

Centre for Innovations in Public Systems (CIPS)

ASCI, Bella Vista, Raj Bhavan Road, Hyderabad - 500 082, India.



IT@School, Kerala

A Case Study with Details for Replication



Documentation and Knowledge Partner

OneWorld Foundation India, New Delhi

Feb 2013

List of publications by CIPS

1. Dreams to Reality – Education, Training and Service Centre for Persons with Different Abilities, Navi Mumbai Corporation (Feb 2012)
2. Lecture of Shri H. Sudarshan, Honorary Secretary, Karuna Trust on the Second Foundation Day (May 2012)
3. Proceedings of the Workshop on the Role of Medical Colleges in Strengthening Primary, Secondary and Tertiary Care : Experience of CMC Vellore (April 2012)
4. Detailed project report on the best practice “Use of IV Iron Sucrose Injection for Severe Gestational Anaemia Management”
5. Proceedings of the National Workshop on Achieving Excellence in Eye Care Delivery (Jun 2012)
6. Database on Innovative Practices in Urban Governance (Nov 2012)
7. Database on Innovative Practices in Education (Jan 2012)
8. Database on Innovative Practices in Health (Jan 2013)
9. Detailed Case Study on Innovative Practices – Madhya Pradesh Educational Portal (Feb 2013)

List of Upcoming Publications

1. Aravind Eye Care, South India
2. Palliative Care, Kerala
3. Watershed Management, Gujarat
4. Village Health & Nutrition Day, North Tripura
5. Making Medicines Affordable, Chhattorgarh, Rajasthan
6. Use of IV Iron Sucrose injection for severe Anemia management, Tamil Nadu and Karnataka
7. Comparative study of Aarogyasri scheme of Andhra Pradesh and the Comprehensive Health Insurance Scheme of Kerala
8. 3 year Rural Medical Practitioners course in Assam
9. Chhattisgarh Paddy Procurement, Chhattisgarh
10. Jeevika (Bihar Rural livelihoods Promotion Society), Bihar
11. Jan Mitra Scheme of Madhya Pradesh, Madhya Pradesh
12. Mee Seva - Common Service Centre of Govt. of Andhra Pradesh
13. ePASS - Online Scholarship Disbursement Scheme, Andhra Pradesh
14. APPSC- Online processing of applications, Andhra Pradesh
15. Child Development Centre Kerala
16. Karnataka Jnana Aayoga (Karnataka Knowledge Commission), Govt. of Karnataka
17. SCORE: e-Registration in Bihar (Land Revenue/Administration)
18. Kerala Land bank project, Govt. of Kerala
19. 8-hours duty system in Police stations, Kerala
20. Court work Monitoring system of Vijayawada Police, Andhra Pradesh
21. Video documentary on Primary Health Centers in Tamil Nadu
22. Maharashtra Medical Council- Need for Self-regulation of Healthcare & Best Practices, Maharashtra
23. Functioning of e-COP system in AP, Andhra Pradesh
24. Use of Mobile Phones for speed and efficiency in Police work
25. Performance Tracking system in Karim Nagar district, Andhra Pradesh.



Centre for Innovations
in Public Systems

IT@School, Kerala
A Detailed Case Study
for Replication

Centre for Innovations in Public Systems (CIPS)

ASCI, Bella Vista, Raj Bhavan Road, Hyderabad - 500 082, India.



IT@School, Kerala

A Case Study with Details for Replication

Documentation and Knowledge Partner
OneWorld Foundation India, New Delhi

Feb 2013



TABLE OF CONTENTS

1. In Brief	1
2. Innovation Context	1 - 5
2.1 Education, Innovation and ICT as enablers of a knowledge society	
2.2 Kerala as an emerging knowledge society	
2.3 Malappuram : India's First e-Literate District	
2.4 ICT Interventions in the Education sector and their Impact	
2.5 Organizational Structure of the IT@School Project	
2.6 Key Stakeholders within the Project	
3. New Approach	6 - 7
3.1 Integrated Model of ICT Enabled Education	
3.2 Curriculum Support for IT Education	
3.3 Key components of the Project	
4. Implementation Strategy	7 - 25
4.1 Phases of IT Development	
4.2 Institutional Parameters	
4.3 Development of Human Resources	
4.4 Outcomes of Training Programs	
4.5 Technological Parameters	
4.6 Academic Parameter	
4.7 ICT Resource Base	
4.8 Development of Infrastructure	
4.9 Schemes Facilitating Enhancements	
5. Challenges in Implementation	25 - 27
6. Benefits of Innovation	28 - 30
7. Financial Model	31 - 32
8. Potential for Replication	33 - 34



TABLE OF CONTENTS

9. References	35
10. Annexures I - VII	37 - 68



In Brief / Innovation Context

1. In Brief

IT@School was introduced by the General Education Department of the Government of Kerala in 2001 in recognition of the role of Information Technology as an enabler of quality education. The primary objective of the project was to enhance the intellectual capacity of the teachers and the curricular comprehension of students based on the institutionalization of ICT enabled education.

The traditional system of teaching has seen a complete and systematic transformation in the project. The emphasis shifted from conventional teaching methods to an ICT driven learning process. It was premised on a dynamic and participatory pedagogy that prioritized the need for constant upgradation of IT enabled knowledge and skills. The IT enablement of education was based on a holistic integration of certain key activities, listed as under.

- i. Capacitating teachers as the pivotal point of ICT enabled teaching and learning
- ii. Developing an IT efficient infrastructural environment
- iii. Facilitating simultaneous deployment of Free and Open Source Software platforms, and
- iv. Generating an IT embedded indigenous knowledge base

This integrated approach aims to make teachers and students 'knowledge economy ready'¹. IT@School has been involved in this process for over a decade and has catered to the needs of almost 8000 schools, 1.6 million students and over 2, 00,000 lakh teachers across the state of Kerala in this time. Its efforts have been facilitated by a self reliant and autonomous implementing agency manned by a network of 14 District Coordinators, 160 Master Trainers, 5600 School IT Coordinators, 28000 Student School IT Coordinators and a techno-functional staff at the state project office.

2. Innovation Context

Post industrial revolution, the new global order has undergone an epochal transition from a labor intensive, mass production system to a knowledge-based economy. Herein, the imperatives of growth and development are increasingly shaped by the creation and dissemination of knowledge. With knowledge and innovation assuming significance as organizational principles of all social, political and economic activities today, the well being and welfare of people greatly depends on the way a society creates, uses and shares knowledge.

India is an emerging knowledge society. The country has made significant investments in knowledge-related areas that have facilitated high rates of growth and improved productivity. It owns a broad asset base in the form of a highly skilled human capital, a dominant English speaking population, a fast developing science and technology infrastructure and a global position in IT industry

¹ K. Anvar Sadath. IT@School Project: The Kerala model of ICT education.2012.p.507.

Innovation Context

amongst others. Yet the potential benefits of advancing itself as a robust knowledge economy remain largely untapped. In order to effectively keep pace with one of the fastest growing sectors in the world, India needs to look beyond the mere expansion of its IT base and has to stimulate an 'IT way'² of thinking among its population. This is to ensure that the country can effectively capitalize on the emerging global demand for skilled and competent manpower.

The ICT based transformation of the world is of a nature that effective creation and use of knowledge no longer depends upon the enhancement of the physical capacity of nation in terms of promoting IT and high-tech industries alone. Consistent efforts have to be made towards strengthening the human and institutional capacity of the knowledge society. It is in this context that the roles of education, innovation and ICT as enablers of a knowledge society acquire relevance.

2.1 Education, Innovation and ICT as enablers of a knowledge society

Education, Innovation and ICT are posited as central pillars of a knowledge society.³ The three components play a crucial role in the development and sustenance of the same.

Education is considered a vital source of basic skills, knowledge and innovations. This assists a society to keep pace with global society which is constantly undergoing a change. It prepares individuals to become skilled participants of a knowledge society and contributes to stimulate economic growth and development.

Information and Communication Technology improves access to the skills and knowledge essential for the strengthening of a knowledge economy. It supports and enhances the scope of the overall process of knowledge creation and dissemination.

Innovation facilitates the individual to create, exchange, enhance and apply the acquired knowledge in a way that benefits the society as a whole.

Given the role of education, ICT and innovation towards bolstering the sustenance of a knowledge economy, synergizing the three can significantly enhance a nation's capacity to rectify the mismatch between the potential of IT and the availability of skilled manpower and in securing enhanced growth and development.



Knowledge Society

Figure : Components of a
successful knowledge society
Source: OneWorld Foundation India

²T. A. PAI Management Institute. IT@School: Excellence and Quality in Education-No Exemptions-No Excuses.2010.p. 10

³ICT, Education, Development and Knowledge Society.2011.p.7

Innovation Context

2.2 Kerala as an emerging knowledge society

Kerala has the highest literacy rate of 93.91% in India. It has attained remarkable achievements in terms of effectively conflating education with ICT to augment its intellectual capital and reinforce its position as an emerging knowledge society. This can be largely attributed to its consistent efforts towards enhancing the scope of education by encouraging advanced technological interventions in the sector. A state government initiative that has successfully encapsulated these efforts is IT@School.

IT@School was introduced with the objective of overcoming the technological incapacities of the existing system of education through effective deployment of ICT enabled educational services.

2.3 Malappuram: India's first e-literate district

Once known for its socio-economic backwardness, Malappuram, a muslim-dominated district of Kerala has evolved into one of the most computer literate regions of the country. The northern district of Kerala is constituted by a population predominantly working in the Middle East. It was adopted under the Akshaya scheme in 2004 as a pilot district for the implementation of the India's first e-Literacy project and mass-employment generation.

