, it assigned one full-time staff to coordinate all the work to be done. Subsequently, they were able to get 500 of their staff, which is about 62.5% of their staff strength trained by e-learning method. In addition, their management stipulated that 10 hours of staff training are to be carried out in the e-learning mode. As a result, they achieved a total of 3,500 hours of e-learning training by 30 June 2002.

For their e-learning content, NTUC Income deployed several types of e-learning content. Some of the contents are off-the-shelf packages (e.g. from SkillSoft, NETg). E-learning is also used to provide procedures to guide staff in their jobs. In order to implement e-learning properly, NTUC Income has set up facilities for their staff members to participate in e-learning. For example, every centre has at least 1 PC dedicated for e-learning. The management allows staff to e-learn in office during office hours and with the permission of the supervisor. NTUC Income encourages e-learning at home.

In terms of the future directions in e-learning, NTUC Income hopes to use gaming for learning purpose. It also wishes to introduce virtual classrooms using synchronised communication means. Another area that they want to develop is in their in-house course development capability. Rather than depending on vendors to supply all their e-learning courses, NTUC Income hopes to develop their own unique e-learning courses. In time to come, they hope to offer selective e-learning courses to their company's policy holders who now exceed 1 million in numbers. They also hope that they will eventually use an LCMS – Learning and Content Management System.

Civil Service College

The Civil Service College is the training institute of Singapore's public servants. There are about 120,000 personnel in the civil servants in Singapore. As a policy, the civil service has stipulated that every civil service staff should attain about 100 hours of training every year.
In an attempt to catch the e-learning wave, the Civil Service College launched the Open Academy (*http://www.ipam.gov.sg*) in July 2001. IPAM stands for Institute of Public Administration and Management. It has staff strength of 6 for the e-learning unit. Besides providing e-learning to the civil service, it also

provides e-learning to other ministries and statutory boards.

Initially, when it was set up it offered about 220 off-the-shelf e-learning courses. These e-learning courses range from 4 to 13 hours in course learning duration. IPAM does not develop its own customised courses. Instead, it relies on vendors (e.g. SkillSoft, NETg) to supply the ready-made course packages.

The early adopters of e-learning courses are the Attorney General Department and the Ministry of Education. Most of the e-learning courses are delivered asynchronously. However, there are some unique courses, which need to be conducted on a synchronous manner. In terms of the implementation, the e-learning unit in IPAM carries out periodic meetings with government ministries and other statutory boards in order to monitor the e-learning adoption.

ELEAP

In an attempt to encourage the wider use of e-learning in the small and medium enterprises in Singapore, the Singapore Government launched the ELEAP (ELearning Early Adopters Programme) in June 2002. This was a pilot project and monetary grants of up to S$100,000 were awarded to companies, which qualified. The pilot project lasted until mid 2003.

The objectives of ELEAP were threefold. Firstly, it was intended to facilitate the development of the e-learning infrastructure. Secondly, ELEAP hoped to encourage companies to embrace e-learning for continual and effective employee training. Thirdly, it hoped to develop the e-learning industry.

One of the qualifying criteria for the participating companies was that the company must commit to train at least 30% or 150 employees whichever is lower for a minimum of 20 e-learning hours per employee for a period of 3 years.

Eventually, about 15 companies participated in this Pilot Project. Participating companies come from a wide spectrum of industries, e.g. Financial Planners, Disk drive manufacturers, Call Centre operations, training institutes, bank and photocopier manufacturer. The ELEAP is an example of Singapore Government's initiative to jumpstart the adoption of e-learning in the corporate world.

Singapore, still has some limitations. Firstly, because of the small population, it is difficult to generate much e-learning business. The e-learning business in Singapore is coming to a saturation point. As such, many local e-learning companies are now going overseas to get the e-learning business. The manpower costs are high.

However, e-learning in Singapore has come to a fairly mature level. The schools, polytechnics and universities are using e-learning rather widely. The country do even have schools which have tried delivering e-learning to their students and not requiring their students to come to school for one week. It has innovative practices in e-learning like those involving the use of Tablet PCs in scientific field recordings. The government even provided some funding for a Specialist Diploma in e-Learning Instructional Design course. Many of the corporate bodies are already using some e-learning for staff training. ■

Lim Kin Chew is the Director of Learning and Knowledge Management in Dnium Pte. Ltd., an e-learning company in Singapore. He has previously worked as a secondary teacher, a computer systems analyst, a lecturer in information and technology in two polytechnics and manager of the former Centre for IT in Education and Learning in Temasek Polytechnic. He is the Chairman of Singapore's Learning Standards Technical Committee which helps to set up e-learning standards in Singapore.

REALISING INDIA'S POTENTIAL

Building a digitally inclusive society.

The power of computing enables people to pursue their passions and achieve their ambitions, no matter who they are. At Microsoft, we share this passion for creating opportunities, and it is our mission to enable people and businesses throughout the world to realise their full potential. In India, we have attempted to make this vision real through initiatives that seek to drive the percolation of IT across different strata's of society.

Project Shiksha

Fourteen year old Santosh Cherapalli, begins his day at the wholesale market in Hyderabad, while his peers are deep asleep. He works four hours everyday before school to help supplement the family income. He looks forward to attending classes at the local government school and has worked hard to become the top student in his class. Not only that, with the right training at school he has sharpened his computer skills. Santosh sees computers as an ally in learning more, thereby setting the stage for a better life ahead.

There are many like Santosh and his parents who view education as a critical enabler in improving the quality of life.

It is with this insight that Microsoft launched Project Shiksha. Launched with the clear aim of bringing IT to government schools existing in the underserved communities, it empowers teachers in the use of IT as an effective teaching aid via effective teacher training programmes This not only improves the teachers' presentation of course curriculum but also strengthens the students learning skills.

Microsoft has signed MOUs with 9 state governments for setting up IT Academies in five years: Uttaranchal, Andhra Pradesh, West Bengal, Karnataka, Rajasthan, Maharashtra, Punjab, Madhya Pradesh and Tamil Nadu.

Currently 8 IT Academies are functional in five states, while more are in the process of being setup in partnership with the state governments. With the state governments provide basic building infrastructure, Microsoft partners by creating state of the art IT Academy which includes a classroom, library, staff room, server room, IT equipment, teaching curriculum as well as the training staff. Critical to this process is the fact that curriculum is administered in local language, thus enabling the participant school teachers to bring alive the subjects and the interest of their class.

Students do not need to learn by rote, and learning is internalised better. In the words of AN Ramachandran, Dy. Director, NVS Bhopal, "The child need not cram the rules or memorise the demonstration. Once it is picturised it is in his memory. Even if the children try they cannot forget it."

There has been a lot of positive feedback from those who have benefited from the programme, higher class attendance and better learning by students being just two of the positive fall outs. "Earlier students used to absent themselves from school. Now they definitely come when it's their turn to use the computer", says Ahtisham Mirza, Teacher, GIC Nathuwawala.

Some other government bodies that Microsoft is coordinating with, through its Project Shiksha programme, in taking education to the underprivileged:

• Municipal Corporation of Delhi: The aim is to reach out to 12,000 students over the 5 year period

• Navodaya Vidyalaya Samiti (NVS) schools: The NVS schools come directly under the administration of the Ministry of HRD. Today Project Shiksha benefits the NVS teachers in 9 states

• Teachers training is also being imparted at the Jawahar Navodaya Vidya Samiti (JNV) Panchawati, Andaman and Minicoy Islands, Lakshwadeep

Through Project Shiksha, Microsoft seeks to reach 200,000 teachers and 10,000,000 students in the next five years. So far, Microsoft has trained over 80,866 teachers and has thereby touched the lives of 4 million students till now.

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People-Process-Product Continuum

Instructional Design Making Effective E-learning

Broadly the e-learning development process can be divided into two major phases: (a) Development, and (b) delivery and maintenance. Suitable content is developed in the first phase and the same is delivered using an appropriate medium in the second phase. A typical e-learning process has planning, design, development, evaluation, delivery and maintenance stages.

The Iterative Process of E-Learning Based on the size and scope of the project, the number of individuals involved in various stages of an e-learning project may vary. Some roles and responsibilities may overlap, as many e-learning tasks are interrelated and interdependent. A large-sized e-learning project requires the involvement of various individuals. In a small or medium-sized e-learning project some individuals will be able to perform multiple roles. When an e-learning course is completely designed, developed, taught and managed by a single individual, the same individual has performed the role of content expert, instructional designer, programmer, graphic artist, project manager, etc. This article has

tried to identify various roles and responsibilities involved in the e-learning development process. Sometimes there is a need for an instructional designer to explain the learning part of the project. The instructional designer is generally involved during the entire content development process, and once the module is created, it is the responsibility of technical support to ensure delivery of the module and also take care of a few of the quality issues.

Stages of the e-learning process

A typical e-learning content development cycle contains the following stages: Planning, Design, Production, Evaluation, Delivery and maintenance, Instruction, and Marketing

Planning stage

During this stage a team consisting of project manager, instructional designer and the director work together and develop a project plan after a thorough analysis of the audience profile and user requirements. They analyse various

aspects of *people*, *process* and *products* involved in the e-learning development initiative. This plan must be pedagogically and financially sound and should guide the entire e-learning team (production, evaluation, delivery, maintenance, instructional and support services) to engage in their respectively assigned activities.

The planning team must consider the various learning models and strategies before working out the entire plan. It is just not enough to make the plans pedagogically sound; they must be financially sound too. The team needs to work out the time-frame for every activity of the project, with possible breakdown time and buffer time to take care of exigencies. The end product of the e-learning planning process is a sound *e-learning project plan,* which provides guidance during various stages of the e-learning process.

Design stage

The output from the planning stage, which is a plan document, is available at this stage for reference. People involved in this stage are instructional and graphics designers, interface designers, technology experts, and evaluation, quality and R&D personnel. The R&D person is responsible for reviewing course content for pedagogical soundness and selection of the appropriate delivery medium. He must be aware of limitations and capabilities of every medium and also the latest development in the area.

Care must be taken to ensure the content is created using Aviation Industry Computer-based Training Committee (AICC or Sharable Content Object Reference Model (SCORM)

The entire process of development of e-learning content brings together a group of people with different competencies. The process can be considered as The people–process–product continuum or P3 model. For example, people involved in the e-learning development process can be Instructional Designers, graphics designers, project managers and quality assurance managers. The product can be a well-designed e-learning module and the process can be any standard process like Dick and Carey Model. The P3 model is a holistic approach to course development and helps in not only creating very high-quality e-learning content, but also in delivery and maintenance of the course. This article is an attempt at envisaging the entire development process in a modular approach.

Need is for a learner-focussed learning material

What is the importance of Instructional Design for designing e-learning material?

Designing meaningful e-learning requires thoughtful analysis and investigation of how to use the learning technologies' potential in concert with instructional design principles and issues critical to various dimensions of e-learning environment. The field of Instructional Design (ID) benefits from both learning theories and instructional design theories. Learning theories are descriptive-describe how learning occurs. Instructional design theories are prescriptive in nature-concern with what methods of instruction should be used. Since 1997, I researched what it takes to create open and distributed e-learning and found that ID alone cannot do the job, it basically concerns with only two dimensions (i.e., pedagogy and evaluation) out of the eight dimensions of issues:

I found that numerous factors help to create a meaningful learning environment, and many of these factors are systemically interrelated and interdependent. A systemic understanding of these factors can help e-learning instructional designers create meaningful e-learning environments. I clustered these factors into eight *dimensions* to develop A Framework for E-Learning: institutional, management, technological, pedagogical, ethical, interface design, resource support, and evaluation (More information about the Framework is available at *http://BadrulKhan.com/framework/*). Therefore it is important to create *learner-focused* learning material with sound instruction design principles, techniques, and strategies.

What is the theoretical underpinning of technical Instructional Design process?

Learner should always be at the centre of learning focus. Instructional Designers need to improve instruction to promote learning. There are different approaches in ID. How do you design is based on your pedagogical philosophy. One can either take instructionist /behaviorist or constructivist approach to achieve the goal. In the constructivist approach, the learner sits in the driver's sit, where as in the behaviorist approach the learners are guided by the instruction or the instructor. Based on domain of knowledge, one could integrate both approaches to promote learning. In designing e-learning materials, I used both approaches.

What are the common gaps in understanding the ID process?

We have to explain ID to people as they best understand with their own professional context. For teachers it means the lesson plan design. For trainers, it means training design.

Instructional Designers have to clearly communicate how they can use ID to create *learner-centered, efficient, engaging, interactive and facilitated learning environments*. I believe, by using the eight dimensions of the E-Learning Framework, E-Learning Instructional Designers can communicate effectively with their clients about what they can do.

How to create ID for meaningful e-learning?

By the way, I really enjoyed delivering the key note at the National Instructional Design Workshop in Bengaluru. I sensed from the participants - there is a greater need for professional development training in e-learning instructional design. It is with great pleasure I would like to inform that I took the leadership role in developing several E-Learning Instructional Design Courses (blended-learning delivery format) to be offered through The Asian Virtual University (*http://AsianVU.com*). In this regard, I would like to partner with local vendors who can provide local instructional facility and manage local resident faculty members for instructor-led classrooms. I am hopeful that we will bring the best e-learning ID training to India via AsianVU.

What advice would you give to the ID or content producers?

ID deals with mostly pedagogical and evaluation dimensions. But still we have six other dimensions to think about. Each e-learning project is unique. I encourage one to identify as many issues as possible for their own e-learning project by using the framework. One way to identify critical issues is by putting each stakeholder group at the centre of the framework and raising issues along the eight dimensions of the e-learning environment.

compliant if needed. Instructional Designers play an important role, but their role is usually overlooked. The instructional designer designs the complete environment in which learning can take place. S/he conceptualises the e-learning strategy and methodologies based on the background of the audience. The design team must also communicate with developers about the action scripts. The output product at this stage is the storyboard.

Production stage

At the production stage the production team creates the e-learning course from the storyboard put together at the design stage. The production team creates all the required details independently and integrates them in the course module. It creates all the necessary links and makes the navigation smooth. The production coordinator leads the e-learning production process. All members must put their modules in a central server so that security issues are also taken care of. All members must follow the same naming convention for each module. Every day team members can work on the module (s) and store it back on the server when they leave. This facilitates checking of the content independent of members. Once the course is created and quality check of the content is performed, it should be pilot tested. Once the project manager collects all the comments from the pilot test team members, he can discuss them with the instructional designer and necessary changes can be incorporated with the help of the development team. The product of the production process, then, is course material ready for pilot testing.