Project Akshaya was started with the objective of making at least one member in each family in Kerala e-literate. In doing so, the initiative aimed at bridging the divide between technology and the ordinary citizen. The e-Literacy scheme has influenced a long standing social, political and economic impact on the district of Malappuram. It envisioned;

- ❖ To make 9 lakh families of the district e- literate.
- ❖ To erect a robust infrastructure that could effectively sustain e-literacy in the region and improve citizen access to advanced technology
- ❖ To create mass employment through the establishment of Multipurpose Technology Centres
- ❖ To avail citizens easy and affordable access to services at lower rates

This public-private partnership was favorably received by the local community that was dependent on mobiles and internet to communicate with their families based abroad. With the assistance of Kerala State IT Mission, the project was able to effectively connect almost 0.65 million families of the district to more than 600 Akshaya e-centres. The centres were involved in e-educating the citizens of Malappuram with the extensive use of ICT. With their gradual expansion, Akshaya centres have also become a dominant source of income and employment for the inhabitants of the region. The intervention has enhanced the IT and internet awareness of the population, thereby uplifting Malappuram as India's first 100 percent e-literate district.

Innovation Context

The project is sustained by one of the world's largest Internet Protocol based Wireless Networks. This massive wireless infrastructure has played a significant role in providing the citizens of Malappuram, a range of services including the e-Pay, e-Vidya, e-Ticketing, online registration, online passport registration, online communication providers to non-resident Indians and online medical transcription course amongst others. Rendering e-services constituted the second phase of the project. The primary aim was to improve governance and ensure the effective delivery of essential public services to citizens especially the disadvantaged.

Given the widespread impact of the Malappuram e-Literacy project, the state government has made efforts to replicate the model in other sectors including life insurance, housing loans and other financial institutions. Project Akshaya has been successfully rendering its service across the state of Kerala. It is posited as a major landmark in terms accelerating the state's efforts to strengthen rural empowerment and enhance economic development of the region.

2.4 ICT interventions in the education sector and their impact

One of the earliest ICT interventions in the education sector was adopted under the Computer Literacy and Studies in Schools (CLASS) project. It was a government initiative to provide schools with technological infrastructure specifically equipping them with computers. It was adopted as a centrally sponsored scheme during the Eighth Five Year Plan (1993-98).

However, the scheme could not effectively cater to the needs of the schools. The impact of ICT on the patterns and practices of teaching and learning revealed that most teachers and students faced difficulties in adapting to the intervention because of the lack of training and motivation.

Computer literacy was provided in the schools by private agencies. One major challenge was to synergize the training provided with the existing curriculum design. This could be attributed to the lack of adequate understanding about the education pattern on part of the instructor. Moreover, the training did not provide any specific content for the computer education. Limited participation and involvement of teachers and students also emerged as a concern. Most importantly, the lack of ownership played a crucial role in the effective integration of the ICT with the school education system.

These limitations were highlighted in the recommendations of the IT Task Force that was instituted in the year 2000. The IT Task Force was formed to assess the scope of expanding ICT into education. The main recommendations of the report included:

- ❖ Integrating computer education into the curriculum
- ❖ Infrastructural development of schools in the form of adequate supply of hardware, local area networks, internet connection etc

Innovation Context

- ❖ Skill building and empowerment of teachers
- ❖ Fostering partnership with private sector along with the government to achieve financial sustainability
- ❖ Proper integration of key stakeholders and involving government as the key implementation agency.

Based on these recommendations, IT@School was initiated in the year 2001 with the objective of facilitating quality and excellence in education. This was a state facilitated and community managed program covering all 14 districts of Kerala.

2.5 Organizational structure of the IT@School project

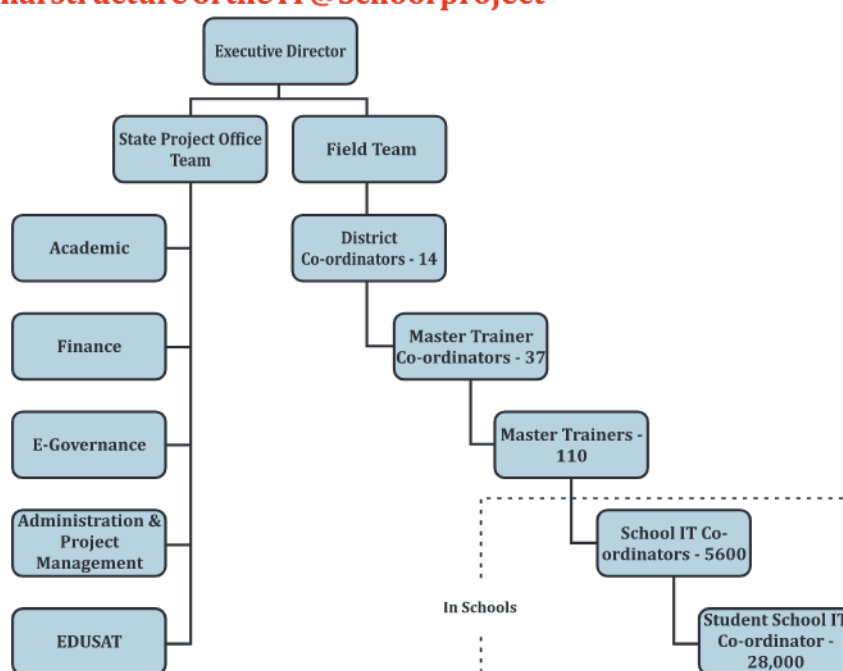


Figure : Organizational structure of the project
Source : IT@School, Kerala

2.6 Key Stakeholders within the project



Figure : Key Stakeholders of IT@School
Source : IT@School, Kerala

New Approach

3. New Approach

3.1 Integrated Model of ICT Enabled Education

IT@School encapsulates a vision to develop education into '...a process that creates informed individuals who are enabled for life-long learning and whose intellectual capital would contribute to society's wealth and well being.'⁴

This idea of education finds its true form within a learner-centered approach. It marks a paradigm shift from the emphasis on teaching to learning. The role of a teacher is no longer restricted to dissemination of information alone but towards the development of learning skills and the learner's self awareness.

IT@School leverages Information Technology to widen the contours of the existing system of education in Kerala and create space for learner centric processes of knowledge development and enhancement. It has adopted a unique approach that interlaces ICT into the teaching and learning processes to effectively capitalize quality and excellence based advancements in education.

The institutionalization of ICT enabled learning demonstrates the advantages of developing the capabilities of ICT education indigenously. As opposed to an outsourced model that consolidates the dependency of public education system on private players, IT@School emphasizes on strengthening end to end in-house capabilities of the education system. The process was based on complete integration of computer learning and computer aided learning into the education process through the adoption of Free and Open Source Software, increasing investments in teacher training and capacity building, availability of computers per learner, developing networks of teachers as trainers, and collaborative content development processes. This approach has greatly contributed towards the strengthening and self reliance of schools in Kerala. It has promoted a new culture of learning in which teachers are trained as IT enablers capable of handling their subjects more efficiently using ICT.

3.2 Curriculum support for IT education

In order to provide a road map for IT education in the state and to motivate the schools to adopt IT education, it was important to mandate IT education as a part of the school curriculum. Accordingly, 'Information Technology' was made a compulsory subject for class 8th in the year 2003. In the subsequent years, the same pattern was extended to classes 9th and 10th. This strategy was formulated on the understanding that unless IT is made a compulsory subject, teachers and students

⁴ U.R. Rao et.al.IT in Education Vision 2010: Report of the IT-Task Force. 2000,p.25.

New Approach / Implementation Strategy

might not realize the importance of using IT as an educational tool, and might also treat it as an optional subject. Today, examinations – both theory and practical – are conducted on the IT subject for classes 8th to 10th. The software for practical examination that was initially developed on proprietary platform has been shifted to free software.

3.3 Key components of the project

Key components of the initiative could be categorized into the following

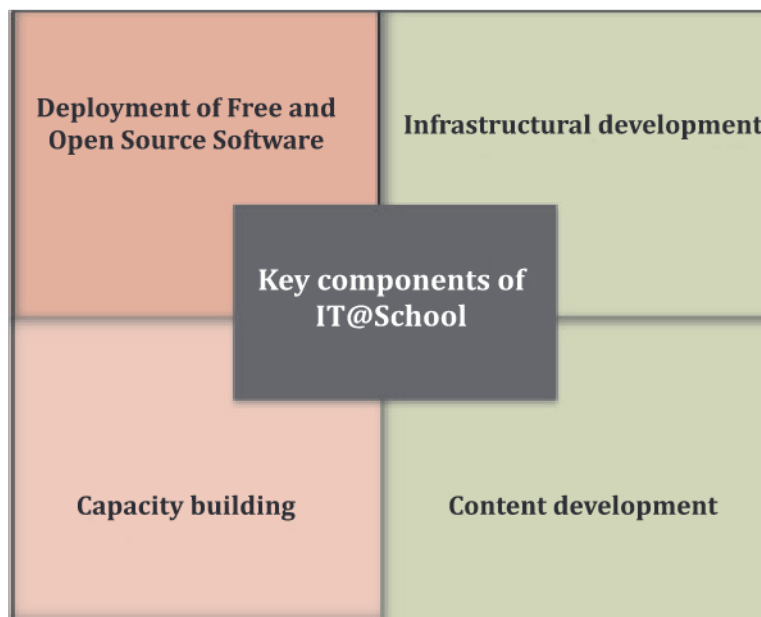


Figure : Major components of the IT@School initiative
Source : OneWorld Foundation India, New Delhi

4. Implementation Strategy

The IT@School project has adopted an integrated approach that effectively leverages IT as an enabler in enhancing the quality of education in Kerala.

4.1 Phases of IT development

Confronting an academic scenario that was technologically undeveloped, the initiative designed an implementation strategy that advanced IT education as an evolutionary process, spanning an entire continuum of IT education based on three phases – IT education, IT-enabled education and IT-embedded education.

The IT education phase was more of a preparatory stage aimed at mobilizing awareness about ICT in education with its inclusion in the school curriculum. The second phase was designed to introduce IT as a teaching tool. Herein, IT and IT based resources would be used to teach different subjects. The third phase envisions a model of school education wherein IT will develop into an integral part of the learning environment. At this stage, education delivery will be entirely based on IT and IT enabled classroom technologies and instructional design and delivery.

Implementation Strategy

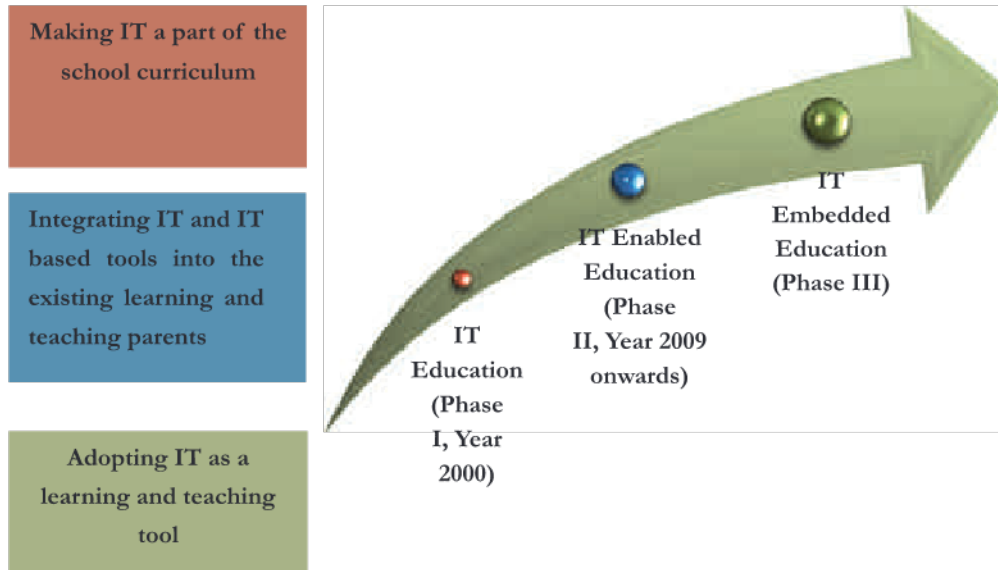


Figure : Three phases of introducing information technology in school education
Source: OneWorld Foundation India, New Delhi

The effective transition towards an IT enabled model of education presupposed key policy parameters that were adopted at academic, human resource development, infrastructural, technological and the institutional level.

4.2 Institutional parameters

Institution of an autonomous agency to implement ICT based education



Government facilitated organizational structure

4.2.1 Institution of an Autonomous Agency

The decision to set up a state facilitated autonomous agency for greater IT enablement of education ensured that focused efforts could be exclusively made in this direction. This arrangement secured the implementing agency of the IT@School project, a degree of autonomy and flexibility to develop appropriate strategies and the authority to determine the pace of their effective implementation at the local level.

IT@School is a part of the General Educational Department. It was constituted in 2001 by an Executive Committee headed by the Minister of Education. The Mission Director of the project is the Director of Public Instruction and also holds charge as the convener of the Executive Committee. The Committee meets once in a year to assess the status of the project and recommend enhancements and action plan for the following year. The below figure provides the composition of the Executive committee.

Implementation Strategy

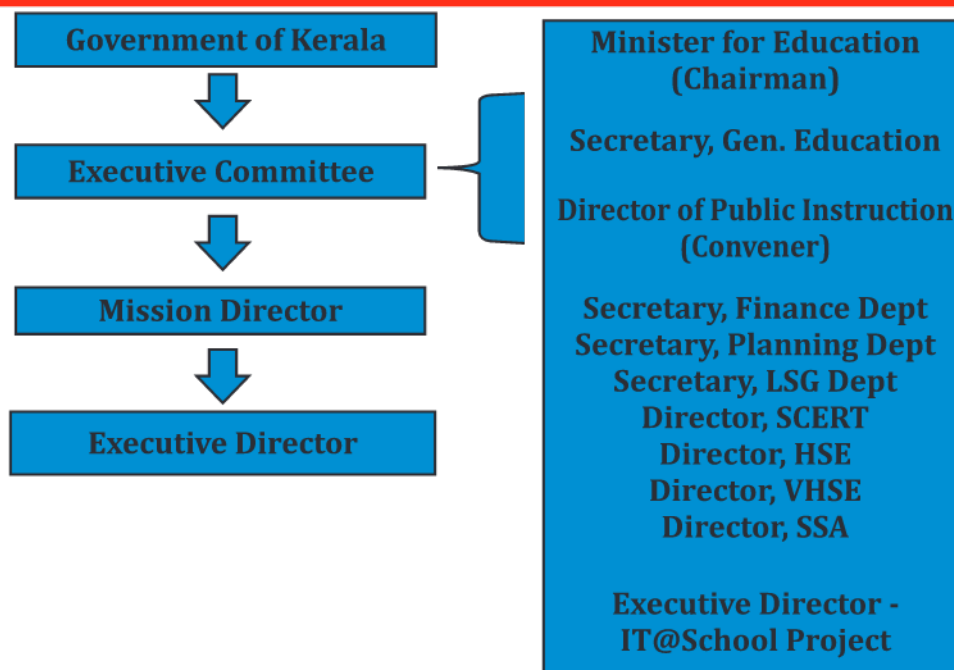


Figure : Functional structure of the Executive Committee

Source : IT@School, Kerala

4.2.2 Government Facilitated Organizational Structure

The IT@School project operates at two levels – state and district.

a) State

At the state level, a State Project Office has been set up in Thiruvananthapuram. It is headed by the Executive Director of IT@School, who supervises the proper functioning of the entire project. The state office is manned by a 60 member team rendering various technical, non-technical and administrative functions.

b) District

At the district level, the implementation of the project is distributed under three administrative divisions – district, educational district and sub-educational.

At the district level, ICT based educational services are facilitated through District Resource Centres (DRC). Under the IT@School project, 14 DRCs have been set up, one in each district. Equipped with computers, laptops, printers, projectors and all essential hardware and software components, DRCs have developed into nodal agencies assisting IT enabled training and capacity building at the district level.

All ICT based activities within this administrative division are coordinated and monitored by district coordinators. They are essentially involved in the organization and management of IT based training and capacity building programs for teachers and students at the district level.

Implementation Strategy

The training and capacity building workshops at the sub-educational district level are led by Master Trainers. They are skilled teacher- trainers who have expertise in IT and IT based applications. The activities of Master Trainers are coordinated and monitored by Master Trainer Coordinators at the educational district level.

The coordination and monitoring of IT based activities at the school level is overseen by School IT Coordinators (SITC). They are class teachers with advanced training in computers and computer aided learning.

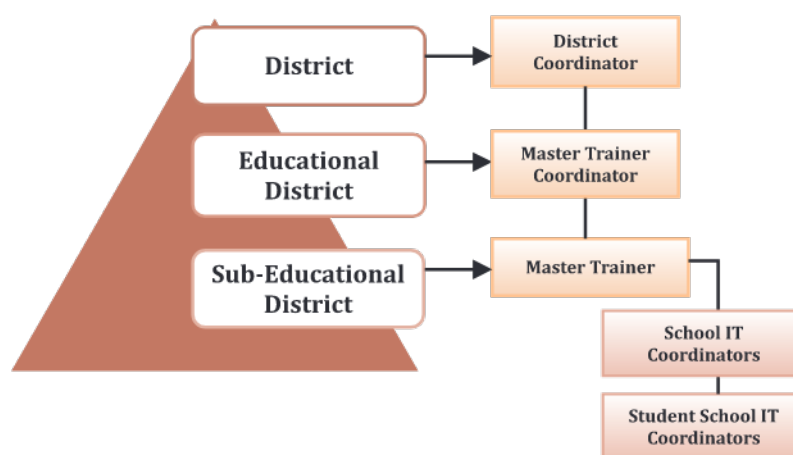


Figure : Organizational structure at the district level
Source: OneWorld Foundation India, New Delhi

SITCs are also assisted by Student School IT coordinators (SSITC). SSITCs are mostly students belonging to class 8, 9 and 10 who assist teachers and students during ICT classes and other ICT related activities in their schools.

4.3 Development of Human Resources

4.3.1 Capacity building



The dependency on outsourced ICT trainers was eliminated with the capacity development of teachers as anchors of IT led education. Enabling teachers in ICT was a culmination of the understanding that ICT education will benefit the most when teachers teach their subjects using IT in its most effective manner.

Implementation Strategy

During the initial phase of implementation, the challenges of using an outsourced model were apparent. The cost of hiring external trainers was high and the degree of ICT education provided under this arrangement was poor. Teachers were resistant to the idea of ICT being incorporated as an integral part of the curriculum. They favored the outsourced model on the grounds that teaching ICT along with their subjects was difficult and burdening. With the state government's decision to include ICT as a compulsory subject, teachers were mandated to teach ICT along with their subject and adopt ICT enabled teaching techniques.

4.3.2 Training modules

IT@School facilitates ICT based training in two stages - basic and refresher training.

At the basic or beginners level, teachers are trained in ICT and ICT based tools for a duration of 10 days. The training module is designed and customized in consideration of the needs and requirements of the trainees. This foundational stage aimed at acquainting the trainee with a range of ICT tools and ICT enabled applications such as basic operating systems, office automation applications, internet, email, video and image editing, editing of documents in various formats amongst others.