Evaluation stage

Evaluation is done at every stage of the entire life cycle, and feedback is incorporated in the product. Basically, there are two types of evaluations, formative and summative. Formative evaluation is conducted during the development stage and is iterative in nature. Summative evaluation is conducted at the end of the development when all the components are integrated into a full-fledged course.

All the assessments are checked with respect to the learning objects, for their relevance and appropriateness. The overall look and feel of the course is very important and clients are very particular about it. Finally, the learning expert has to satisfy that the learner will learn from the course. The course is also evaluated for conforming to AICC, SCORM or other standards.

Delivery and maintenance stage

After the content has been created, the focus shifts to delivery. The driving force behind e-learning is that the course content (or the module) must be available at any time from anywhere to the learner. The content material may include audio, graphics, simulations, assessments, videos, reading material and other features. The delivery and maintenance (D&M) team plays a pivotal part during this stage. The team has to first load the content either on the server or on the learning management system (LMS) and test every bit of it, including simulation and navigation. The team must also take into account the size of the module andspeed of access, etc. In most cases, an LMS may be used for delivery of the module. There is a need to check the SCORM, AICC and other standards once the course is loaded here. The e-learning module must be available to the learner any time. The learner must have the control to leave the course and come back to it as many times as she wants.

Overall, the D&M team is responsible for ongoing updating and monitoring of the e-learning environment, including security measures for access control and information confidentiality.

Instruction stage

The instruction team is the core of good e-learning content development cycle. At the course instruction stage, instructional and support services staff (ISS) are the people involved in delivering the instructional product.

E-Learning environment

Once the content is ready the course may be offered either through a portal or in standalone mode. The expectation of the learner is that they must be provided with a good learning environment and uninterrupted learning time. It is necessary to see to it that the correct courses are received by students who register for a particular course. The Internet and availability of good bandwidth gives organisations one more medium for delivery of learning content. This is attracting both academic and non-academic institutions to seriously consider e-learning.

The E-learning P3 model provides a comprehensive picture of the e-learning process and helps identify the roles and responsibilities for the design, development, evaluation, implementation and management of all e-learning and blended learning materials and systems. ■

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News

INDIA

5,000 e-learning kiosks to come up in villages

More than 5,000 kiosks to impart computer literacy will come up in villages across India by the end of 2007.

Shakeel Ahmad, minister of state for communications and information technology, said the project would cost about INR30 billion. These kiosks will be set up in local panchayats for training villagers on information communications technology. The trained villagers will help train others in their village.

Foundation of IIIT in Bhubaneswar by President of India

The President of India, APJ Abdul Kalam has laid the foundation stone of the 25-acre campus of International Institute of Information Technology (IIIT) at Bhubaneswar in Orissa.

The IIIT would come up as a world class institute. It would have a vision to contribute to the IT world by focusing on education and research, entrepreneurship and innovation. The Institute will be run as a registered not-for-profit society, funded jointly by the Government of Orissa and the IT industry.

IGNOU in Kochi proposes computer literacy programme

The regional centre of Indira Gandhi National Open University (IGNOU) in Kochi has proposed a State-level computer literacy programme in Kerala.

The programme is proposed for 50 senior secondary schools. In first phase, the project will be implemented in five districts and the schools identified for the project will act as admission-cum-information centres of the university. IGNOU has already started negotiations with the State Government of Kerala for providing MCA programme to high school teachers who are engaged as resource persons in IT@School project. The regional centre would set up placement centres, these will help the candidates to secure a job before passing out of the university.

FOGSI launches satellite based education programme medical colleges

The Federation of Obstetric and Gynaecological Societies of India has collaborated with the Indian Space Research Organisation for the satellite based education programme for medical students.

Indian Space Research Organisation has launched the satellite based education programme for medical students and doctors to update their latest information. FOGSI has launched satellite based education programme for doctors and medical students in over 100 municipal and government medical colleges of the country. Initially, Cosme Farma Laboratories Limited (CFLL) will install satellite dishes with technical support from ISRO. FOGSI doctors will develop the course content and distributed live through satellite to over 100 municipal and government

medical colleges of India. The satellite centres would be launched in medical colleges of Jaipur, Jammu, Gorakhpur, Patna, Guntur, Manipal, Vadodara and Goa.

Jharkhand government promotes computer education

The Jharkhand government has rolled out a computer education and computer-aided education programme to down link based education at the local level. The programme would be covered in 440 schools across the 22 district of the Jharkhand.

The Jharkhand Education Project Council (JEPC) and the Jharkhand Agency for Promotion of Information Technology (JAPIT) are jointly implementing the project as a part of e-Governance initiative. Core Projects and Technologies Ltd. (CPTL) will provide technology support to the project. The project would be implemented in the duration of five years on a build-own-operate-transfer (BOOT) basis. CPTL will develop the software of the project. The project would be based on Child Tracking System (CTS) modules, which will compile all information of children up to 14 years. Each school would be mapped on the Geographic Information System (GIS). Another project is also in the pipeline, which would be based on audio and video technologies. The government is planning to introduce video surveillance system. These projects would be backed by ISRO and IGNOU and would be integrated with the CTS module. CPTL will provide dotnet, Microsoft, Java eApps, Oracle based products. Even the company is also talking with other State Governments like Maharashtra, Orissa and Chhatisgrah for similar projects.

Manpower shortage a major challenge for ICT

The government is ready to initiate changes in the education system to boost the skills of students in the field of information and

communication technology (ICT) to overcome an expected shortage of around 500,000 skilled workers in the next few years, says Jainder Singh, secretary, department of information technology.

This he said after releasing a report titled, 'Making the Connection: India's digital future', which is based on a study conducted by Accenture in collaboration with the Confederation of Indian Industry (CII). The study, based on a survey of more than 200 top business executives across India highlights the fact that ICT is growing to play a major role in expansion of low-income markers in near future. About 88 percent of the survey respondents consider ICT to be a major driver of the current and future development. A similar number said that the increased usage of ICT would be a major determinant in overcoming disparities between the rich and poor.

## Indian SSA experiences shared at Cairo

The Minister of State for Human Resource Development D. Purandeswari has suggested in Education For All (EFA) meeting at Cairo that other countries can learn from the successful Indian experience in implementing schemes like Sarva Shiksha Abhiyaan, Mid Day Meal, Education Guarantee Scheme (EGS) centres for hard to reach target groups and the National Literacy Mission.

Purandeswari led a high level delegation in the 6th High Level Group Meeting on Education for All (EFA), in Cairo, Egypt, 14-16 November 2006. She also elaborated on the innovative resource mobilisation methods for achieving the goal of EFA while referring to the educational cess and the Prarambhik Siksha Kosh being adopted by the Government of India. The Minister also spoke about the special intervention regarding the Indian girls

in terms of free uniform, text books and also special schools, for girls belonging to disadvantaged sections of society.

CBSE to begin satellite education in India

Central Board of Secondary Education (CBSE) has decided to launch a satellite education programme in schools across the country from next year. An initiative of the vocational
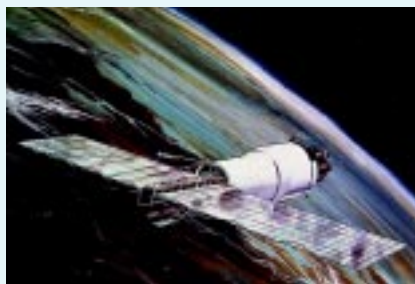
education department, CBSE, specific lessons would be transmitted through satellite from various regional offices of the board under the programme.

While NCERT is developing the curriculum, ISRO would help use modern space technology for promotion of education and training. To be propagated through Edusat, the satellite education wing run by ISRO, ministry of human resource development and Indira Gandhi National Open University, the programme would begin through teachers' training programmes and later reach classrooms.

The programme would be managed by six regional offices of CBSE located in Allahabad, Guwahati, Chennai, Chandigarh and Ajmer. Schools in Jharkhand would come under the Allahabad centre.

National testing standards to help quality of education

An Approach Paper of the Planning Commission says that a set of national testing standards and a chain of institutions that test and evaluate

children would help monitor and improve quality of learning.

Noting that just 28 per cent of schools had electricity in 2005 and only 40 per cent of primary school teachers were graduates and 30 per cent had not even completed higher secondary, it says, for a large proportion of children, school is an ill-lit classroom with more than one class being taught together by some who may not have completed her own schooling. Monitoring these aspects would need to correlate such facts with learning skills to identify where the real problems lie - pre-school, teachers, state governments, design of Sarva Shiksha Abhiyan or the assumed requirements for universal education, the report says.

On the Secondary Education front, the report says that the 11th Plan must aim to progressively raise the minimum level of education to high school or Class X level.

Observing that extension of secondary education in rural areas posed a special challenge since secondary schools cannot be set up in every village, the report said the present trend of combining upper primary with secondary school education may need to be strengthened.

CS course to go online from 2007

To make the Company Secretary (CS) course widely accessible it will be offered online from next year. Currently, the course is offered through classroom teaching and via post. Once the course is web-based, students can access the course at their desktops at their own convenience, according to the sources of Institute of Company Secretaries of India (ICSI). The institute has started providing the study material on CD. Plans are to start the programme by early next year. In the first phase, the institute will offer the foundation course. ■

M-Learn
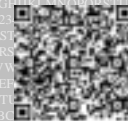
M-Update

Intuition launches m-learning course for banks

Intuition, the tech-enabled learning expert has announced the installment of the world's first mobile e-Learning course for smartphones and PDAs.

The course has been developed for financial services institutions, which will allow banks to track and automatically record users' progress. Financial services institutions are working with Intuition to launch training programme through BlackBerry phone for business need of remote access for learning through converged devices.

M-Project

mGBL - mobile Game-Based Learning

mGBL - mobile Game Based Learning is a research project with the aim of improving the effectiveness and efficiency of learning and guidance in the target group of young people through the development of innovative learning and guidance models based on mobile games.

The project, which began on 1 October 2005, is a STREP (Specific Targeted Research Project), funded for three years by European Community through the 6th Framework Programme, addressing the Strategic Objective of "Strengthening the Integration of the ICT Research Effort in an Enlarged Europe".

The project idea is based on the fact that mobile devices are currently increasingly widespread, and mobile phones in particular represent what young adults, with different levels of education and culture, have in common. Moreover, several research projects have shown the potential of game-based learning, and the project seeks to further exploit that potential by means of the pervasiveness of mobile technologies, by developing a new paradigm of m-learning usage and interaction with regard to the classic e-learning models.

The project aims to develop a platform that can be used to efficiently design and develop games for m-learning and m-guidance, seeking to support decision-making in critical situations and user choice in transition moments. Moreover, based on that platform, two game prototypes will also be developed during the project, and their contents will be based on e-health, e-commerce and e-guidance.

The project is based on a bottom-up approach, which means that end users of the mobile games and experts have been directly involved from the very beginning through specific interviews and focus groups carried out in the three fields of analysis: e-guidance, e-health and e-commerce.

M-Research

Mobile subscribers to reach 2.6bn this year

The number of mobile phone subscribers worldwide will rise to 2.6 billion this year and 4 billion by 2010, thanks to the development of ultra-low-cost handsets, market researcher iSuppli says.

New subscribers in developing nations such as India and China are behind the rapid increase in mobile phone users, the researcher said, while the mobile industry has rallied to the cause with ultra-low-cost handsets.

Africa and the Middle East are also playing a key role in driving new subscriber growth. The ultra-low-cost mobile phone initiative started early last year as a way to connect people to existing mobile networks. The GSM Association (GSMA) challenged handset makers to design a phone that would cost under USD30.

iSuppli believes India will drive growth for ultra-low-cost handsets next year. The nation will be home to 405 million mobile phone subscribers by 2010, up from 140 million by the end of this year, the market researcher says. The Telecom Regulatory Authority of India reports that as of the end of September, there were 129.5 million mobile phone users in the country, a huge increase from 75.9 million at the end of last year. In China, the figure climbed to 443.2 million at the end of September, up from 393 million at the end of last year, according to the Ministry of Information Industry, that country's telecom industry regulator.

Perspective

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Evolving school education systems
Towards an ICT-Literate Bangladesh

Current status of IT education in Bangladesh

Formal education in computers was first started in 1984 with the foundation of Computer Science and Engineering Department in Bangladesh University of Engineering and Technology. ICT education thereafter gradually extended to the bachelor's degree, higher secondary and secondary school levels. In Bangladesh, there are about 83,796 primary level institutions, 5,694 and 15,748 junior and secondary level institutions respectively, 2,339 higher secondary and degree colleges and more than 1,000 ICT training centers.

At this time Bangladesh has more than 10 public and 54 private universities, 4 BITs and some (almost 50) national university-affiliated post-graduate institutes and colleges, which are offering courses related to computer science and information technology. Some other institutions have also initiated research programmes in IT-related fields. These include machine learning, pattern recognition, speech recognition, automatic translation, computational algorithm, VLSI and 3-D vision. Consi-derable research work has been done in the use of Bengali in computers.

The government formulated a National Education policy in the cabinet, which was endorsed by Parliament. In this Policy, introduction of ICT education at the primary and junior secondary level has not been included in the implementation period of 2010. A majority of schools in the country cannot afford to buy computers for their students. Though a small number of city-based schools

150 million people, literacy rate of 62.5 percent, and the challenge is how to become a learning society! ICT revolution imposes particular challenges on education systems in Bangladesh. These challenges reduce to three broad areas. The first has to do with participation in the information society, the second considers how ICT impacts on access, cost effectiveness and quality of education, while the third is to do with the way that ICT changes the education process. However, ICT is contributing to ever-increasing inequalities in Bangladesh through the so-called "digital divide" that splits the Bangladesh between those who are "ICT-literate" and the majority who are not. This article suggests a way of increasing ICT literate people. It also gives an outcome of a research on the means of providing ICT access to a large number of people at the grass root level in Bangladesh every year. The operational structures of the ICT education in school level are outlined.

Growth of Internet
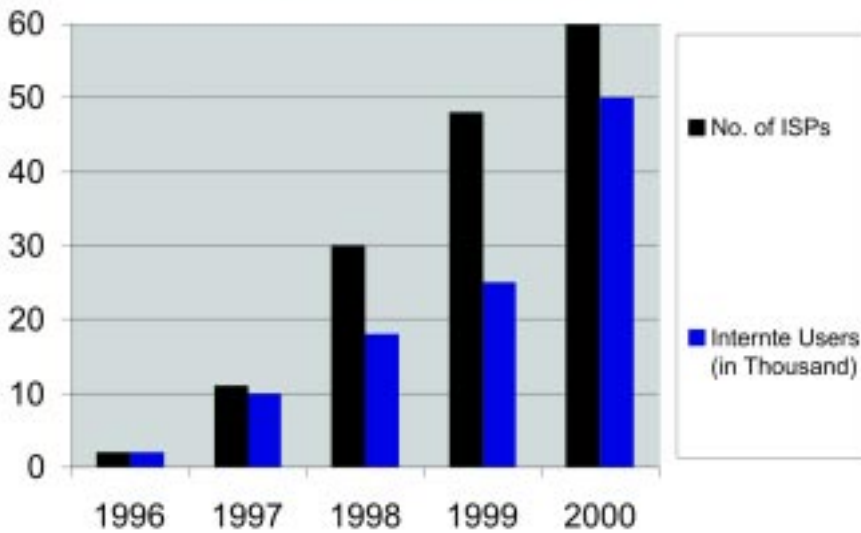
Growth of Internet from 1996 to 2000

have very limited computer laboratory facilities, yet they fail to make their students familiar with Internet, e-mail and related technology because of the lack of nationwide telecommunication infrastructure and Internet facilities. In addition, the teachers at the school levels lack the minimum level of training on IT. Secondary and higher secondary Education Board incorporated IT education in to curriculum.

Some IT Institutions (such as APTECH Ltd, BJIT, ECIT, DIIT, Genetic School of Computing, IBCS Primax, IBM ACE, IIT Bd Ltd, Infinity IT, NIIT) offer the IT diploma courses to all level students in some category of IT.

Government has reduced the usage charge of Internet services for both dial-up and leased line to encourage the people to use more Internet. Government is also encouraging private ISP's, universities and educational and research institutions, software exporters and corporate offices to lease Internet access at a very reasonable price. Bangladesh has signed the consortium of SEA-ME-WE-4 to lay the submarine cable in order to have connectivity with the Information Super Highway. The price

of ICT equipments has been falling sharply due to ICT-friendly taxation measures taken by the government with a view to play positive impact for enhancing ICT capabilities of the country. Bangladesh Telecom Regulatory Commission (BTRC) has been formed to take appropriate measure, which will help to create conducive atmosphere for ICT investment and contribute to narrow the digital divide. Government is committed to provide ICT education and training to its people and ensure affordable access to computers and the Internet facilities.

In order to facilitate the computer education in the Secondary and Higher Secondary level, the Government has undertaken a programme to provide computers and other accessories to about 15000 (Fifteen thousand) institutions of rural areas in its first phase. Other institutions will be brought under this programme in the subsequent phase.

Necessity of IT education in school level

Students should learn the basic concepts of IT, identify further study

paths based on individual ability, gain knowledge on related employment opportunities, discover the importance of IT in national development and become aware of the technologies' social, ethical and safety issues. Poverty will be reduced through a "social venture capital fund" for social and rural development. The school level students make a large part of the country's total population. Students from the local communities who generally learn computer skills rapidly could be trained to serve as information intermediaries for the older generation.

The drop out rate of our country is very high at the school level which is understood from the following table:

Social status	male	female
Gross enrollment ratio at primary level	83%	71%
Gross enrollment ratio at secondary level	25%	12%
Gross enrollment ratio at primary level	5.9%	1.3%

If we fail to include the basic IT education in school level, we will miss to face the ICT challenge, which is playing worldwide. By using the Internet the students can be practiced the foreign language as a communicative vehicle. They will be getting a good use of multimedia. There will be spreading and exchanging knowledge and culture. With the introduction of BTTB's mobile telephone along with private operators, rural telecommunication infrastructure will also be developed and the rural people will be able to get the facilities of ICT. Government is playing very positive role to expand Internet services throughout the country. What we need now is a large workforce or human resource who are familiar with computers and aware of the necessity of IT in our life. The compulsory IT education in school can play the major role in taking ICTs to the doorsteps of the general community.

Suggested steps

Application of computers in industry, business, communication, and education and in every other sphere of life demands the extensive introduction of computer education at grass root level. The Integration of IT education or computer education with the formal curriculum in school education can play a major role in meeting this requirement.

The strategic plans or steps to be taken for extending IT education in school level may be as follows:

Curriculum development

Currently the students of primary, junior secondary and secondary schools can know a very little about computer through their existing syllabus. So a sustainable and enhanced IT literacy should be incorporated with our general education through designing a new curriculum for school level. Recently the government has formulated a national policy to introduce ICT education at the primary and junior secondary level, which should be included in the implementation period. Computer science was introduced as an optional subject for secondary level students from the beginning of 1994, and about 150 schools were permitted to start up the subject. Many more schools have shown interest, and the quantitative expansion of ICT education at the secondary level is phenomenal. The National Education Policy has recommended compulsory computer courses from the secondary level of education, which should be implemented as soon as possible.

Trainer development

A national college for IT education can be established for teachers training. Or the teacher training college should incorporate compulsory computer literacy in their curriculum that they currently

Infrastructure development

This can be done through-

- Allocating the limited resources in an equitable manner
- Setting up school computer clubs for school students
- Encourage developing web sites for schools and making interaction between schools
- Ensuring the best use of current infrastructure. To promote ICT in the country, all the districts and more than 164 Upazillas have been brought under digital telephone network. Government has taken a policy to digitalise all the Upzillas in phases and some important growth centers to expand its digital network. This network can be a great asset in implementation of ICT countrywide. **1800** KM long optic fibre network under Bangladesh Railway is being utilised by the private Cellular Phone Operator. Fibre optic links have already been established in most cities of the country (**50 out of 64 districts**) areas by Bangladesh Telegraph and Telephone Board (BTTB)
- The public mass media may be used to provide distance education related to IT
- Schools can buy at least one or two computers from their annual budget
- A fund may be established to support innovative approaches and creativities for school IT education
- Opportunities should be created for out of school population to utilise resource in school based IT resource center and promote community education
- Students from college and universities who are studying in IT related course can arrange workshops on different topics in schools during their vacation.

provide. Some IT education resource centres may be set up to facilitate teacher training. Innovative means of training like mobile laboratories may be provided.

Evaluation system

To get the best quality of proposed education system there should be an authorised evaluation team who will try to find the best way to make IT education easier and interesting to the children. They may incorporate some extra curricular activities related to ICT. A group of IT professional will work in this team.

Bangladesh seeks to build an ICT-driven nation comprised of a knowledge-based society. To meet this overall vision, the nation must develop a country-wide ICT infrastructure to give all Bangladeshis access to information. This will empower citizens, enhance democratic values and promote sustainable economic development. By the implementation of the above steps discussed, the school level students can understand the cultural similarities and differences from their point of view; they can interact to the other students from other schools. The parents and local communities who are not ICT literate can share the knowledge through their children's experience. Technological development will give the competencies as critical thinking, decision- making, handling of dynamic situations, working as a team member, communicating effectively to the children. ◼

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Sarvodaya   SENSICH   telecentre.org   USAID INDIA INDO - USAID FIRE (D) PROJECT   warisan global Cultivating Capabilities. Creating Tomorrow

e-ASiA2007

eASiA 2007 through its five seminal conferences, will focus on five emerging application domains of ICT for Development - eGovernment, ICT in Education, ICT and Rural Development, ICT enabled Health Services and Mobile Application and Services for Development

What?

- Meeting point to foster cooperation in ICT for Development in Asia
- Platform for consultative dialoguing, strategic planning and business partnering
- Comprehensive programme with keynotes from professionals, technical sessions and an exhibition
- Participation of high level speakers and experts on ICT from Asia and beyond
- Forum to address the issues of digital divide and explore opportunities for Digital Asia

Who?

- Ministry of Energy, Water and Communication, Government of Malaysia
- Malaysian Communications and Multimedia Commission, Malaysia
- Microsoft Corporation
- Swiss Agency for Development and Cooperation (SDC), Switzerland
- The Commission in Information and Communications Technology, Philippines
- The National Computer Center (NCC), Philippines
- Ministry of Information and Communication, Government of Korea
- The National University of Singapore (NUS), Singapore
- Universiti Teknologi Mara (UiTM), Malaysia
- International Development Research Centre (IDRC), Canada
- ... And many more

Why?

- Meet key decision makers, experts, leaders and stakeholders in ICT arena at one platform
- Meet professional service providers, IT vendors, Telecom vendors, Satellite providers, Consulting firms, Government agencies and National-International development organisations in the domain of ICT
- Opportunity for potential business partners from Asia and beyond to meet and exchange ideas and needs
- Opportunities for cooperation in the field of ICT for development, education, governance and health among Asian countries

The Venue

The Putrajaya International Convention Centre or better known as PICC among the Putrajaya residents, is located on top of Taman Puncak Selatan in Precinct 5.

PICC takes its shape from the eye of the *pending perak* (a silver Malay royal belt buckle) with the main halls set in the eye of the *pending perak*.

Putrajaya International Convention Centre
Dataran Gemilang, Precinct 5
Federal Government Administrative Centre
62000 Putrajaya, Malaysia
Tel: +6-03-8887 6000   Fax: +6-03-8887 6499
E-mail: *enquiry@pcc.gov.my*
Web: *www.pcc.gov.my*

Transportation and Accommodation

Transportation

By Road: Putrajaya is 25 kms from Kuala Lumpur and 15 minutes drive from KLIA and F1 circuit in Sepang. It is the most accessible city in Malaysia. You can reach Putrajaya using expressways, urban highways and rail.

Prepaid Taxi: Delegates may take prepaid taxis from Airport to Putrajaya and/or from Kuala Lumpur to Putrajaya. Putrajaya International Convention Centre is approximately 30 min from KLIA and approximately 40 minutes from Kuala Lumpur city.

Shuttle Service by organisers during the conference period: The organisers will provide a shuttle service for delegates from the Putrajaya Station to Conference Venue and Conference Hospitality Partner Hotels in Putrajaya (and back) on hourly basis.

By Train: A high-speed train service either from Kuala Lumpur International Airport or KL Central (city), Kuala Lumpur, is the fastest way to reach Putrajaya.

Accommodation

Organisers are pleased to announce Marriott Putrajaya as the Conference Partner Hotel for eASiA 2007. The hotel will offer the delegates room accommodation at a subsidised rate. Please visit the link *www.e-asia.org/2007/accommodation.asp* for more details and to book your room.

eASiA's Unique Value Proposition

- High level speakers and experts from Asia and beyond
- Right technology solutions and partners
- Opportunity to forge strategic partnerships with sellers and buyers
- Focussed session and target audience
- Face-to-face meeting with key customers and prospects
- Latest e-Solution services and initiatives from across Asia

e gov ASiA 2007

egov Asia 2007 will bring together some of the best minds from the highest echelons of government, industry, academia and civil society to discuss and deliberate on the key strategies for e-Government. The conference aims to create an invaluable Asian platform for consultative dialoguing, strategic planning, knowledge networking and business partnering in the field of e-Government.

Highlights:
- National e-Government strategies
- International and regional perspectives
- Policy reforms for ICT-enabled governments
- Models of e-Service delivery
- Emerging technology solutions

digital LEARNING ASiA 2007

Digital Learning Asia 2007 will bring some of the key drivers from the leading countries of technology-enabled education to deliberate on the pressing challenges of technology-enabled education from capacity building to reengineering pedagogy; change management to providing digital access.

Highlights
- National strategies on ICT in education
- Localisation, customisation and content development
- Educating the educators
- Re-engineering pedagogy
- e-Learning trend and practices
- Education technology trends in Asia

Telecentre Forum ASiA 2007

Asian Telecentre Forum 2007 aims to bring the Asian practitioners on a platform for learning and sharing the experiences. Experts will be engaged in close assessment of issues relating to project monitoring steered by external financial support, from international development agencies & governments in Asia.

Highlights
- Telecentre movement in Asia: Road ahead
- Partnerships for developing telecentre networks
- Financing mechanism and sustainability factors of rural telecentres: A reality check
- Service delivery and capacity building through telecentres

eHEALtH ASiA 2007

eHealth Asia 2007 aims to provide a platform to discuss the recent trends and emerging issues in the development of information & communications, science and technology and its integration in healthcare systems. Conference will provide a knowledge sharing platform for deliberating on the opportunities and possibilities of ICT use for better health care delivery.

Highlights
- e-Health in developing countries
- e-Health administration and management
- Rural telemedicine
- Emerging technologies in e-Health
- Challenges and opportunities for collaborative action in e-Health

mSERVE ASiA 2007

mServe Asia aims to discuss and show-case the different aspects of mobile services, technologies, implementation and implications, developments on the public administration and tie them to the existing and future m-Government, education, agriculture and other applications. The conference will provide a platform to promote networking and business opportunity development.