Figure : Teachers receiving training at the District Resource Center
Source : IT@School, Kerala

The latter part of the training is designed to enhance their skills in specific areas like hardware maintenance and troubleshooting, software installation and upgradation, content management, content creation, publication, information dissemination and educational software applications for various subjects.

Refresher training workshops are conducted on a yearly basis with the objective strengthening and refreshing their knowledge and skills of the previous training programmes.

The components of the training module are consistently upgraded with advancements in technology. As a result most of the trainings differ in terms of duration and frequency. Training modules and handbooks have been developed for teachers to support ICT based teaching and learning activities in schools.

Implementation Strategy

4.3.3 Implementation of training modules

The ICT based training and capacity building is organized at the District Resource Centers (DRC). The DRCs are equipped with all ICT based tools and equipment to facilitate the training workshops. The delivery of training is entirely based on IT facilitating a hands-on learning experience for trainees. The IT@School project has adopted various strategies to ensure the effective implementation of the training programmes.

4.3.4 Incentives to enhance motivation

- i. Retaining the motivation and involvement of teachers during the training programme was a crucial need. IT@School addressed this concern by providing monetary incentives to teachers.
- ii. Teachers being trained as Master trainers during the early phase of the initiative were provided traveling and dearness allowance of Rs. 200 per training day. At present, teachers participating in ICT based training during vacations are reimbursed Rs. 75 per training day and provided other benefits like encashment of surrendered leave. For trainings conducted during working days, teachers are given Rs. 125 per training day.

4.3.5 Guest teachers as replacements

- i. At the time of the initiation of the training workshops, the project adopted a unique approach to ensure that regular school education was not affected by the unavailability of teachers during the training period. Qualified guest teachers were appointed under the project in replacement of the trainees and were allocated the vacant positions on a temporary basis.
- ii. Presently, the training and capacity building workshops are organized for teachers and students during school vacations.

4.4 Outcomes of Training Programs

Network of Master Trainers, School IT Coordinators for parents and training programs for other personnel, Student School IT Co-ordinators, Training

4.4.1 Master Trainers

IT@School has created a strong network of 160 Master Trainers including district coordinators based on its intensive ICT based training and capacity building programs. The Master Trainers are school teachers from government and aided schools with advanced knowledge and expertise in ICT and its application in education. Their selection is based on a practical test followed by an interview. They are appointed as a part of the working arrangement of IT@School.

Implementation Strategy

During the initial phase of the project, Master Trainers were grouped into batches and were given trainings for a duration of 15 days. Each batch would be constituted by 10-15 Master Trainers and trainings were conducted once in a year. Since the last five years, new Master Trainers are being trained with higher secondary teachers in common batches. Master Trainers are also trained as a part of the District Resource Group (DRG). Herein, they are given particular training in ICT applications for standard eight, nine and ten, hardware and such other components.

Following the training programs, Master Trainers are equipped to conduct similar capacity building sessions for teachers and students across schools. Moreover, those exhibiting superior co-ordination and management skills are appointed as Master Trainer Co-ordinators, responsible for co-ordinating the activities of Master trainers across the state.

4.4.2 School IT Coordinators (SITC)

The project has also built a chain of 5600 School IT Coordinators who coordinate ICT based activities at the school level. The SITCs are also trained as a part of the DRG. Besides this, different training programs are conducted for SITCs and teachers from time to time. The modules of these trainings differ in duration (2-5 days) and are based on the introduction of new softwares and applications.

4.4.3 Student School IT Coordinators (SSITC)

The project has identified a few students from class 8th, 9th and 10th as SSITCs. They have been extensively trained in hardware and free and open source software applications. SSITCs have developed the expertise to assist teachers and train students in ICT and ICT related activities for a duration of 2-4 days depending on the training requirement. ICT enabled training programs conducted for students aims at familiarizing and training them in hardware maintenance, the use of free and open source software in education and developing their skills in animation and design.

4.4.4 Training for parents

In 2011-12, training programs were conducted for parents in some educational software applications used in schools and familiarize them with the benefits of free and open source software. Almost 1.74 lakh parents attended this training across all districts of the state.

4.4.5 Training programs for other personnel

ICT based training programs have also been conducted for other members of the community including the District Education Officers, ministerial staff members, physical education teachers, Art teachers etc., have also been given animation training.

Implementation Strategy

In association with the Insight scheme of Kerala State IT Mission, IT@School is also imparting ICT training for teachers of schools for the visually challenged based on free source screen reading software named OCRA.

4.5 Technological Parameters

Free and Open Source Software (FOSS) deployment

Prior to the introduction of FOSS, the State Government of Kerala did not adopt a policy to prescribe software for ICT education in schools. The syllabus prepared by the State Council for Educational Research and Training however, recommended the use of Windows Operating Systems. In 2003, with the introduction of class 8 ICT textbooks, teachers were provided training in Windows and on a curriculum that was based on Microsoft Office.

With the procurement of new computers, schools began to install and use unlicensed versions of propriety software. This was primarily because schools were not provided any legal software and in most cases, they were unaware about the legal pre-requisites of using legal software. This soon ran them into privacy related hassles with the manufacturing company. In the face of the challenges that confronted the use of propriety software, the focus shifted towards Free and Open Source Software.

Under the intensive advocacy led by the promoters of Free Software including the Free Software Foundation of India (FSFI) and Kerala School Teacher Association (KSTA) against the use of propriety software, the government was forced to incorporate FOSS products like GNU/LINUX and open office as optional subjects in 2003. However, the training of teachers continued on a Windows platform. In a study conducted by KSTA on the use of proprietary software revealed that almost 60% of the schools operated on pirated versions. 45 percent of the heads of institutions revealed that they were unaware of software licenses. The study also revealed that use of software in school was not monitored.

In 2004, IT@School project developed its own Operating System named IT@School GNU/Linux. The next challenge was its installation in computers and training of Master Trainers and School IT Coordinators in the same. Since most of the hardware was acquired locally, they had different configurations unsuitable for the proper installation of the Operating System. In 2006, an organization working towards the promotion of free software, Society for Promotion of Alternative Computing and Employment (SPACE) was accorded the task to develop a version of the Operating System that could be installed in computers with low memory. SPACE evolved IT@School GNU/Linux Lite, a version that is being used in all schools presently.

Implementation Strategy

By 2005-06, ICT textbooks were completely based on FOSS. By 2006, practical exams for IT were for the first time conducted on a FOSS platform. By 2008, IT@School completely shifted to a FOSS platform.

The second phase of IT@School was led entirely on a FOSS platform. ICT enabled content ranging from educational software applications to the generation of all forms of online content for schools is being developed and enhanced using FOSS. All applications under FOSS are based on a simple single-step installation unlike propriety software wherein each application has to be installed separately. The use of free and open source has ensured complete coverage of all government and aided schools in Kerala. Software development at this scale does not incur any expenditure on the part of project.

The adoption of FOSS has fostered a climate that motivates adaption to new and advanced forms of learning. IT@School has designed its advanced educational package on a FOSS platform. All major activities of the project including training programmes and its contents, ICT- based content for students and e-governance initiatives are based on FOSS applications.

4.6 Academic Parameter

4.6.1 Indigenous content creation

*ICT adopted as a
compulsory
subject in the school
curriculum*



*ICT enabled
indigenous
content
development*

Prior to the introduction of IT@School, ICT was viewed as external to academic system. It was imparted in schools with the assistance of external agencies and was based on a module that was inconsistent with the school curriculum. The level of participation of teachers and students in ICT classes was negligible. Lack of adequate levels of participation and motivation to adopt ICT as a crucial teaching aid constrained the effective integration of ICT into the school education system.

A policy change that significantly reversed this academic scenario was the introduction of ICT as a compulsory subject in 2003. The subject was introduced in class 8 and was later extended to class 9 and 10 over a period of time. While it was made obligatory for teachers to impart ICT education with other subjects, it gradually motivated teachers to enhance their knowledge about ICT and develop necessary skills along with the students.

Implementation Strategy

4.6.2 ICT enabled content development

ICT enabled content development feature is an essential component of the IT@School project. The objective of designing an exclusive content base for the initiative was aimed at maintaining a uniform standard of ICT education across all government and aided schools.

The content developed was premised on captivating IT as a potent instructional and reference tool for students and teachers.

Developing the content on a FOSS platform facilitated to fulfill this precondition in a significant way. The project was able to develop its own Operating System-GNU/LINUX. The Operating System could be customized to suit the ICT-based educational requirements of the education system in Kerala.

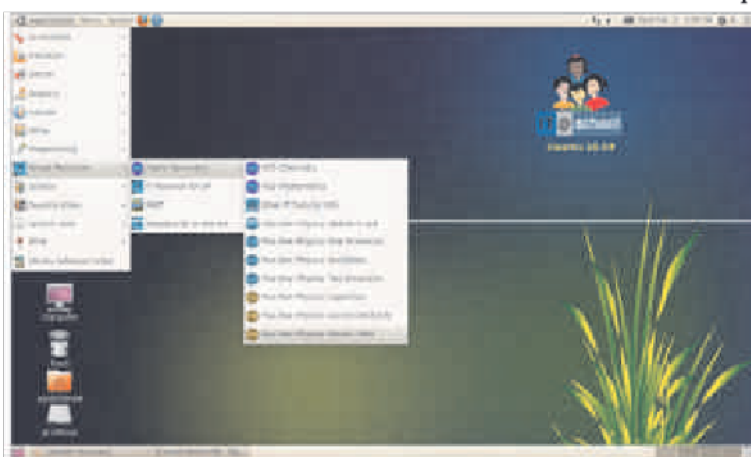


Figure : GNU/LINUX : Operating System
Source: IT@School, Kerala

GNU/LINUX has been customized to integrate all essential components of ICT based learning. The curriculum has facilitated to seamlessly integrate all educational institutions into the ICT framework.