Highlights
- Enterprise mobile workforce management
- Mobile infrastructure and connectivity issues
- Next Generation 3G Network
- mLearning
- mServices
- Emerging applications

Key Speakers

- Walter Fust, Swiss Agency for Development and Cooperation (SDC)
- Richard Fuchs, International Development Research Centre (IDRC)
- R. Chandrashekar, Additional Secretary, Ministry of Information, Communication and Technology, Government of India
- Gerri Elliot, Corporate Vice President, Worldwide Public Sector, Microsoft

Get Visibility through our Four Niche Magazines

Host and Partner Organisations

Host Organisation

Ministry of Energy, Water and Communications, Malaysia The Ministry is the key policy formulator and service regulator in Energy, Water and Communications sectors in Malaysia. The Ministry's main thrust is to facilitate and regulate the growth of industries in these sectors to ensure the availability of high quality, efficient and safe services at a reasonable price to consumers throughout the country. *www.ktak.gov.my/*

The Malaysian Communications and Multimedia Commission is the regulator for the converging communications and multimedia industry. The role of the Malaysian Communications and Multimedia Commission is to implement and promote the Government's national policy objectives for the communications and multimedia sector. *www.cmc.gov.my*

International Government Partners

The Commission in Information and Communications Technology, Philippines, is the primary policy, planning, coordinating, implementing, regulating, and administrative entity of the executive branch of Government that promotes, develops, and regulates integrated and strategic ICT systems and reliable and cost-efficient communication facilities and services. *www.cict.gov.ph*

The National Computer Center (NCC), Philippines, fundamental functions were to provide information bases for integrated planning and implementation of development programs and operational activities in the government. *www.ncc.gov.ph*

Knowledge Partner

INTAN is a premier government institution of Malaysia providing world-class training and capacity building programmes for public sector organisations of the country. *www.intanbk.intan.my*

Supporting Partners

The Asia Foundation is a non-profit, non-governmental organization that supports programs in Asia that help improve governance and law, economic reform and development, women's empowerment, and international relations. *www.asiafoundation.org/*

Bellanet promotes and facilitates effective collaboration within the international community, especially through the use of ICTs. *www.bellanet.org*

The Commonwealth is an association of 53 independent states consulting and co-operating in the common interests of their peoples and in the promotion of international understanding and world peace. *www.thecommonwealth.org*

MobileMonday Malaysia is an open community of mobile professionals fostering cooperation and cross-border business development through virtual and live networking events that share ideas, best practices and trends from global markets. *http://www.mobilemonday.com.my/*

Swiss Agency for Development and Cooperation (SDC) is Switzerland's international cooperation agency within the Swiss Foreign Ministry. *www.sdc.admin.ch*

Southeast Asian Ministers of Education Organization (SEAMEO) was established on 30 November 1965 as a chartered international organization whose purpose is to promote cooperation in education, science and culture in the Southeast Asian region. *www.seameo.org*

Sarvodaya is dedicated to making a positive difference to the lives of rural Sri Lankans. *www.sarvodaya.org*

telecentre.org is both a social investment program that supports grassroots telecentre networks and a loose family of organizations with a common commitment to helping the telecentre movement thrive. *www.telecentre.org*

In India **USAID** is investing in economic growth, health, disaster management, environment and equity in India and in programs that focus on areas where help is needed most and people-level impact is high. *www.usaid.gov/in*

Warisan Global is a knowledge strategy company of Malaysia that is in the business of designing, developing and executing projects in the area of bridging the digital divide and grassroots entrepreneurhsip. *www.warisanglobal.com*

Institutional Partners

The National University of Singapore (NUS) is a multi-campus university of global standing, with distinctive strengths in education and research and an entrepreneurial dimension. *www.nus.edu.sg*

UiTM is Malaysia's premier institution of higher learning that has experienced a phenomenal growth since its inception in 1956. *www.uitm.edu.my*

Universiti Malaya is the first University of Malaysia, situated in the southwest of Kuala Lumpur - the capital city of Malaysia. *www.um.edu.my*

Conference Contacts

Exhibition: Himanshu Kalra (himanshu@e-asia.org)
Papers: Prachi Shirur (prachi@e-asia.org)
Registration: Mukesh Sharma (mukesh@e-asia.org)
General Information: Himanshu Kalra (himanshu@e-asia.org)

Top Reasons to Exhibit at eASiA 2007

Targeted audience

eASiA 2007 brings the right mix of quality delegates unparalleled at any other Asian forum. Unlike many other general IT fairs, it addresses the need to bring region's top public sector buyers at one place thus saving time and resources of focussed suppliers.

Valuable opportunity for face-to-face meetings

eASiA 2007 maximises the face-to-face time exhibitors spend with key customers and prospects through informal meetings, structured appointments and many networking lunch and dinner receptions.

Listen to key decision-makers' needs

eASiA 2007 gives you access to government IT decision-makers with the need, the authority and the budget to buy your products and services.

Focussed sessions for sponsors to position their solutions

Sponsors could benefit from the key sessions, panel discussions and workshops by participating in the discussions and presenting their solutions to the quality audience from around Asia-Pacific and beyond.

Proven organisers

eASiA 2007 is organised by Centre for Science, Development and Media Studies (CSDMS) and GIS Development, who have more than 10 years of experience in organizing niche events on ICT and GIS across continents along with several government partners.

Exhibitor's Response!

"I wish to congratulate you all on pulling off not one but three conferences, all at the same platform. That was truly audacious in scope."

Cisco

"I congratulate the CSDMS team for organising such a prestigious event. It was insightful for us at least."

Canon India

"I was deeply honoured to participate in the conference. The quality of discourse, talent and depth of knowledge by the speakers, and the extraordinary opportunity for learning made Vision 2010 a great success for TechSoup."

TechSoup

Exhibition Floor Plan

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

10

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43 42

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Entrance

Legend:
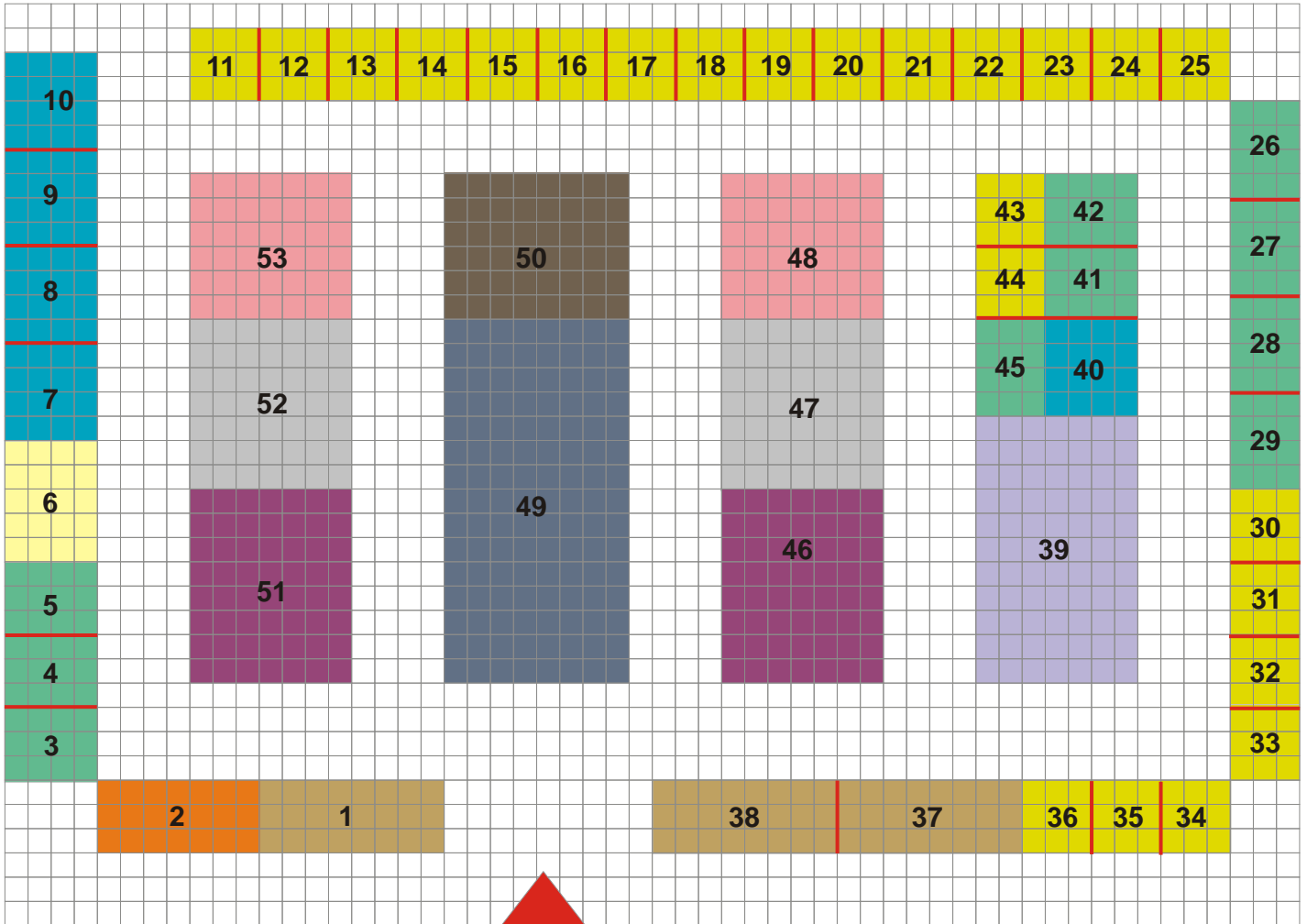
🟩 = 12 sq metre		🟦 = 16 sq metre	
🟪 = 77 sq metre		🟨 = 19 sq metre	
🟨 = 20 sq metre		🟧 = 21 sq metre	
🟫 = 24 sq metre		🟪 = 56 sq metre	
⬜ = 49 sq metre		🟥 = 42 sq metre	
🟫 = 48 sq metre		🔵 = 120 sq metre	

For any enquiry on exhibition contact:

Himanshu Kalra (himanshu@e-asia.org)

Tel: +60166852201

Personal details

First Name ....

Last Name ....

Designation/Profession ....

Organisation ....

Address...

City.. .Postal Code ....

State .... .Country ....

Tel.(O) ....(R)...

Mobile .... .Fax...

Website..

E-Mail ....

Delegate type:

Author ☐   Regular ☐   Exhibitor ☐   Sponsor ☐   Supporting Partner ☐

Sector:

Govt. ☐   NGO ☐   Private ☐   Academics/Institutions ☐

My primary interest area is:

egov Asia ☐   Digital Learning Asia ☐   Asian Telecentre Forum ☐   eHealth ☐   mServe ☐

I would like to receive weekly e-Newsletter on: egov ☐   Digital Learning ☐   i4d ☐

Payment mode: Demand Draft ☐   Cheque ☐   Wire Transfer ☐

Payment Details: Cheque/Demand Draft No. .... or Transaction ID .... Dated ....
Drawn on .... for amount RM/USD .... Payable in favour of 'CSDMS'.

Wire transfer detail: Beneficiary detail: CSDMS **Bank name and address:** Citibank Noida Branch, India, A-6 Sector - 4, Noida, UP, India, **Account :** 5-000890-288, **Swift code:** CITIINBXAXXX

Detach & mail to eAsia Secretariat in Malaysia or India

Delegate Registration Fees Details

Malaysia Delegates

Govt./NGO/Academia	888 RM
Private	1588 RM

Delegates from outside Malaysia

Govt./NGO/Academia	300 USD
Private	500 USD

Fees Entitlements

The Delegate Registration entitles the individual to participate in all technical sessions, workshops, keynotes and plenary sessions and social functions for all five/any egov Asia 2007, Digital Learning Asia 2007, Asian Telecentre Forum 2007, eHealth Asia 2007 and mServe Asia 2007 conferences. It also includes:

• Delegate Kit   • Tea/Coffee breaks on all three days of conference.   • Lunch for all three days

Cancellations and Substitutions

In case of any unforeseen or unprecedented occurrence beyond the hold of the conference secretariat, where the conference is called off, due to natural disasters, epidemics, man-made civil disturbances or other mishaps of large scale, there shall be no refund or reimbursement of any fees or commitments.

Cancellation and Substitution Policy

• In case a registered participant is unable to attend, s/he may send his substitute to attend the conference. S/he must inform the **Secretariat by 6th January 2007**.

• In case a registered participant is unable to attend and wants refund of registration fees, s/he may convey the same by **6th January 2007** and is liable to claim back 50% of the Registration Fee, subject to decision of the Secretariat. This does not hold for *force majeure* condition.

WAYS TO REGISTER

Online
www.e-asia.org

Email
registration@csdms.in

Fax
+60321447636 (Malaysia) +91 120 2500060 (India)

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Tel: +919312907675 (India)
Web: www.e-asia.org
Email: info@e-asia.org

PROJECTS

Malaysia beckons investment from India

Malaysia's Multimedia Development Corporation or MDeC will open its first representative office in Bangalore, India.

The Malaysian representative office in Bangalore will not only facilitate business and investment between India and Malaysia in the areas of information and communication technology (ICT), but will also be a resource point for Indian students interested in studying in Malaysia and vice-versa. The main industry areas in which MDeC will concentrate on in Bangalore and India are- creative multimedia e-learning content, outsourcing and shared services, hardware design, software development, support and services, and Internet-based businesses.

The opening of the Indian representative office in Bangalore is the first step in ushering Indian companies to be a part of Multimedia Super Corridor (MSC), Malaysia which is a Malaysian national initia- tive and acts as a strategic vehicle to achieve the country's goal to be a developed nation by the year 2020. MDeC will also look at expanding to other cities in India in days to come.

Intel to donate 10,000 PCs to India

Intel Corporation, the world's largest semiconductor company announced its plan to donate 10,000 full-function personal computers to state governments and teacher training

institutes in India under its 'Intel Teach' programme.

Under the programme, the microprocessor giant will train one million teachers on the application of technology to improve classroom learning. While announcing the company's plan to expand its education and digital healthcare programmes in India, Craig Barrett, chairman, Intel said, "By 2008, Intel plans to donate 10,000 full-function PCs to state governments and teacher training institutions, as well as train one million teachers on the applica- tion of technology to improve class- room learning." All donated PCs will be equipped with Internet connecti- vity, education content supported by the government, and software applications provided by Microsoft.

IBM technology may improve language skills

As Indian call centres have thrived in the past decade, helping U.S. companies cut costs and creating hundreds of thousands of jobs, they have faced a seemingly insurmoun- table problem: Most Indian employees speak heavily accented English. Now IBM's India Research Lab says it has a way to help operators fix the harsh consonants, local idioms and occasionally different grammar of

Indian English, often a source of frustration of those who call in search of tech support and other information.

IBM, which operates large call centres in India, has developed Web-based training that can help improve language skills.

Although the technology was developed for employees in India, it has broad applicability for others as well as in schools and businesses. The programme evaluates grammar, pronunciation, comprehension and other spoken-language skills, and provides detailed scores for each category. It uses specially adapted speech-recognition software to score the pronunciation of passages and the stressing of syllables for words.

The technology also consists of voice-enabled grammar evaluation tests, which identify areas for improvement by highlighting shortcomings and providing examples of correct pronunciation and grammar.

Infotech to have positive impact on growth

Around 88% of the Indian business leaders believe that increased use of information and communication technology (ICT) will be a major determinant in overcoming socio-economic disparities. This will advance growth in the next five years, according to a joint study by Accenture and Confederation of Indian Industry. The study is based on a wide ranging survey of over 200 Indian business leaders cross all major industries.

The study stated that the catalytic impact of ICT would have multiplier growth opportunities across all industries. According to the study, 94% of the businessmen believe that the use of ICT has been a major reason for India's recent economic growth, while 87% believe that socio-economic disparity is the major obstacle in the growth of Indian economy.

Indian business leaders believe that the next phase of ICT-led growth will come from three main sources—by improving access to ICT in low-income market, growth opportunities across all industries.

PRODUCTS

Intel chief's three course menu for digital-led inclusive growth

Intel's Chairman Craig Barrett has an agenda for achieving inclusive, quality growth in India: High-class educational training, idea generation for Research and Development and a conducive environment for setting up new companies. If the government provides these, information communications technologies (ICTs) can become a powerful multiplier for rapid inclusive growth.

Barrett said Intel, the world's largest manufacturer of computer chips, is chipping in to do its bit. "We will expand our Indian chapter of the Intel Learn Programme, a world-wide initiative to help classroom teachers learn how best to use technology to improve teaching and learning. We aim to train a million teachers by the end of 2008." Nearly 600,000 teachers have been trained under this programme so far.

Intel's World Ahead Programme drives digital inclusion in emerging countries, focusing on Accessibility, Connectivity, Content and Education.

LIQVID in Deloitte Fast 50 India 2006 list

LIQVID eLearning Services, an Indian e-learning content solutions company based in Noida near New Delhi, India has been ranked 8th among the 50 fastest growing companies in India at the 'Deloitte Technology Fast 50 India 2006' award.

LIQVID's growth of about 450 per cent over the last three years and its consistent business performance fetched the company this recognition. According to Vivek Agarwal, CEO, LIQVID, the strength comes from the company's deep knowledge and commitment to the area of e-learning and the process, the team and the track record that it has been able to build in a short period of time. At the same time, LIQVID has also been selected in the 'Deloitte Technology Fast 500 Asia Pacific programme'.

BSNL's Triple Play broadband by February

Bharat Sanchar Nigam Ltd (BSNL) soft-launched its Triple-Play broadband service of voice, data and video in Pune, India.

Once operational, customers can use the phone, surf the Internet and watch cable TV on the same telephone line with a broadband modem/ set top box. A subscriber will have to pay for a set-top box, installation and usage charges. The cable TV option will offer entertainment channels, interactive e-learning options and eventually e-governance and e-commerce services. SMS, TV to TV communication and close group broadcast, radio or video will also be made available later.

PARTNERSHIPS

HCL to tie up with Australian university

HCL Technologies Ltd.'s wholly-owned subsidiary HCL Australia Pty will enter into a partnership with La Trobe University, Australia, tomorrow to work together on issues of mutual interest.

HCL Technologies in a communique on Bombay Stock Exchange said that Australian industries engaged in Information and Communication Technology (ICT) and Business Systems (BS) would receive a boost through this.

Under this agreement, HCL and La Trobe University would conduct joint R&D seminars to provide opportunities for relevant experts in each organisation to address interested parties in government and the community on ICT related issues. The agreement, which was initiated and supported by the State Government of Victoria, would combine HCL's expertise with knowledge and research capabilities of the university.

NIIT inks with Egyptian Ministry of Communications & IT

NIIT, Asia's largest IT trainer has entered into an agreement with Information Technology Institute (ITI), Cairo, under the Ministry of Communications & Information Technology, Government of Egypt to build a pool of skilled professionals for the ICT industry in the country. The training major will offer its IT education programmes through the innovative ''NIIT Inside'' model integrated with the ITI curriculum.

The tie up is aimed at facilitating and developing a meaningful and mutually beneficial relationship to foster ICT capacity building by way of class-room and online learning through the ''NIIT Inside'' Model. This innovative business model from NIIT has its curriculum and training methodology embedded in programmes offered by a large number of Universities and Colleges in 30 countries, across the globe.

ITI has trained thousands of students for over a decade and has been instrumental in providing local, regional and international markets with trained professionals in various IT domains who make up the backbone of the IT workforce in Egypt. In addition, ITI through its GOV training programme has trained 50,000 government employees and supervised the training of over 4,00,000 in Governorate''s Training Centres.

Moving with a SMART Approach to Technology

Nancy Knowlton, President, Co-Chief Executive Officer, and Co-Founder of SMART Technologies Inc., Canada

Nancy Knowlton is responsible for the day-to-day direction of SMART. Recognised as one of Canada's top businesswomen, Nancy was the 1999 Canadian Woman Entrepreneur of the Year in the Export category, awarded by the Joseph L. Rotman School of Management at the University of Toronto and the Bank of Montreal. She and SMART co-founder David Martin were awarded the 1999 Prairies Region Technology Entrepreneur of the Year Award, sponsored by Ernst and Young, and a Manning Innovation Award in 2002.

In 2002–2003 Nancy was one of the nine members of the independent commission that reviewed Alberta's basic education system and produced Every Child Learns, Every Child Succeeds. Additionally, Nancy has spoken around the world on the topic of the 21st Century Classroom...Today, sharing her perspectives on the successful integration strategies for interactive whiteboards in everyday teaching and learning. In 2003 Nancy was awarded an honorary Doctor of Commerce degree from Saint Mary's University in recognition of her many business.

In 1986 Nancy Knowlton and David Martin, her husband, both sharing as Chief Executive Officer in SMART Technologies, had the idea for an interactive whiteboard. For them it was a whole system that would allow people to share information on one computer with many people. That simple idea has been at the core of SMART's work for the last twenty years — they help people meet, teach, train and present with their products. They offer up their vision of what technology can help alleviate problems and make working and learning time more productive and enjoyable. Nancy speaks out to the world more on such visionary and smarter approaches to education.

Why SMART?

We chose the name "SMART" way back before anyone was really using this word. We liked that it had a single syllable. We thought that people of many languages would be able to pronounce it and remember it. We also thought that they would understand the word. We liked that it conveyed a really new approach to technology. It also sounded good. Then we noticed that it contained a good number of the letters in my husband's last name (which is Martin) and we liked that a lot as well.

Why did SMART choose to work in education?

We have to be fair and say that education chose our product. We were showing our new products at several trade shows and it soon became apparent to us that the people who really got it, who could see the need for the product, were all from education. Several educators went on at some length to tell us how they could use our product, and it was that clarity of thinking that caused us to orient our plan to engage more systematically with educators at all levels. Of course, there was very little money in education at that time for technology, but that didn't discourage us. The people who really saw the benefit of our product somehow found the money and became rabid fans.

Will SMART always focus on the urban sector in education?

We don't think that we focus on the urban sector of education now. We want our products to be equally

relevant to children in all locations. My husband and I both come from modest backgrounds. In fact, I grew up on a farm. We believe in the equal opportunity that education can provide because of our personal experiences. Perhaps we have to do more for a rural education product, but we will keep at the issue until we get it right.

How did you succeed in establishing a place for SMART in this global niche market of e-Learning? What has been your forte in this sector?

We have established SMART one customer at a time. We have become insiders by listening and delivering products of value to our customers. We have focussed on our customers and their needs and desires and not a sense of corporate importance, as we have grown larger.

We have done many things right, because we are always trying to think about the customer. We do not follow fads and trends in business. Back in the dot.com era we didn't focus on "eyeballs" and "burn rates" even though everyone was saying that this was the new way of doing business. We thought for ourselves and decided to run a business that was solid and here for the long run. Jim Collins refers to this approach in his book "Built to Last" and we still believe that this is the right way to run a business.

How do you see the global market for e-learning? Which sector of the market (K-12, higher education, corporate learning, etc.) do you think will see the maximum growth in the next few years?

The global market for e-learning is exploding. People everywhere see the opportunity that technology tools can provide to really engage children in a way that pen and paper never could. Whether it is a teacher shortage in certain subjects (such as maths and science) or a classroom

Critical roadblock?

The hardest thing has been to get some traction in the market. Growing a company from zero revenue is challenging at the best of times. Doing it with little financial backing is almost suicidal. We got through the very hard early years by believing in what we were doing, always doing the right thing for our customers and staff, sticking to our word and our principles, and always innovating.

teacher looking for novel ways to explain everyday topics, technology is being used the world over to effect change.

I don't think that it is a case of saying that K-12 will grow faster than higher education. There are different ways of using technology in the various levels of education. What I have seen, and what frankly excites me the most, is the great opportunity that education presents to allow people who have been on the outside looking in as the world has moved into the 21st century to fully participate in the global economy. There are young children literally on every corner of the earth who have

the brainpower, and maybe more importantly, the desire to be something special. Adding these children to the world's workforce with all of the energy and creativity that encompasses is what will be the biggest boost to the world.

What are the potentials for SMART's products for developing countries market, especially in rural areas?

The best things that SMART products can do are really threefold:

• They can provide access to engaging learning experiences for children regardless of their location and the quality of the teachers in the local communities. With digital content accessible to all, there is no reason that these rural children cannot succeed to the same degree at their peers who live in urban areas.

• They can make children confident. Children can recognize that they can learn and that develops a sense of pride and self-worth. A lot can be accomplished when these two elements are in place.

• They can open the door to a world that many rural children have never imagined. These children can visit a zoo, see a man land on the moon and understand how waves work – and all this before lunch time. The world is open to them like it has never been before.

We think that our products should be in all classrooms around the world.

What has been SMART's experience in working with governments across the world? Do you believe a high-end product like smartboards can become a viable option for the rural areas in developing countries?

Governments around the world have been very open to working with SMART Technologies Inc. They know that we have a product to

offer, but they also can tell that we are not here to sell them on products that won't meet their needs.

We have sold substantial numbers of our products to:

- Mexico through the Enciclomedia project. This project is changing the educational experience in Mexican classrooms and engaging students in rich multi-media experiences. The teachers are feeling comfortable with the way in which technology is being brought into their classrooms.

- The UK through the BECTA project for interactive whiteboards. This GBP50 million initiative drove adoption of technology to a critical mass. The momentum has continued and there are exciting pockets of innovation beyond the interactive whiteboard as well.

It is clear that governments are looking at the opportunity that technology can provide. There are demands for lower process throughout the world. Volume drives a lot of efficiencies for with our hardware product, so we can meet the financial needs of our customers. Our customers also appreciate the superior quality of our product and know that this has to be factored in to total cost of ownership onsiderations.

As the Co-CEO, where do you see SMART five years from now?

We want to fulfill our dream which is to change the way that the world works and learns. Our products will be in classrooms literally around the world. We will have our SMART Board interactive whiteboards in many, many more classrooms. We may reach a billion dollars of annual revenue but we'll still be hard at work for our customers. ◼

Change Management is the Formula!

Karthik K S
Founder & CEO
24x7 Learning
Bangalore, India

Karthik KS is one of the prominent leaders in the Intellectual Capital Management Space in India. The Founder and CEO of 24x7 Learning- one among India's leading e-learning Implementation Companies, Karthik leads the company's efforts to capitalize on long-term growth opportunities and align its operations with key customer segments in the global market place. Karthik is strengthening the company's presence in key markets ranging from enterprises to vertical industries. He has been greatly successful in implementing company policies and business strategies positioning the company as a leading brand. Karthik has an in-depth knowledge of Intellectual Capital Management in Enterprises right from technology to users and also the commercial point of view. He has been at the helm of some of the best e-learning Corporate Implementations in India. So what does this active proponent of e-learning in India think on enterprise e-learning in the country?

'Two things I'd like to emphasise- one is- stay focussed. This is very easy in today's time in India. Success is all about saying 'NO'. Anything comes on your way is an opportunity though, but they are not the opportunities of success for you. Stay focussed to the thing only on which you are a specialist**.'**

Probably this focussed vision has helped this start-up e-learning company to see

its business very good today. Although there are still miles to go, last year it grew @100% and this year it is growing at 400%. 24x7 has bagged the 'Red Herring Asia' award recently as the most promising young company, recognised as one of the 100 private Asian firms driving the future of technology.

But then why India and why education gets this focus? 'Our market is India; we remain focussed to India. The reason is –some day or other, Indian market will open up and the 1.2 billion Indians will be my market base. Everyone can realise along with us that unskilled manpower is the single largest impediment to the businesses today. There are lots of education companies. But we need to 'train' 3 million people in technology. In the last 5 years, there is nothing clearly seen to train the work force.' Well, this is how Karthik has studied and evaluated the education market. For him, education is a funny (unique) market. There is no education in fact, which is the paradox in India. Certificates are only noticed in this country. But what he identified very true to the Indian context is corporate learning, which does need skill, enhancement of skill, and not certificates.

And now is the time to fix the important topics for such enterprise training and learning!

No! Because, 24x7 never sees it as a product. Rather it's a complete solution. The clients usually don't see it as a product. 'We go as giving a complete solution to our clients. And at the back end, we have three different vertical executions services; first, we have our own enterprise application, which is the product. Second, we have content services. And lastly, we are in consulting services, which is to help organise increased usage of this industry.'

Of course, the challenges are

manifold. Because, learning tapers down as one gets older. And interestingly, the average age of this enterprise e-learning is 40 plus. The real concern for him was companies like Hindalco, Birla, and similar ones. Will they do e-learning courses? 'To everyone's surprise, highest e-learning usage percentage is in Aditya Birla Group', Karthik says. The guys are information hungry! E-learning was not high. But then lots of people have done it. The situation is similar when Enterprise Resource Planning (ERP) is introduced in media. Crores of money spent, but they were not used, because of the change

How do you see e-learning market in India?

There is no documented figure. But you get the feel. Last year it was in the range of INR80-100 crore, that is based on some calculations that I have done. But this year I feel it should be in the range of INR 400-500 crore.

How do you calculate?

This calculation is based on our regular team research. We have offices in Bombay, Delhi, Calcutta, BBSR, Bangalore, Madras, Hyderabad, in almost all metro cities. We have the largest sales team in any e-learning company today, whose number is 16. We do have half-yearly and annual sales reviews, and have some analysis on market.

management problem. People were not ready; they were more comfortable on writing on paper and re-entering later. Similarly, in e-learning it took a little time. 'Till 2 years back, we scratched the surface. But since there is potential it dealt with directly connected to 1.2 billion Indians. Education is one thing we are all passionate about. And if we have done a quality job, the market is more open. And this has a cascading effect. If one accepts, then another accepts, then another accepts and the things keep going. That is why there is much fund here. There is actual growth.'