The material is developed by an IT@School core team constituted by group of Master Trainer and is headed by the Executive Director of the project. The content is then forwarded to a special curriculum committee mandated by the State Council of Education and Training for approval.

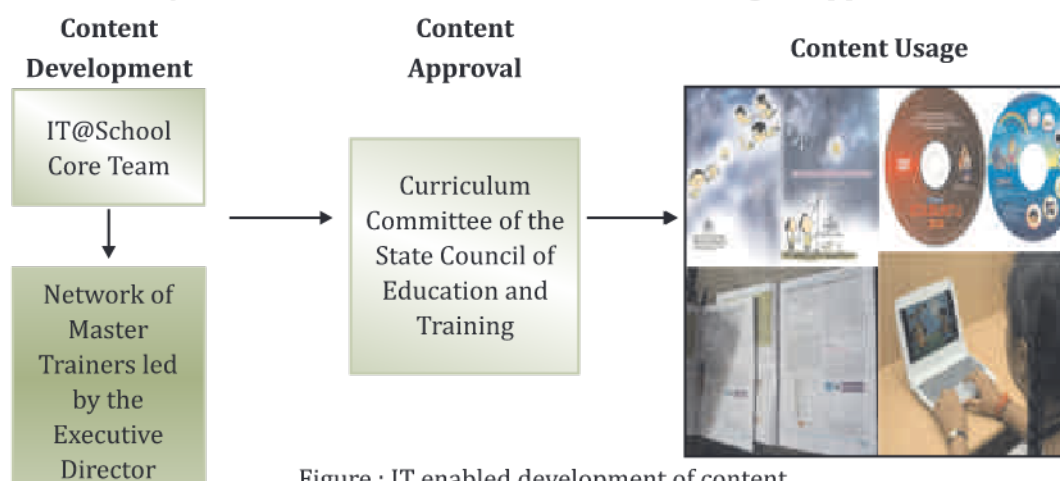


Figure : IT enabled development of content
Source: OneWorld Foundation India, New Delhi

Implementation Strategy

The ICT enabled content is available to students in various forms -

- i. Exclusive ICT textbooks
- ii. Training modules and handbooks
- iii. Repositories of educational resource
- iv. Educational software applications
- v. EDUSAT and ViCTERS channel

4.7 ICT Resource Base

4.7.1 ICT Textbooks

The primary stage of IT education was developing appropriate content material to enhance the basic knowledge and understanding of students about ICT and orient them towards its relevance in their social, and academic lives. ICT textbooks were designed and developed with the objective of familiarizing students with the components of ICT. With the implementation of ICT in School Scheme in 2007, ICT became a part of the Senior Secondary School syllabus.

The textbooks are developed in a way that the content can be used to teach subjects more effectively. It is also ensured that with the help of the textbooks, students remain attuned with latest technologies and technology based innovations. As a result, the IT curriculum is revised and updated with time. For example, the ICT textbook for class 10th feature topics that educate students about software like QG (geographical software), Stellarium simulation and Geogebra mathematics and in areas like Software Animation, Global Information System (GIS), Web Content Management, Hardware and Networking related information.

4.7.2 ICT training modules and handbooks

Handbooks and training modules have been designed for students of class 8, 9 and 10 and teachers. Such resources acquaint teachers and students about the ICT tools and applications, their functions and the way in which they can be used to enhance and improve regular teaching and learning processes.

With the inclusion of ICT as a compulsory subject for the lower primary level in 2012-13, IT@School is planning to develop an ICT module for the lower primary level teachers to facilitate ICT based learning at this level.



Figure : Resource DVDs and CD-ROMs developed under the project
Source: IT@School, Kerala



Figure : Students attending an IT subject class, using textbooks developed under IT@School project
Source: OneWorld Foundation India

Implementation Strategy

The project has developed an ICT learning module for differently-abled students in the state. The module has been developed by the Malappuram team of the project and with the objective of making ICT education more inclusive.

4.7.3 ICT based multimedia

IT@School has developed an interactive multimedia source for ICT content. It includes DVDs, CD ROMS that are distributed free of cost to schools. A resource DVD for teachers contains Educational Software for IT@School GNU/ Linux and Edubuntu OS, Audio Video files, Geogebra Applets, PDB files to use with Rasmol, ICT Text Book and handbook for teachers amongst others.



Figure : Screenshot of School WIKI

4.7.4 Resource portal

A resource portal has been exclusively designed by Master Trainers for class 10 students. Content for a range of subjects including social science, science and mathematics can be easily accessed through the portal. Subject matter is also available in the form interactive animations that enable students to conduct experiments and engage in self directed study. The portal also uses several Java applets and free software contents like videos, graphs and pictures that make the learning process interesting and comprehensive. The resource repository is available in both online and offline mode thereby enhancing accessibility to good quality educational material to students at all times.



Figure : Screenshot of IT@School Resource Portal

Amongst the efforts undertaken by IT@School to enhance quality education to students, SchoolWIKI has played a significant role. It is a knowledge database of all schools in the state of Kerala. It facilitates collaborative data building involving students generating and improving content for subjects.

'ICT Learning Corner' is a key feature of SchoolWIKI that includes content prepared by schools and special groups of teachers on all subjects.

Implementation Strategy

4.7.5 ICT based software applications

Educational softwares like Dr.Geo, Rasmol, K-Tec lab, Geobra, Chemtool and Kalzium have been developed to enhance e-learning of subjects like Mathematics, geography, chemistry, physics amongst others. These are innovative and teacher friendly applications that complement direct learning and teaching methods.

With the help of projectors and laptops, teachers have been able to effectively combine these tools into regular teaching methods to improve the learning experience in classrooms. Students also experience a classroom environment that is interactive, dynamic and interesting.

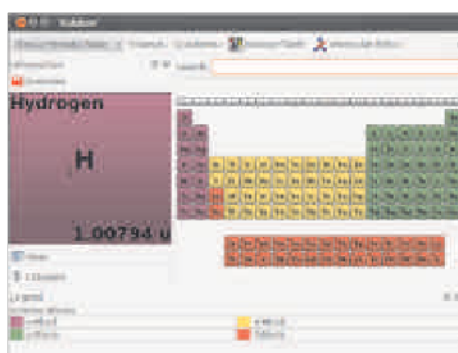


Figure : Screenshot of Kalzium software
Source: IT@School, Kerala

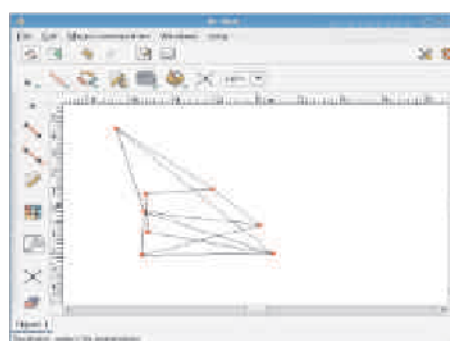


Figure : Screenshot of Geobra software
Source: IT@School, Kerala

4.7.6 EDUSAT and ViCTERS channel

IT@School is the nodal agency for EDUSAT operations in the state of Kerala. The project has used EDUSAT, the first Indian satellite launched for improving distant learning and educational services in the country, to enhance the school education system in the region.

With the technical support and assistance of the Indian Space Research Organisation (ISRO), the ViCTERS project has been able to effectively expand its coverage across the state of Kerala. ISRO provided all essential satellite and HUB equipments free of cost until 3 years of the initiation of the project. Following which, ViCTERS has been providing the annual maintenance contract charge for its HUB components to ISRO's appointed vendor-Hughes Communications. The total estimated cost of setting up a ViCTERS studio amounted to Rs. 10 crores.

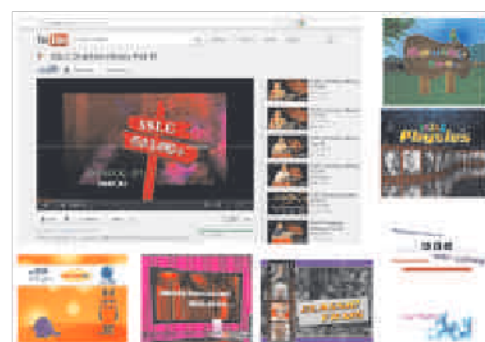


Figure : Screenshot of EDUSAT ViCTERS



Implementation Strategy

ViCTERS undertakes both in-house and external productions. Its in-house activities are supported by five production teams constituted by specialists including producers, editors, camera persons, sound technicians, animators and the technical team. The supervision for all production activities of ViCTERS is undertaken by the Head Edustat. The producers, mostly experts in the field of media and visuals are assigned to undertake video productions in line with the school curriculum every month. School teachers are also a part of the production team. The team is involved in the preparation of curriculum based educational video contents for ViCTERS.

Educational content delivered through ViCTERS is also externally sourced from national as well as international institutions like British Broadcasting Corporation, Deutsche Well, National Film Development Corporation, University Grants Commission, Vigyan Prasar, Science and Technology Council, State Institute of Educational Technology, Centre for Development of Imaging Technology including other individuals and schools through a Request for Proposal process at a rate specified by the government.

In the first phase, the project facilitated interactive classrooms that assisted students to engage with respective subject experts using the Receive Only Terminals facility, available only at selected schools. This mode of learning has enabled students to interact with experts, discuss and exchange their views, opinions and queries in ways that has widened the scope of their learning experience.

The second phase of the program was initiated with the launch of IT@School ViCTERS (Virtual Classroom Technology on Edustat for Rural Schools) channel in 2006. The studio complex of ViCTERS and EDUSAT hub is located at the state office. The studio is equipped with all essential technical and non technical resources to support the dissemination of EDUSAT related activities and effective operation of ViCTERS.