And today, the third part of the entire 'solution' – the consultation service, is what that builds a place for 24x7 in the market. Karthik says, he never got paid for that in last 5 years, although things have been changed now. No body pays. Not even an amount like INR5000. The company used to fly its people on charity. The positive result yielded by this was an ensuring renewed of license next year. 'So we give the complete solution, we did the consultancy free, which means client's usage goes up. Which means we'll have increased number of licenses. So that is how we do our business in this competition. Prospecting makes the first level of our job always.' Today, of course, this is not the case.

To strategise the e-learning services, this market leader feels that discipline is much required. Because, time is more important, and the company or the service has to run between. And the success mantra is the successful change management. E-learning is learning. And technology is the smallest problem in e-learning today. But then change management is a plus point. Today 24x7 doesn't bother about technology. It has worked on toughest of problems in this country in terms of technology. For this education service provider, the problem is- 'will ever e-learners do the course?'. And that is where 24x7 will be successful. ◼

Smart Schools as Corporate Responsibility

A Telco 'Broadbanding' Education in Philippines the Smart Way

In the Philippines, while lack of classrooms and textbooks are still problems, the use of Information and Communications Technology (ICT) in education has been widely recognised as a means to improve teaching. However, the high costs of PCs and putting up access facilities plus the necessary training supports are factors in holding back the growth of Internet usage in many schools all over the country. But in recent years, there have been a number of various initiatives from the government and the private sector to address these barriers.

Uptake for mobile services, specifically text messaging services, has been pervasive throughout the country. Mobile penetration has grown quickly and is now estimated to have reached 40% or 35 million subscribers by early 2006, from only 2.7 million mobile subscribers in 1999.

However, percentage of Internet users was still at 9.1 % of the population or about 7,820,000 in March 2005. In the education sector, one computer can be shared by 111 high school students – and most schools still do not have Internet connection.

Government efforts are underway to promote ICT usage, among them the distribution of computers to public high schools under the PCs for Public Schools (PCPS) programme. The private sector has also pitched in, with companies engaging in various ICT intended corporate social responsibility (CSR) projects, from computer donations to Internet connectivity.

Meanwhile, the past year has seen a sharp rise in broadband Internet usage and this has brought changes in the country, first in highly urbanised areas, and now even in some of the country's farthest provinces. High-speed access to information is increasingly becoming available to practically anyone, opening up door and windows to many of our remote regions.

'Broadbanding' the future

Smart Communications, Inc. (*www.smart.com.ph*) is the current market leader for wireless services with 22.9 million subscribers on its GSM network as of end-September 2006. A wholly owned subsidiary of the Philippines' leading telecommunications carrier, the Philippine Long Distance Telephone Company (PLDT), SMART has been introducing world-first wireless data services, including mobile commerce services such as Smart Money, Smart Load and Smart Padala. Smart also has 3G services, Smart 3G, and in mid-2005, it introduced its wireless broadband services called Smart Bro.

During the same period, the company set on its fledging flagship corporate social responsibility programme. The Smart Schools Programme promotes use of ICT in basic education through partnerships with public high schools, its officials, parents-teachers-community associations (PTCAs) and local government units. Specifically, it aims to provide public school teachers and students with broadband Internet connectivity, access to online content and teacher trainings.

By innovating on the traditional corporate donation model, Smart adopted a training-led strategy that leverages on the synergies of its existing programs and partners. At the same time, Smart has also been able to actively promote the use of broadband technologies, one of its emerging businesses.

ICT for teacher- A Smart Schools Programme officer introduces the World Wide Web to a teacher from Tawi-Tawi School of Arts and Trade, a public high school in Bonggao, Tawi-Tawi in the Autonomous Muslim Mindanao Region. Tawi-Tawi is the Philippines' southernmost province and it is composed of about a hundred islands. Prior to being a Smart Schools Programme partner, the school was not connected to the Internet.

The A.C.T. approach

The programme started out in December 2004 with the aim of connecting public high schools to the Internet. As a telco, Smart has been able to rapidly utilise its emerging wireless broadband business to provide connectivity to its public high school partners – even in areas without fixed line connections.

Smart has been able to make a felt impact given the limited initial target of public high school recipients of one-year broadband connection grants under the programme. Through the Smart Schools Programme, Smart has been advocating the use of ICT in education by pursuing a distinct strategy of promoting Access (broadband Internet connectivity), Content (support for online educational content), and Training (technology trainings for teachers).

Computer laboratories are either constructed or transformed into Smart teachers learning resource centers. These Technology and Livelihood Resource Centre (TLRCs) serve as training hubs and gateways that connect schools and their communities to the World Wide Web. Depending on the school's location, various connectivity solutions from the PLDT group are used – fixed wireless broadband Internet through Smart Bro, fixed broadband through PLDT myDSL and satellite Internet with Mabuhay VSAT. Each centre is equipped by Smart with free broadband Internet connection for one year.

Educators from partner schools have also been given yet another tool to ensure that they make the most out of the Internet as a learning resource – the Smart Schools Programme website (*www.smartschools.ph*).

Launched in March 2006, the site offers access to online content that teachers can use for research, in making class lessons and in exchanging best practices with colleagues. Among its sections is the "Smart Tools" that contains tips on using Internet technologies such as email, chat, search engines, as well as downloadable modules and listings of recommended educational sites. The website is envisioned to be a cornerstone for an online community of educators and learners who can help shape the future of education in the country.

More than just connectivity, Smart provides trainings by engaging its partners - the Philippine Business for Social Progress, Microsoft Philippines Partners in Learning, learn.ph Foundation and companies within the PLDT group.

Smart is placing a strong emphasis on teacher training in order to avoid the difficulties that previous computer literacy programmes geared for public schools have encountered in the past. It has adopted a training-led deployment strategy to ensure that teachers and schools are properly prepared to absorb the new technologies.

Public high school teachers are trained on basic Microsoft Office skills and basic laboratory troubleshooting. Advance trainings on Visual Basic.Net are conducted for trainers. Community stakeholders such as the PTCAs are involved and given sustainability workshops. Other ICT trainings include computer networking and basic website design.

Finding "smart" solutions through synergies

One concern is the limited training resources of the company. Smart is not an educational institution and it has to partner with other organizations. However, the option of outsourcing all the trainings to a third party and its equivalent logistical expenses would require a substantial portion of the Smart Schools Programme funds.

As a practical but innovative approach to this situation, Smart tapped its network of over 40 colleges and universities nationwide under Smart Wireless Engineering Education Programme (SWEEP) by conducting a training program to prepare them as mentors for the public school teachers under Smart Schools. SWEEP is Smart's industry-academe partnership

that aims to raise the standard of Electronics Engineering education in the Philippines, an advocacy that has a direct relation to Smart's manpower requirements and business.

Strategically located in all regions of the country, the SWEEP schools have thus effectively become a nationwide training network for Smart Schools. The SWEEP schools have become the "Big Brothers" of Smart Schools.

Through the Smart School's tie-up with Microsoft Philippines Partners in Learning, SWEEP partners involved in the trainings have received software grants. Top SWEEP trainers for the Smart Schools Programme are also recognised.

Recently, SWEEP partners were also trained in computer networking and they are now providing the networking requirements for the broadband Internet connectivity of Smart School partners. It has also provided members of the SWEEP faculty with additional skill sets.

Towards sustainability

With its training infrastructure in place, Smart begun to roll out its Smart Schools in earnest. By end-October 2006, Smart reached the year end target of 100 Smart Schools

"Through an ICT curriculum, the Internet will enhance the teaching-learning process," shared Sixto Daluyen, teacher-in-charge of the school. "This will also help the teachers in doing their research for the benefit of the students. With the new facility, our teachers and students will no longer be techno-phobic."

partners. More than the number of schools connected to the Internet is the impact of its trainings for teachers.

By involving the SWEEP partners through the training of over 500 faculty mentors, Smart was also able to train more than 4,800 public high school teachers in basic ICT technologies through simultaneous trainings. Recently, the programme has been focusing its efforts in developing the online content component of the programme through

One of the schools under the Smart Schools Programme is the Sagada National High School located Sagada, Mt. Province. Sagada is located approximately 275 km north of Manila and the municipality is in the heart of the mountains of Cordillera, a major mountain range in Northern Philippines. Before Smart Bro was introduced, the people in the area can only go online by going to another municipality, which is about two to three hours away. Now, the school enjoys broadband Internet connectivity through the Smart Bro connection sponsored by the Smart Schools Programme

the improvement of its programme website.

Plans are underway with content partners, as part of the programme's aim of making relevant local online content available to teachers. The Smart Schools programme also intends to launch a project that will provide incentives to partners who will make their own local online content available.

These projects have resulted into a more involved participation of partners in the fledging online community and a stronger commitment to sustain the programme beyond the initial one-year connectivity grant with some Smart Schools partners even utilising their computer laboratories as training centers and community e-centres.

The article is prepared and contributed by the Smart Schools Programme team, which is composed of community partnerships and corporate communications officers from the Public Affairs Group of Smart Communications, Inc. For questions regarding the programme, please email smartschools@ smart.com.ph. For more information, visit www.smartschools.ph

SPRINGDALES, Pusa Pioneering Change with Technology

Good teaching can be defined as that which supports effective learning. It must create opportunities for the development of both tacit and theoretical knowledge. Good teaching means analysing theories in ways that are meaningful, and providing the learner with the opportunity to relate these theories to practical experience. It involves providing students for implicit knowledge acquisition. So, can these principles be applied to teaching through Information and Communication Technology (ICT)? Yes, technology enhances learning by making it more exciting and eliminating repetitive tasks. In acknowledging different learning styles, the multimedia experience like sound, text, pictures, music and video that modern technology provides, is invaluable. And Springdales School in Pusa, New Delhi, India proves it all. Simmi Kher (simmikher@gmail.com), IT Coordinator, Springdales answers all the 'How's and 'What's.

Power School

The effective use of ICT is integral to the wider strategy of bringing about improvements to teaching and learning in the classroom. Why? Because technology is an important part of Springdales' everyday life, and children love to use it to play and learn. ICT in the classroom has been linked with positive improvements in attainment and motivation. The school Principal Ameeta Mulla Wattal's vision towards Information Technology resulted in Springdales School, Pusa, being honoured with the Intel Technology Award for the **'Best Integration of Computers in Curriculum -2003'**

Change in any context is difficult; to change one needs to be prepared to take risks, make mistakes and be committed to the purpose of the change. This school has always been a pioneer of any change, hence, the novel idea of starting a Computer Resource Centre, which was built with the vision of empowering the faculty with the knowledge of incorporating technology into their daily teaching and learning process.

Infrastructure

The school has two Computer Labs for the classes 2-8 and a Senior Computer Lab for the classes 9-12 and a Computer Resource Centre for the teachers. Apart from this computers are provided to each class supervisor for the teachers to use. The school staff rooms, all the science labs, the art rooms, the social work department, the maths lab, the library, the school office, junior school are all equipped with computers. The school has an infrastructure of 150 computers.

Preparation for the integration of technology

In order to prepare the school for the technology integration in to the school curriculum, the following steps were taken in the year 2000:

➤ The computer wing was renovated with many changes.
➤ The teachers were trained under INTEL Teach To The Future Programme.
➤ The Computer Resource Centre was designed.
➤ The Audio Visual Room was designed in such a manner, that the teachers making computerised presentations could take their classes in this room. The room has a white screen, a computer and LCD projector so that the children can see the presentation on a bigger screen.
➤ 100% of teachers are today computer literate and are using the technology effectively.

Actual implementation of technology aided learning

Initially to motivate teachers towards Technology aided teaching, multimedia-based, computer-aided teaching software was brought into the school and at the same time the

teachers were encouraged to make their own presentations too and a knowledge bank was created in the Computer Resource centre. Various Educational CDS catering to different subjects were also bought.

Over a period of time we realised that the presentations that were being made were mostly for the middle and senior school, where as the multimedia teaching is really enjoyed by the junior school students. On investigating on this issue, we found out the junior teachers were not getting enough time to work on the computer to make presentations though they were effectively using computers to make their worksheets, mark sheets and class lists. To solve this problem the school came out with a pilot project called Digitisation of Junior School Syllabus, where the senior school students were involved to make technology aided lessons for the junior school. The teachers designed their lessons on paper and the students transformed it into a multimedia presentation, using Flash, sound files, animated gifs and movies and the result was astonishing. The presentations made by the students are being used by the teachers and a data bank is being maintained in the Computer Resource Centre.

The Maths Lab is making an extensive use of computers to conduct their activities and a dry subject like mathematics is made interesting.

Simmi Kher, IT coordinator of Springdales School, Pusa Road, has an uncanny ability to see the big-picture, and such efforts brought the school a winning status with the INTEL School Award - 2003 for the "Best Integration of Computer Technology in Curriculum". She was instrumental in starting the computer festival 'CONNECT' in the school. She is associated with a number of student and teacher exchange programmes both at national and international level. She has just returned after attending the Mondialogo Symposium at Rome, a DaimlerChrysler and UNESCO initiative.

ICT for special need

Special needs children can shine using ICT, and their self-esteem and self-confidence soars, especially when they become 'the class expert'. We know if dyslexic learners are to make progress, they must have a multi-sensory approach where they can look, listen and touch. So what could be a better medium than a computer? We have been teaching Information Technology to the dyslexic children for the last 3 years and they do so well securing marks above 90% in their board exams in this particular subject.

Designing

The school makes abundant use of technology in designing. Newsletters, handouts, programme cover, Invitation cards, etc. are all designed in-house. Each art room is equipped with a multimedia computer, colour printer and scanner. Starting from the annual day invitation cards, the handout brochure, to the ballet, everything has computer graphics supporting it and the complete show is computerised with light and laser effects.

Computerised library

The school library has been computerised by a Library Management Software along with a barcode reader. This performs automated library tasks from catalogue maintenance to issue, re-issue and returns. Quick searches are possible by author, title, and subject. Two computers are kept in the library so that the students can surf the catalogue for the books they want and know the availability status of the books.

Administration with ICT

The school office is fully computerised using software packages for Accounts, Provident

Funds, Salary, School Fees, School Transport, and Income Tax.

Reaching out to the other world

Apart from imparting computer education to the students and teachers of our school, Springdales' continuous endeavour has been to impart all kinds of education to the less privileged too. The programmes undertaken in this line are:

1. **SWASHAKTI** – A Vocational Training Centre was launched in January 2005 to promote economic empowerment of underprivileged youth in the areas adjoining the school through computer application courses.

2. **Mobile Computer Education Programme**: The van with 16 computers reaches the nearby community.

3. **Twinning Programme:** Springdales School has adopted a school (A.D.S.B Vidyalaya, Jhandewala), to which the teachers go and teach.

5. **Dasghara and Todapur Computer Project:** Two computer centres have been set up at the Dasghara and Todapur Villages by Springdales School. As a part of this endeavour student from these villages come to work in the school computer labs too.

Learning Curves

Two wonder kids who build own computers

New Horizon, a Lagos based ICT training centre, discovered two junior secondary school students under the age of twelve who have the ability to assemble a computer in 15 minutes and have actually built their own computer with a trade mark DASH.
The kids, Davidson Oseremen and Shittu Rilwan are two of a kind who met at a private secondary school, Doregos Academy in Ipaja. The former hails from Edo state while the later is from Kwara state in the South-South and South West regions of Nigeria, respectively. DASH is actually formed from the first two letters of DAVIDSON and the first two letters from SHITTU.

ICT Empowerment Project organised by New Horizons at secondary schools in Nigeria which discovered the wonder kids is such that the students of participating schools are being trained in all areas of IT from Junior Secondary School to Senior Secondary School.

Wakrah school pilots e-learning class project

Around 188 students of Al Wakra Independent School for Girls in Qatar will soon begin studying through their Tablet PCs as ictQATAR's 'eSchoolbag' project took off. eSchoolbag, that proposes to ease the burden of the traditional schoolbags through students access to multi featured Tablet PCs, is presently being piloted at this school.

Launched as a collaboration between ictQATAR and Infocomm Development Authority of Singapore (IDA) last September, the project will allow students to carry their 'eSchoolbags' home. So far the Tablet PCs were being used only within the school's premises.

iCELL will be responsible for eSchoolbag rollout and training. Eight teachers have gone through iCELL's rigorous training scheme that equips them with the knowledge to employ tablet computers in class and to encourage inquiry based learning.

Courtesy: Guardian Unlimited (http://education.guardian.co.uk)

Video links learning

From a large TV at the back of a Norfolk classroom in southern England an extra pupil is joining in a lesson - from about 300 miles away in the Channel Islands (a group of British dependent islands). It is 15-year-old David Brehaut, who without the video the link to maths and ICT classes at Sheringham High School would not be able to gain any qualifications at the only school on his home island of Sark. His only other option is to move to the mainland away from his family.

He has been given a chance to study at a Norfolk school from his own because of recent government investment in ICT in Norfolk schools which means more and more can be done through computer networks, the Internet and video conferencing. And £15,000 given to Sheringham High School for the project with Sark's only school shows Norfolk County Council's commitment to new technology. The new technology will be of particular use for people in Norfolk because it will cut down the amount of traveling people will have to do.

Himachal Pradesh, once considered as a backward state in North India, has already achieved near universal enrolment up-to the elementary level in the State, which is the first and foremost goal of Sarv Shiksha Abhiyan and has been able to bring down the drop out rate below 1.5 percent. Various programmes under universalisation of education are being implemented to achieve the objective. An ambitious INR 5320 million Sarva Shiksha Abhiyan is being implemented in the Sate for improving the performance of school system and provide community owned quality elementary education in the mission mode.

Computer literacy programme has been started in 282 schools of the State. Not only the children are being given elementary knowledge of computers in the programme but the teaching of mainstream subject through computers has also been undertaken. The teachers are being provided training for the purpose. Science Labs are being set up at selected cluster levels.

Himachal is the only state in the country to spend INR 1.03 per capita on education, against Kerala's 68 paise and neighbouring Punjab's 58 paise. Significantly, its per capita expenditure on education is almost

Focus Need to Shift from Excess to Quality

Rakesh Kanwar
State Project Director
Sarva Shiksha Abhiyan
Himachal Pradesh, India

? What are the major interventions under the SSA project in the state so far?

Under SSA we have been working under the mission statement that all children should come to school; there should be no gender gap; children with special needs should be covered, and they are brought into mainstream of education as far as possible. We have achieved a mark for out of school children in the state at just 0.5% of the total children in this age group and the drop out rates are just 15 among both boys and girls at primary level and 2-3% at upper primary level. The only concern we have is that the learning level should be improved.

? What are the strategies you follow for teachers'- training?

First is, there is compulsory training for every teacher for a period of 10 days. Now the question is on the effectiveness of the training. For that we try getting the needs assessed by the teachers and through the teachers right from school level. After scientifically identifying their problems and issues that needs to be addressed through training and the competencies (that need to be developed), those are discussed at various levels in the state. By doing this we come to a position to form a view as to on which areas we should be focusing on. It's a continuous process, and always keeps on changing. Through that we develop various modules, which are shared by teachers, piloted, and also tested. There is always scope of change and improvement by this.

? Do you get any kind of support from Panchayati Raj Institutions in terms of their participation?

In Himachal, their participation in education is quite good. People are coming forward; they are concerned about the education of their children. That is why we have so little gap in gender, and invisible drop out rate. It is all because of peoples

participation. The local bodies have been involved in the implementation process. Public participation has been just great in some districts. People have even been contributing in terms of money, time, and their sources to boost education initiatives in the primary as well as upper primary level.

? What is the level of integration of information and communication technologies in school education under SSA?

It is an integral part of education in our state. We don't see it as a separate entity or intervention. Various interventions have been planned and implemented under ICT to have it integrated in mainstream education. We have computer education in 280 schools, out of nearly 4000 schools in the state. At the secondary level, we have computer education in all the schools. At primary level we do not have computers though, but we want to focus the upper primary level first. For that we are entering into a MoU with Azim Premji Foundation which is already been done. We are talking to Intel for teacher training programme and orientation. In addition, we are partnering to various government, semi-government, and private organisations to develop various tools, so that we will be in a position to take care of this area.

? What are the challenges you come across at all levels of planning and implementing the education programme?

Motivation and participation at community level is the biggest challenge.

Second, the focus now has to shift from excess enrollment retention to quality in learning levels. We in our state have already addressed the excess part, and enrollment part. We have primary schools within every 1-1.5 km radius. We have a sizeable number of children who are disabled and out of mainstream education

system. Though the number is not high, but as a percentage of population, Himachal has a higher disabled population than the national average. We have nearly 2200 children in the focus group (6-14 years).

The other challenge is with a very hard group of children like the migrant labour, very poor and marginalised or scattered in small habitations, who are not going to schools. Last year we had 4301 children who are out of school in the focus group. This year we have 5000 such children who migrate and so remain out of school. So we have a mobile school for them, which keeps on moving. We are also working out other strategies to handle this small but difficult group.

On Digital Learning magazine-

We have been getting this magazine regularly. This gives us updates on SSA, about school insides. They tell us what is happening inside and outside the country, the various ICT initiatives. We keep on reading those and discuss about what we can implement. In government sector, we have nearly 11,000 primary schools and 4000 upper primary schools. For us this is even quite a high number. Nearly 10 Lakh students are ruled in the schools. Anything to be ruled at the state level requires lot of fund. That is the main constraint. But still, the ray of hope comes from ideas like distance education, e-learning or e-education. These are the areas, which are quite important for us, and we are getting regular inputs on such things through this magazine.

twice the national average. The teacher-child ratio is also higher, about twice as high in HP compared to India as a whole. For the year 2006-07, the Government of India has earmarkedINR 91 crore as its share for Sarva Shiksha Abhiyan in Himachal Pradesh.

The State Government has introduced IT education in most of the senior secondary schools in the State. The subject of IT education is introduced as an additional optional subject to the students of class IX to Class XII of these schools from the academic year 2001-02. Reputed private training institutions impart the education. Hundreds of middle, high and senior secondary schools have already been computerised and computer aided learning is being provided besides imparting basic skills in operating computers. 50 multimedia centres are also being set up at central locations so as to give benefit to the schools in its catchment area.

The first phase of the computer literacy project in the state under SSA was launched in the remote government high school at Himri in Shimla district. The programme would cover 282 schools for providing free computer education to the students in collaboration with the National Institute of Information and Technology from 6th and 8th standards.

It seems government was keen to maintain high standards of education and computer literacy was a step in this direction. The computer education is provided free of cost to the students, especially in the remote and difficult areas where such facilities were not available. The state had a vast network of over 15,000 educational institutions in the government sector and had made a humble beginning with 331 at the time of formation of the state in 1948. Emphasis seems to be now on consolidation of these institutions, along with need-based opening of the educational institutions. ■

QUEST Kicks off First National Instructional Design Workshop

2-4 November 2006, Bangalore, India

One of the biggest challenges facing the Indian education system today is ensuring that the 5.5 million teachers in 1.2 million elementary schools have the support they need to improve the quality of classroom instruction. Technology-based tools which integrate interactive multimedia into the instructional process have the potential to do so. The use of these tools, such as computer software, video and radio programs to promote student learning, while limited, is growing. Many state governments, for example, are beginning to make large investments in technology hardware for schools. However, there is an overall lack of policy on the use of educational technology tools, and the quality of these tools varies widely. With this realization, The QUEST Alliance, hosted a three day National Instructional Design Workshop in Bangalore, India from November 2-4, 2006.

As QUEST's first official event, the workshop successfully brought together 120 leading education experts, content creators and state government officials to share lessons and explore ideas on how to enhance the quality of content development for educational technology tools in Indian government schools. The workshop was a collaborative effort of QUEST partners Azim Premji Foundation (APF), the International Youth Foundation and Education Development Center (EDC) India.

The aim of the Instructional Design workshop was two-fold: 1) to present a systematic methodology for the design and development of quality e-

Douglas Bell from EDC and Punam Medh from Idesignskills leading the important session on design & development at the ID workshop.

content, and 2) to develop a set of policy recommendations to help guide practitioners and policy makers in developing and investing in technology-based education tools.

The importance of developing educational technologies that encourage student-centered learning and help teachers facilitate interactive instruction was discussed in depth. Speakers deliberated openly with participants about the many challenges quality teaching is related to, including the prominence of multi-grade teaching, the low ratio of computers to students, and the need for teacher training in areas such as computer instruction. QUEST partners APF and EDC have responded to this reality by designing interactive software that allows multiple students to work together on single computers, with instruction facilitated by the teachers.

In the words of Punam Medh, instructional design expert and workshop speaker, "The need for instructional design training for pre-service and in-service teachers who are beginning to deal with technology in the classroom is acute for two reasons: First, teachers trained in instructional design methods will be empowered to make systematic daily lesson plans that include the use of technology resources. Second, moving ahead, instructional design can provide a framework for teachers to make informed decisions about the subject matter, resources and media that are required."

Noted e-content thought leader Badrul Khan with Tiffany Kozalka, Professor of Instructional Design in Syracuse University, USA at the ID workshop organised by QUEST Alliance

Some of the most active and engaging sessions at the workshop were those on Needs Assessment, Design & Development and Evaluation, reflecting a strong need for technical training in proven instructional design methodologies.

Another recurring theme of the workshop and a critical ingredient to the successful implementation of

educational technology is the need to engage relevant stakeholders in the instructional design decision-making process. Incorporating good instructional design methodologies into the development of technology tools cannot be done in isolation - input from all major stakeholders at the policy and practitioner level needs to be considered. During several policy sessions, government officials

worked with participants to identify key stakeholders, including the government, NGOS, researchers, content creators, administrators and teachers.

The QUEST Alliance views the 3-day workshop as a first step in stimulating a dialogue around instructional design for educational technology as a serious discipline in India. More work is needed, including further research and development in the field, the need for communication and sharing of lessons, and capacity building in the area of teacher training. As a follow up to the workshop, QUEST is drafting a policy framework, which can inform decision-makers at all levels of the education system, particularly state government officials. This framework is intended to serve as a guide for the development and implementation of educational technologies and is expected to be completed this December. To learn more about the Instructional Design workshop and to view workshop materials, go to *www.eeaonline.org/ questresources.asp.* ◼

Workshop Group

Jennifer Hills contributed this article. Hills supports the QUEST Alliance as Program Coordinator and attended the ID workshop in Bangalore. For more information on the workshop or to learn more about the QUEST Alliance, please contact her at j.hills@iyfnet.org or contact QUEST Director, Aakash Sethi, at a.sethi@iyfnet.org

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ASIA

Malaysia and India to initiate regional IPR institute

Malaysia and India will initiate the establishment of an India-Asean Institute for Intellectual Property Rights to build human resource capacities and training to serve the region.

The regional institute would also help protect IPR of products produced by both regions, said the Minister of Science, Innovation and Technology, Datuk Seri Dr Jamaludin Jarjis.

This was agreed to at the bilateral meeting between Malaysia and India on Science & Technology (S&T) Cooperation and now it is at the midst of discussions for the mechanism to set up the institute which will be located in Malaysia. Both countries have also agreed to pursue the idea of harmonising the regulatory framework for Biopharmaceutical sector in the East Asia region. In the field of research & development (R&D), India and Malaysia have agreed to undertake collaborative R&D on a sharing basis in three areas - Biotechnology, Information Technology and Space Technology.

More schools getting Smart with ICT

Seven years after the Education Ministry in Malaysia introduced the Smart School computer programme project at 88 schools, a total of 4,495 more are now equipped with computer labs, in line with the ministry's Making Schools Smart programme.

An evolution of the pilot smart school project, the Making Schools Smart programme is built on the various ICT initiatives from the smart school project to educational television broadcast service. Early this year, 10
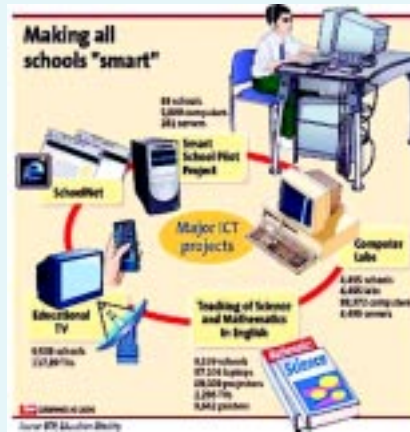
pilot schools in the Kalabakan area of Sabah were equipped with Internet-ready "Access Centres." to give students and teachers more ICT exposure. The success of this programme has led to the setting up of Access Centres in 74 other primary and secondary schools in the rural areas of Sabah and Johor. The Access Centres are similar to cybercafes but they focus on learning and enabling students to work on their assignments. This is different from the existing computer labs, which are used to conduct lessons for certain subjects and will be housed in a separate room.