The channel has gradually emerged as an important source of dissemination of educational programs and related content to a large section of the student population. Through Receive Only Terminals, a majority of schools are able to view ViCTERS. It is also broadcasted through local cable TV and selected DTH networks, thus, enabling students to access education related information at their homes.

The channel broadcasts a wide range of educational programs based on science, technology, arts, music and films. Tutorials, videos and programs prepared by students and teachers are also aired on the channel. They are provided an opportunity to create their own productions.

Implementation Strategy



Figure : The ViCTERS studio

Source: OneWorld Foundation India, New Delhi

IT@School is currently broadcasting ViCTERS live via internet. Live streaming of the channel has expanded its audience across the world. One of the main advantages of this enhancement is that students need not depend on their local TV or DTH network for viewing the programs. ViCTERS is a part of the General Education Department of the government of Kerala. As a result no specific government order was issued for its broadcasting in the local cable network.

4.8 Development of Infrastructure

4.8.1 Infrastructural upgradation of schools

*Shift from IT
education in
computer labs
to smart
classrooms*



*Infrastructural
development of
schools*

The pattern of infrastructural development of schools prior to the introduction of IT@School was inconsistent with their basic requirements and the capacity to ensure the optimum utilization of the resources.

The first step adopted under the project was to acquire a realistic estimate of the current infrastructural status of schools. A baseline survey was conducted across the government and aided schools of Kerala and it was observed that the infrastructural development of most schools was below average. Absence of a standardized process of functioning was identified as a major lacuna of the prevailing implementation strategy.

Implementation Strategy

4.8.2 Hardware deployment

Based on the deductions of the baseline survey, the project began to mobilize necessary hardware for schools. Until 2007, the primary source of financing hardware deployment in schools was based on the support of local self help groups, MP/MLA local area development funds and Parent Teacher Associations.

In 2007, with the implementation of the ICT @School scheme, the ongoing process of hardware deployment received a major boost. The scheme mandated that all high schools and higher secondary schools are equipped with advanced ICT based infrastructure.

From 2007-2012, approximately 4071 schools benefit in terms of access to advanced hardware facilities every year. Hardware resources worth almost Rs 150 crore have been deployed in all government and aided schools under the scheme. The equipment includes computers, laptops, netbooks, thumb drive, monitors, mouse, keyboards, external hard disks, Laser jet printers, DOT Matrix printers, multimedia projectors, projector mounting kits, scanners, television, 3 KVA UPS, generators, DVD writers and handy cams.

4.8.3 Process of hardware procurement

IT@School has adopted an online procurement process that ensures standard deployment of hardware to all schools.

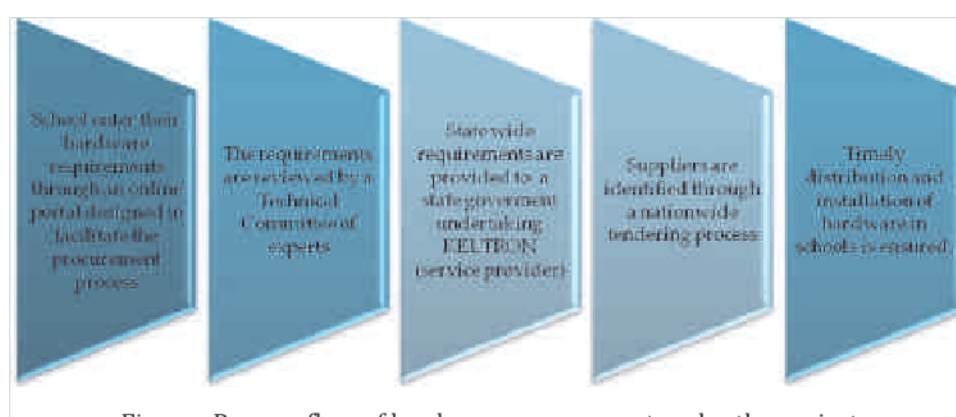


Figure : Process flow of hardware procurement under the project

Source: OneWorld Foundation India, New Delhi

The review of the hardware requirements provided by schools is based on strict guidelines. In 2007, the Director of Public Instruction issued strict guidelines for the procurement process using MP and MLA funds. (Annexure IV)

Implementation Strategy

4.8.4 Maintenance of hardware

i. Warranty and insurance coverage

The process of procurement is based on the observance of strict guidelines. This includes terms such as a three year warranty, services and after sale support. The project has also ensured that that all equipments procured under the initiative are insured. As a result, all equipments have been covered with insurance in association with United India Insurance Limited, a government public sector undertaking. This has ensured the safety and security of all items of equipment in case of damage.

IT@School has developed a broad based support mechanism to ensure effective troubleshooting of hardware problems. These include;

ii. Hardware clinics

The hardware clinic program is conducted with the technical assistance of KELTRON. The program was launched for the purpose of maintenance, repair and upgradation of computers that are damaged or based on low configurations. It provides teachers, students, Master Trainers an opportunity to enhance their technical know-how about the ICT hardware in schools. Over the last four years, with almost Rs 8.36 crore spent on hardware clinics, the IT@School has been able to avoid additional procurement worth Rs. 51 crores.



Figure : Hardware clinic
Source: IT@School, Kerala

iii. Call centre and web portal

With the objective of facilitating swift maintenance of defunct hardware, IT@School in association with KELTRON, has set up a toll free call centre. The project has also developed a web based monitoring system for the registration and redressal of complaints in real time. All schools registered in the portal can enter their hardware related complaints and issues in the web link <http://sc.keltron.org/>. Complainants can also track the status of their request through the portal.



Figure : Screenshot of the KELTRON
web portal Source: IT@School, Kerala

4.9 Schemes Facilitating Enhancements

IT@School has been able to intensify the infrastructural advancement of schools through various schemes and programs.

Implementation Strategy

4.9.1 Laptop to teacher scheme

Under the laptop to teacher scheme, almost 50,000 teachers in the current year have been able to procure laptops and netbooks at a price lower than the market value of the machines. The equipments are available at this rate to teachers because the IT@School project receives a benefit in the form of bulk purchase rate for procuring 10000 laptops and 18000 netbooks under the ICT@School scheme. It was implemented without any cost incurred on the part of the project or the state government.

The laptops and netbooks are procured through a tendering process undertaken by KELTRON. The vendors are selected following the technical and financial evaluations of the rates quoted by companies. Details of the hardware purchases for the year 2010-11 reveal that laptops were purchased at the rate of Rs. 19,250/- and the netbooks for Rs.12,500/- . The overall costs included the service charge payable to KELTRON and the Solution Provider accessed at Rs. 762/- and Rs. 587/- respectively. The laptop and netbooks were available to the teachers at a lower price of 17,770/- and 11, 450 respectively exclusive of the service charges. They could also avail all the service benefits offered additionally.

Head masters, principals, teachers of government and aided schools can procure these machines under the ICT@School scheme. This is however, based on the condition that they are trained in IT and encourage IT enabled learning. As a result, teachers can access the benefits of the scheme only upon being certified by the head of the institution that they are trained and proficient users of IT in education.

4.9.2 Smart Schools program

The Smart School program aims at developing 5 schools in the state of Kerala into ICT learning models of school education through advanced infrastructural assistance. A financial assistance of Rs.25 lakh per year will be extended to these schools for a period of 5 years. The primary objective is to uplift these against international standards.

4.9.3 Intel's World Ahead program

IT@School, in collaboration with Intel's PC donation program, distributed 625 Classmate PCs (netbooks) to six Smart Schools. Classmate PCs have been deployed free of cost and in such large numbers only in the state of Kerala. The Intel powered Classmate has a 10 inch screen, Atom N450 processor, 1GB RAM and 160 GB HDD. The equipments are handy and user friendly.



Figure : A classroom in a Smart School
Source: OneWorld Foundation India, New Delhi

Implementation Strategy / Challenges in Implementation

The schools also have been provided storage cart facility that keeps the equipments safe and enables to charge the machines simultaneously.



Figure : Intel Classmate netbooks
Source : OneWorld Foundation India, New Delhi

4.9.4 Broadband and internet connectivity

In association with BSNL, IT@School has provided broadband and internet connectivity in all government and aided schools. The use of internet in schools was based on stringent usage norms so as to ensure that browsing in schools is safe and secure. The project has now proposed a VPN connection i.e. Virtual Private Network. VPN provides improved connectivity as compared to ordinary broadband connectivity. It enables high speed internet connectivity and unlimited data sharing without normal internet bandwidth. This new form of data transfer is named VPNoBB (VPN over Broadband). Upon implementation, it will function as a private virtual network in Multi Protocol Label Switching Cloud.

4.9.5 Electrification of Classrooms

In the year 2010-11, IT@School funded the electrification of almost 20000 classrooms of government schools. With access to continuous supply of electricity, ICT enabled teaching and learning process have been facilitated to a great extent. Teachers can use laptops, projectors and wireless internet in classrooms.

5 Challenges in Implementation

5.1 Mobilizing active participation of the community

The state Government of Kerala has encouraged IT based intervention in education under several policies. However, these efforts remained largely ineffective because of the failure to mobilize adequate participation and support of the community. Some of the early efforts were met with inadequate response especially in form of lack of motivation to develop an IT enabled system of education. A sense of ownership towards such a learning process was missing especially amongst the teachers.

Challenges in Implementation

The scenario persisted largely because of the failure to effectively integrate computer aided learning as a part of the existing system of education. Teachers were not actively involved in computer learning. Despite having access to IT based resources, they lacked basic computer literacy. As a result, they were unable to gauge the positive role of IT and IT based tools in enhancing the existing teaching and learning processes.