Recently, Education Minister Datuk Seri Hishammuddin Tun Hussein announced that up to 1,500 schools will be equipped with the Access Centres receiving 15,000 personal computers, 1,500 printers as well as the necessary furniture. Next year, another 1,290 schools will receive 10 computers each.

Malaysian state to provide free surfing in all big towns

Free wireless broadband Internet service will be provided in all major towns in Perak by April next year, according to Malaysian Menteri Besar Datuk Seri Tajol Rosli Ghazali. He said the service would be available at all 15 district council areas in Perak. Ipoh is the first town in the country to offer such a facility which is available at the three rest and recreation areas along the North-South Highway in Perak since

last March. The facility will be provided in stages. He said the state government allocated RM20 million ($8.7 million) annually for the development of information and communication technology (ICT) of which RM19 million was for infrastructure cost and the remaining for training.

Alliance to Promote ICT Education

Raman International Institute of Information Technology (RiiiT), an ICT solution provider for the education sector, has announced its tie-up with the Cambridge University Press for promoting ICT education for the K-12 segment catering to the entire South Asian market.

RiiiT has conceptualised an innovative end-to-end curriculum for ICT Education for K-12, named "IT Kids". "IT Kids" is a special package of teaching material, to assist students and teachers in honing ICT Skills. In stage 1, the child and teacher are supported with conventional books; in stage 2, digital aid is provided, wherein the teacher is supported with classroom presentation, workshops/seminars, orientation programs, session plans; in stage 3, computers-based tutorial and online crossword puzzles, quizzes, memory games, animations, etc are provided. Whereas in stage 4, e-learning content is provided more through images, audio, simulation, and multimedia.

Cambridge University Press, impressed with the concept of "IT Kids," and seeing the opportunity for wide-open success of the product across the world, has come forward

and joined hands with RiiiT for publishing, distribution, and marketing to cover the rest of the nation, as well as the whole of South Asia. According to RiiiT sources, "IT Kids" has been successfully tried and tested in Karnataka. Many schools across the state have accepted and benefited out of this programme.

AIT homes in on Linux

The Asian Institute of Technology, Thailand will soon be home to an open source centre of excellence for "Linux on the Desktop" following the signing of a memorandum of understanding with the United Nations University. This will be the first centre of excellence of its kind funded by the UNU outside of Greater China.

AIT also signed an Academic Initiative Agreement with IBM for work with IBM software development tools and on Services-Oriented Architecture (SOA) development. AIT is also working with around 300 regional universities to develop a shared open source computer science curriculum similar to MIT's Open Courseware project. One full time researcher and 14 research students will receiving funding and start work on developing Linux on the desktop come Chinese New Year 2007.

Philippine gov't to invest in BPO projects

The Philippine government is allotting a total of some P26 billion (US$526 million) on projects that support its Cyber Corridor program, which seeks to attract investments in the field of IT and business process outsourcing.

The Commission on Information and Communication Technology (ICT) announced several projects under its Medium-Term Public Investment Program (MTPIP). Under the MTPIP agenda, P5.1 billion is intended for the government broadband network; P11.1 billion on ICT education and distance learning; P3.5 billion for Public Access and Postal Programme;

P3 billion for disaster prevention and preparedness; P4 billion for government mass media and broadcast services; and P221 million for technical assistance projects.

In order to produce graduates for the knowledge economy, the Cyber Corridor would focus on the implementation of the National English Proficiency Programme being conducted by both the Department of Education (DepEd) and Commission on Higher Education (CHED); the Distance Learning Program, also by DepEd; and Training for Work Scholarship Project to be implemented by the Technical Education and Skills Development Authority (TESDA).

Internet users in Myanmar number nearly 300,000

The number of Internet users in Myanmar has reached nearly 300,000, up from merely 12 four years ago, according to newly disclosed figures of the telecommunications authorities.

According to the Ministry of Communications, Posts and Telegraphs, although the telephone wire capacity has been upgraded to 12 megabytes (MB) per second from 2 MB previously, the Internet lines are still so congested that arrangements are to be made to upgrade the capacity further to 45 MB in the future.

To improve the country's Internet access, the authorities are also extending connections of Asymmetric Digital Subscriber Line (ADSL) to every township, setting the target to be met by the end of this year.

The country introduced e-education system in early 2001 with one ICT park (now known as Info-Tech) in Yangon and another ICT park (now known as Yadanabon Cyber Corporation) in Mandalay having been set up in the two following years to provide ICT services in the country. Meanwhile, Myanmar has also been launching an ICT development master plan under the

Initiative for ASEAN Integration (IAI), aimed at narrowing the development gap among the regional members. Detailed programmes to link international networks are also being carried out in accordance with the master plan drafted by the Myanmar Computer Federation (MCF).

Thailand's oldest public library gets a digital upgrade

The Lumpini public library in Thailand will celebrate its 51st anniversary this year. A recent upgrade to its IT facilities and a new digital literary programme provide even more reasons for seeking out Thailand's first public library, which is located in the heart of the city at Lumpini Park.

According to Bangkok Metropolitan Administration (BMA) governor Apirak Kosayodhin, it is BMA policy to promote self-learning activities for the public by offering a "Discovery Learning Library". The concept of a discovery-learning library was to physically modernise the library, develop self-service facilities through IT and promote more activities through a learning centre for the community.

According to Microsoft (Thailand) managing director Andrew McBean, the renovated library would add four zones: an Information zone where new books are available; an interactive Kids zone; a Silent zone dedicated to the rare book collection of the Princess; as well as a Cyber zone that houses PCs and other equipment and that could help parents learn about proper online control. Inside and outside the library, visitors can access Wi-Fi hotspots.

Currently, the library serves more than 1,000 individuals each week, however, it is expected that the renovated Lumpini Library will draw around 10,000 in the first three months. ◼

News

1,500 ICT graduates every year by 2009

By 2009, the Malta government plans to have increased the number of ICT graduates by 1,500 each year. In fact, a public-private arrangement has already been reached to accommodate more than 320 students, who have been awaiting admittance to courses in information and communication technology (ICT) at the Malta Council for Arts, Science and Technology (MCAST) since they applied in September.

The number of eligible students who applied for ICT courses in September exceeded the 600 tally, and is more or less equivalent to the total number of students to apply for such courses during the past four years. The government has signed definite contracts with private ICT training centres for students to be trained under the supervision of MCAST. All eligible students who could not be accepted in September will now be accepted.

The training providers will be following the same curriculum used for ICT courses at MCAST, and students will enjoy the same benefits as those following courses at the college. Moreover, the government will be paying all the expenses for the ICT courses offered to these students by the training providers and the students will be able to make use of the MCAST library and other facilities.

Education ministry in workforce development

The education ministry in Uganda has introduced a new low-cost ICT-based learning to equip the workforce with development skills.

The e-learning training programme has already been launched in Jinja. The courses provide skills to enable trainees access the vastly-expanding technology employment opportunities especially in out-sourcing and call centres.

E-learning helps to save animals

Hundreds of thousands of animals are saved each year from use in education thanks to computer simulations created by Professor of e-learning at Edinburgh University, David Dewhurst. The development of his software programmes has been funded by the Lord Dowding Fund for the past 20 years as his computer programmes replace the use of animals in university science teaching.

Professor Dewhurst said - LDF is currently helping us develop programmes to enable teachers all over the world to design their own courses using our online tools. The LDF grant is enabling us to produce different language programs and upgrade existing tools. In addition, LDF is funding the promotion of the simulations to spread the word.

KIE launches EdQual ICT for basic education

Kigali Insititute of Education (KIE) in Rwanda has launched a new research programme for implementing good quality of education in the country.

The research programme named EdQual ICT will especially use for basic education of Science and Mathematics. About 200 educators will discuss the use of ICT in the teaching of Science and Mathematics. The programme is facilitated by four professors of UK, Chile, South Africa and Rwanda. This is first kind of education programme in Rwanda with the use of ICT. The purpose of Edqual is to generate and promote new knowledge, which will improve education quality for the poorest people in the world and raise gender equity. The five-year research programme is aimed for designing initiatives, which can be implemented realistically a large scale in sub-Saharan Africa and other low developed countries.

Secondary schools of Uganda will get computer labs

Now, the majority of secondary schools in Uganda would be equipped with computer laboratories.

The ICT state minister Alintuma Nsambu announced this plan at the Media Node ICT journalists' workshop. According to him, these laboratories would encourage ICT programmes. About 54 schools were already equipped with computer laboratories. It is expected the scheme will take place by next year.

MPs accuse government agency in UK for restricting open source in schools

Nineteen MPs, led by a former teacher, are backing a parliamentary motion which claims that BECTA, the government's advisors on the use of ICT in education, is using outdated frameworks which exclude suppliers of open source software.

Schools are advised that they should purchase all ICT products and services through a BECTA framework. The MPs claim that these frameworks are biased in favour of large software suppliers and discriminates against smaller software suppliers, such as open source developers.

BECTA and the DFES say they strongly rejected the claims of the MPs. They say the issue of open source was one of "measured inclusion, rather than blanket exclusion".

Mark Your Calendar

december

Belief
14-15 December, 2006
New Delhi, India
http://www.beliefproject.org/intconf001

e-Learning International Conference 2006
14 - 17 December, 2006
Bangkok, Thailand
http://ru.ac.th/elearning_conference/

january

The 5th Annual Hawaii International Conference on Education
6-9 January, 2007
Honolulu
USA
http://www.hiceducation.com

BETT 2007
10 - 13 January, 2007
Olympia, London
http://www.bettshow.com/bett/show_ home1.asp

linux.conf.au
15 - 19 January, 2007
Sydney, Australia
http://lca2007.linux.org.au/

iLearn Paris Forum 2007
30 – 31 January, 2007
Paris, France
http://ilearn2007.eife-l.org/

ASTD TechKnowledge
31 January – 2 February, 2007
Las Vegas, NV
http://tk07.astd.org/

february

digital LEARNING | ASiA 2007

6 - 8 February, 2007
Putrajaya International Convention Centre, Malaysia
http://www.digitallearning.in/dlasia/

e-Learning 2007
17 – 20 February, 2007
New Mexico, USA
http://www.itcnetwork.org/elearning2007.htm

IADIS INTERNATIONAL CONFERENCE WEB BASED COMMUNITIES 2007
18-20 February, 2007
Salamanca, Spain
http://www.webcommunities-conf.org/

Innovations in Testing Technology: From Promise to Practice
23 February, 2007
Richmond, Canada
http://www.tasainstitute.com/symposium/

Training 2007 Conference & Expo
26 – 28 February, 2007
Orlando, Florida
http://www.trainingconference.com/learninggroup/ training/index.jsp

march

iptvworldforum 07
5-7 March, 2007
Olympia, London
www.iptv-forum.com

Main objectives:
- Unleash the potential of Grid technologies & research infrastructures across key domains;
- Increase interaction and co-operation between European and Indian ICT players;
- Capitalise on successful collaborative stories and pave the way for future developments.

Key features:
- A rich & varied programme of plenary and parallel sessions covering a wide range of highly relevant themes and led by people at the forefront of these emerging technologies;
- Promotional Zone: literature and poster area showcasing a broad spectrum of Grid-empowered technologies and e-infrastructures developed by business and research organisations, as well as the latest publications by the European Commission and Indian government. The publications of BELIEF Media Partners, the Centre for Science, Development and Media Studies (CSDMS), India, lead partner for the conference, and ConnectWorld, UK, will be on display. Participants are free to take away fliers, brochures and publications;
- Get-In-Touch Sessions: participants take centre-stage to introduce their current and future activities during a 10-minute presentation.
- Training Sessions: participants can learn about Grid take-up and extending Grid to new user communities from trainers representing the EU-funded project EUIndiaGrid (http://www.euindiagrid.org/).

EU Speakers from: Brunel University (UK); CERN (Switzerland); CNRS-IN2P3 (France); Copenhagen Business School (Denmark); Dante (UK); Duke University (Germany); Eindhoven University of Technology (Netherlands); Engineering (Italy); ERCIM (France); Fraunhofer SCAI (Germany); GRNET (Greece); INFN (Italy); Infra Technologies (France); Institute for Biomedical Technologies - CNR (Italy); KTH (Sweden); Martel (UK); Poznan Supercomputing & Networking Centre (Poland); University College London (UK); University of Edinburgh (UK); University of Salerno. Representatives from the EC and EC delegation to India. Indian Speakers from: Avanade; CSDMS; ERNET; Indian Institute of Technology; Indian National Informatics Centre; Ministry for IT; Sullivan University.

Who should attend?
- IT innovators from business, including CEOs, CTOs and CFOs;
- Key players from research organisations, including representatives from national and European-funded Grid initiatives and projects;
- Technology developers & Grid technology specialists;
- Service providers;
- End-users;
- Health practitioners; educationalists; government representatives and policy makers from across Europe and India.

Participation is free but subject to on-line registration at: http://www. beliefproject. org/intconf001 To find out more about the BELIEF Project and become a Community Member, please visit the BELIEF website, http://www.beliefproject.org/.

Belief

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BELIEF Conference Sessions

- A1: Government delivered services driving eInfrastructures
- B1: Connectivity and sustainability: outreach to new user communities
- Get in touch: Projects Networking session 1
- A2: e-health
- B2: Scientific repositories and the future knowledge infrastructure
- Get in touch: Projects Networking session 2
- A3: eInfrastructures Reducing the digital divide in emerging economies
- B3: eInfrastructures for Enabling Business
- EU-India Grid Project information session
- A4: eInfrastructures for Distance and eLearning
- B4: Mobile Grid and the eInfrastructures convergence
- Get in touch: Projects Networking session 4

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I am a child
Though, I look after two as
My own.

I have dreams
Though, I never talk
About them.

I have needs
Though, I have not
The means.

I have learnt
To give, without
Ever demanding.

Is asking for
An education, asking
Too much.

I am but a child!

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