With the state government's decision to make IT based learning a compulsory part of the school curriculum, teachers were obligated to adopt this change. A series of road shows, campaigns and workshops were also conducted to motivate and encourage teachers, students, parents and the overall community to recognize the benefits of an IT enabled education system and extend their support and cooperation to effectively realize the same.

5.2 Inadequate hardware facilities

Prior to 2000-01, less than 500 computers were available in schools. Under a few centrally sponsored schemes, hardware resources were facilitated to schools, however this procurement process was adopted in a very unscientific manner. Machines were deployed to schools without taking into consideration their basic requirements. Hence, a major challenge confronting the IT@School project was to engage in a proper assessment of the local needs and design a standard procedure for hardware deployment to ensure that the requirements of schools are effectively fulfilled.

5.3 Unstructured computer education

The academic scenario that prevailed at the time of the initiation of the project was one wherein the content and processes involved in enabling IT based education was led by private companies. The ICT curriculum adopted was not attuned to the regular curriculum. Students were taught IT based components and applications that had little or no practical relevance in their lives. This was primarily because the curriculum was developed and taught by outsourced staff who were, in most cases, not a part of the education system and unacquainted with its requirements.

These conditions enforced the need to develop a dynamic ICT based content exclusively designed to infuse quality and excellence into the education system, the ultimate goal of the IT@School initiative. The use of FOSS enhanced the possibilities of the same.

5.4 A financially overburdening BOOT model

During initial phase of the project, schools had to bear the responsibility and the costs of developing their own infrastructure. Procurement of hardware and software emerged as a major challenge. Under the BOOT model, schools were not only compelled to purchase propriety software but also a particular

Challenges in Implementation

brand of computers and other essential equipments which were highly priced. The machines and software procured were not only expensive but the cost of their regular maintenance and upgradation overburdened the schools to a significant extent. Within such an arrangement, educational institutions had very limited choice of economizing costs.

5.5 Restricted use of propriety software

Several challenges were associated with the use of propriety software. Purchasing propriety software for a large number of systems entails huge costs during the early stage. Accessing propriety software was expensive. In several cases, schools began to inadvertently use unlicensed version of the software, violating the privacy policies of the multinational companies developing these software. Police raids were also conducted in schools for using pirated versions of the software.

Innovating and expanding the scope of IT based education on propriety software was also a major concern. User licenses were required for any form of software deployment. With core educational processes and curriculum privatized, the scope of autonomous growth and development of the education system was restricted.

The adoption of FOSS addressed these limitations to a great extent. It offered a free and user friendly software source that could be developed, modified and enhanced to suit the requirements of IT enabled education. It was cost effective and conducive for the growth and enhancement of IT in education.

5.6 Transition from propriety software to FOSS

The transition from the use of propriety software to free and open source software was challenging. Developing an education model that was based entirely on a FOSS platform was a long drawn process. Although FOSS is increasingly posited as a user friendly source, training teachers in GNU/Linux Operating System and its application was a cumbersome process. During the initial stage, the implementing agency had to provide training to more than 40,000 teachers for 90 days on GNU/Linux based systems. Discussions with IT@School team revealed that the task of identifying, training and sustaining a network of highly skilled and competent Master Trainers capable of enhancing the proficiency of the existing education system in FOSS stretched over a period of 6 months to a year.

Benefits of Innovation

6 Benefits of Innovation

6.1 Introduction of computer aided learning

The academic environment of schools covered by the initiative has significantly transformed over the past decade. The shift from the conventional 'chalk and talk' method to an ICT enabled teaching and learning process has contributed extensively in enhancing the cognitive abilities and practical knowledge of students.

With IT-enablement of schools, the technique of imparting and gaining knowledge has become more focused. In the past, students had access to a single source of information, the teacher. IT@School has availed pupils' access to wide sources of knowledge and information within a click of a button.

Most schools under the project are providing students a technologically advanced learning experience. ICT tools like laptops, notebooks, tablets are replacing textbooks in classrooms. With the development of digital content and virtual lessons, the teaching strategy is more about seeing, experiencing and learning rather than rote learning. Students have much more control over how and what they learn.

Classrooms are no longer based on narrations but collaborative sessions wherein teachers have the advantage of interacting and engaging with students much more. This has improved personal relationships between the teachers and the students and transformed classrooms into an amicable and dynamic space.

This IT enabled reform in education has impacted the performance of students in a significant way. The SSLC passing percentage for the 2012 is more than 95% across the state of Kerala.

While students continue to excel in studies, IT@School has also worked towards preparing students professionally. Besides extensive training in ICT, courses are also provided in animation with the objective of not only developing their innovative and creative skills but with the intention of familiarizing this field to them as a viable career.

6.2 Empowering teachers as ICT enablers

One of the highlighting features of the project is the empowerment of teachers as IT enablers. This approach reflected the understanding that teachers can most effectively lead IT enabled education. IT@School has succeeded in developing a wide chain of highly skilled and trained teachers

Benefits of Innovation

who were proficient in all aspects of an IT enabled model of education including that of teaching subjects using IT, content development, uploading and upgrading software, addressing hardware issues, coordination and implementation of the project and such others. The project relies on a strong network of 110 Master trainers and almost 5600 School IT Coordinators, who are also teachers from government and aided schools.

IT@School has played a crucial role in building the self esteem and confidence of teachers. This has greatly redeemed the standard of teaching in government schools. While teachers use IT to effectively cater to the needs of students, they willfully engage in using IT and IT based resources for their own personal and professional development. Interactions with school teachers revealed that IT has enabled a platform wherein teachers are not hesitant to learn and improve their skills. Internet has become a crucial medium for most teachers to look for sources of inspiration outside the conventional patterns of teaching and adapt new ideas in the classrooms.

6.3 Enhanced teaching and learning experience

A major outcome of the IT@School project is the enhancement of teaching and learning experience in classrooms. Students have access to a large body of indigenously developed content through various media; direct, online, interactive and broadcasting. The content is available to students in the form of printed textbooks, electronic textbooks, internet, web portals, interactive multimedia, and dynamic educational software packages. The access to this ICT-enriched knowledge has been further enhanced with advanced infrastructural upgradation of schools.

6.4 Leveraging e-governance initiatives

The primary objective behind the introduction of e-governance initiatives was to gradually convert all major activities of the Education Department e-friendly and improve the efficiency and effectiveness of the system. This was aimed at automating the processes of governance so as to ensure greater stability and systematization in administrative functioning. This has been facilitated with the help of FOSS application. The most innovative and successfully implemented e-governance initiatives under IT@School include Online Transfer and Posting of Teachers, Noon meal distribution computerization, Centralized Text Book Indent System, Total Physical Fitness Program, Single Window admission system for 11th standard students, youth festival software, pre-metric scholarship online, implementation of Service Payroll Administrative Repository for Kerala and such others.

An online application that can play a potential role in transforming the face of governance is SAMPOORNA, School Management Software. It is being implemented across all schools in the state of Kerala. This has been designed with the intention of developing a comprehensive database of teachers

Benefits of Innovation

and students of all schools. The objective is to facilitate schools, department authorities and the State and Central government to effectively implement educational activities. The online software can ensure that processes including the preparation of transfer certificates, maintaining the admission register, time table preparation, compilation of reports are completed in real time.

6.5 Employment of a government led organizational structure

The state facilitated model has played a crucial in ensuring the effective penetration of IT into the school education system. IT@School project is of a scale that involves the fulfillment of a range of government obligations. Securing official orders and mandate at various levels of implementation can consume crucial time and effort on the part of the implementing agency. With the government determining the pace of the initiative and the integration of stakeholders, the focus remains entirely on achieving the desired outcomes.

6.6 Expanding access to education

The introduction of digital curriculum into the school education system has been one of the remarkable achievements of the IT@ School project. The initiative aims at creating way for IT embedded education that will revolutionize the teaching and learning experience in government schools. One of the primary culminations of this intervention is foreseen to replace textbooks with a body of dynamic digital content that will be accessible through the extensive use of advanced technology.

With the availability of educational content online, the access to quality education can be widened to a significant extent. It can greatly improve the delivery of educational services in a time and cost effective manner. Delays in the distribution of textbooks, non-availability and high costs have remained some of the major issues that confront students and their parents/guardians on a day to day. IT@School has effectively addressed these challenges by harnessing IT to make educational resources easily accessible to students. Moreover, it has successfully created an environment with the support of the state government to transform classrooms into dynamic and rich media environments gradually reducing the dependency on textbooks and encouraging students to explore, think critically and evaluate independently.

However, a complete shift to IT embedded education depends on the extent to which the community is technology aware and well acquainted to its use and relevance in education. Moreover, such an intervention needs to be backed by proper financial and infrastructural support to ensure that its benefits are experienced by all sections of the society equally.

Financial Model

7. Financial Model

The funding pattern of a project designed along the scale of IT@School is significantly shaped by the IT scenario of the region. In the context of Kerala, prior to the initiation of the project, the technological environment that prevailed in schools was un conducive for the perpetuation of an IT-enabled education. As a consequence, IT-based incentivization of the process had to take into consideration a range of activities including; infrastructural development, capacity development, content development, e-governance and satellite based education at the school level.

The project underwent two important financial phases

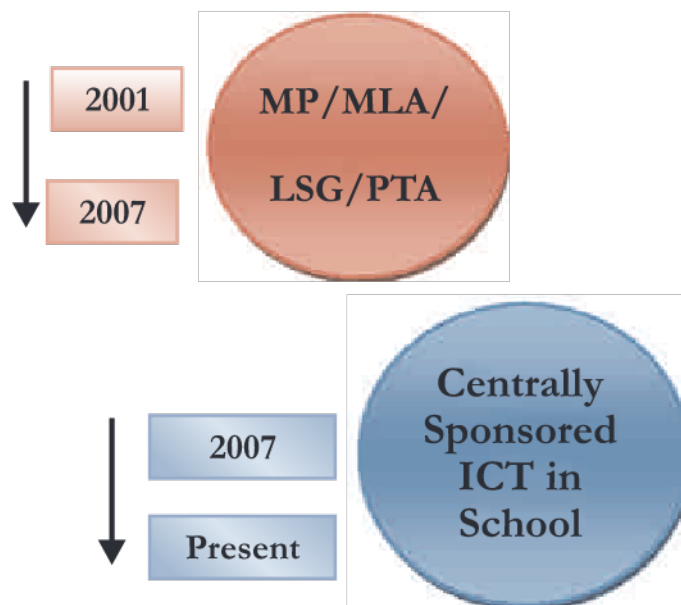


Figure : Financial Phases of IT@School
Source : IT@School, Kerala

During the first phase, the financial resources for procurement of hardware equipments were mobilized through the local area regional development funds of the MP and MLAs, Local Self help Groups and Parent Teacher Associations (PTAs). The MP/MLA funds were directly allotted to the respective schools and were not deployed through the project.

In the year 2007, IT@School was adopted as the implementation agency for the Ministry of Human Resource Development's centrally sponsored 'ICT in School' scheme. The scheme was launched in the year 2004 with the objective of providing computer aided education to Secondary and Higher Secondary Government and Government aided schools. Under the ICT in School scheme, 75 percent of the funds were sponsored by the central government and 25 percent by the state government.

Financial Model

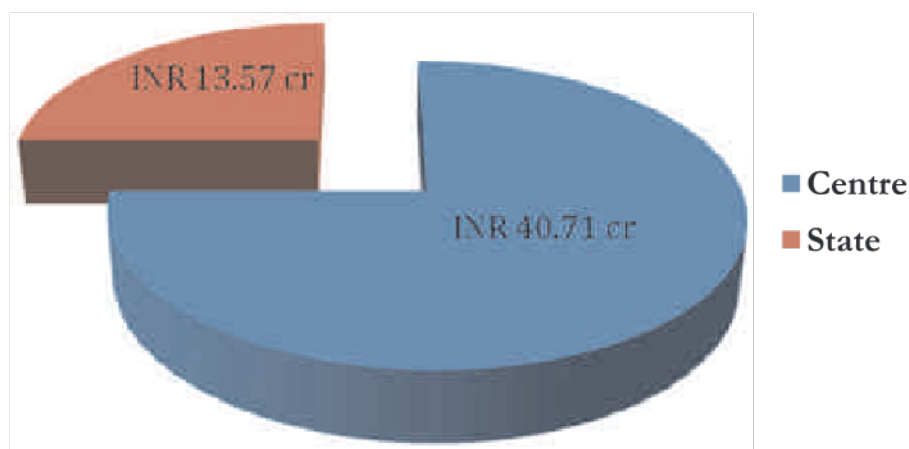


Figure : Budget Distribution between the Centre and State government for IT@School project

The procured funds were directed towards the enhancement of key activities including infrastructural development, capacity building, content development, e-Governance and satellite based education. Prioritization of the activities can vary depending on the context and local requirements. The below figure gives the prevailing financial matrix of IT@School.

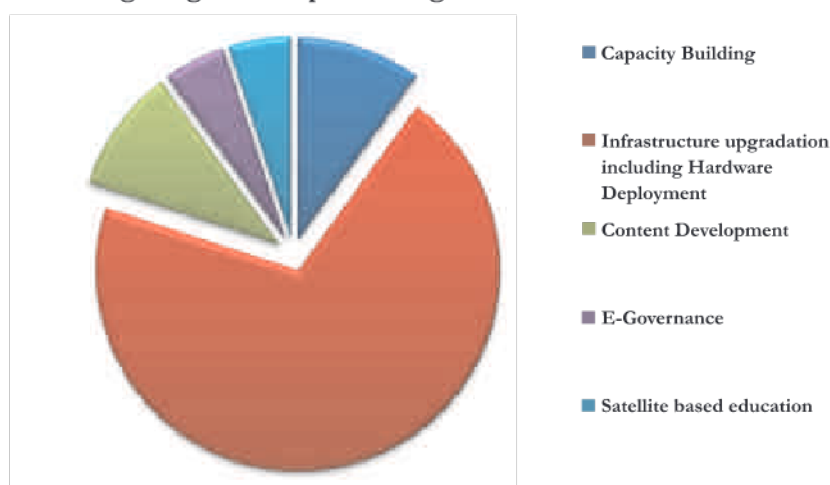


Figure : Break-up of the financial expenditure of the project

Under the ICT @School scheme, the project received a financial aid of Rs 1 lakh per school for 1016 schools for the period of 2007-2012 and for 3055 schools for 2008-2013.

IT@School is also recognized as the implementation agency for the Smart School scheme. A total fund allocated for the implementation of the scheme amounts to 1.25 crores for a period of 5 years. Under the Smart School scheme, 5 schools will receive a financial aid of Rs. 25 lakh to develop themselves into smart schools. IT@School can be posited as a financially sustainable model. Government support and assistance to the project has played a crucial role in ensuring the effective functioning of the initiative.

Financial Model / Potential for Replication

Sl. No.	Items	For 1016 Schools	For 3055 Schools	Total
1.	Hardware, Software (including Electrification, Hardware clinics) (Computer/laptop/DLP Projector etc.) and other software purchase	Rs.9.88 Cr.	Rs.29.68 Cr.	Rs.39.56 Cr.
2.	Content Development	Rs.1.12 Cr.	Rs.3.40 Cr.	Rs.4.52 Cr.
3.	Infrastructure Upgradation, EDUSAT facility & Internet	Rs.0.96 Cr.	Rs.2.89 Cr.	Rs.3.85 Cr.
4.	Monitoring & Capacity Building	Rs.1.46 Cr.	Rs.4.39 Cr.	Rs.5.85 Cr.
5.	IT Mela, IT Awards & Other best ICT Practices	Rs.0.13 Cr.	Rs.0.37 Cr.	Rs.0.5 Cr.
	Total	Rs.13.55 Cr.	Rs.40.73 Cr.	Rs.54.28 Cr.

Table Overall budget allocation towards the development of core activities of the project.

8. Potential for Replication

IT@School has over the past decade drastically transformed the face of school education in the state of Kerala. The project has institutionalized an educational arrangement that is playing an important role by preparing students as highly trained and skilled experts who can effectively meet the demands of a highly scientific and technologically complex world. The long term success of the project has been supplemented by a number of factors that lead to its sustainability.

8.1 Developing superior in-house capacities

IT@School is completely built on a model that advances in-house capacities. The network of District Coordinators, Master trainers, SITCs and SSITCs responsible for coordinating and facilitating the activities of the project at various administrative levels are not outsourced professionals but school teachers and students trained and capacitated to manage these roles with great efficiency and effectiveness. IT@School has also created a cadre of Master trainers who have been drawn from within the community. These Master trainers are class teachers equipped with advanced knowledge and expertise in ICT and have been capacitated to train teachers and students in ICT led education. Moreover, the ICT based content that is accessed by almost 1.6 million students of Kerala is also indigenously developed based on the collaborative efforts of Master Trainers, teachers and students.

The dependence on in-house capacities has proven to deliver far superior results against outsourced models that are based on large resource outlays. It has not only proven to be cost effective and operationally sound but has contributed to develop a system of public education less dependent on private actors. Under IT@School, teachers and students have the opportunity to explore their skills and capacities beyond their traditional roles. This has significantly contributed to their self development and enhanced their self esteem over time.

Potential for Replication

8.2 Integrating Government as the implementing agency

IT@School is mandated by the Government of Kerala. The government is involved in all crucial levels of governance. Activities related to content development, capacity building, infrastructural development, and technological enhancements are being undertaken by the government with the help of IT@School. This has to a great extent ensured the effective enforcement of all aspects of project as seeking the agreement of stakeholders for the fulfillment of the necessary functions was simplified under the auspices of the government.

8.3 Partnering with private players

Networking with private actors has expanded access to quality based IT education. This collaboration has played an important role in the successful initiation and sustenance of the project. IT@School has managed to avail students, teachers and school ICT based resources like computers, laptops and netbooks in collaboration with private actors. During the initial phase of the implementation, funding for operations were mobilized from private agents and institutions like Parents Teacher Association, MP/MLA funds and local self help groups. Apart from nationwide tendering process for the procurement of hardware, MP/MLA funds are also mobilized for the same. Private agencies are also involved in providing hardware facilities in schools. The partnership with private actors has facilitated to reduce the financial burden of sustaining the ICT based development of schools to a great extent.

8.4 Deploying Free and Open Source platforms

The use of FOSS has ensured that IT@School could effectively deploy its services on a large scale. Unlike proprietor based software which are expensive and restricted in use, free and open source software can be downloaded easily from the internet, customized and freely shared. FOSS has been used under the project to create, modify and share ICT based content across all schools. All activities of the IT@School are based on FOSS including training programs and their content, e-governance initiatives etc. The project is able to save almost Rs 11 crore every year because of the use of FOSS.

In view of the contributions of this innovative ICT enabled model of education, the Central Advisory Board of Education has recommended IT@School as a base model to be adopted by other states and educational boards. IT@School has been able to build a cost effective yet highly advanced model of education that has tremendous scope for replication. The project can be easily customized to suit the needs and requirements of any society however, on a pre-condition that the targeted community shares a common vision for ICT enabled transformation.

References

9. References

- Abdul Nasar Kaipancherry. Setting New Benchmark in ICT Education. 2012.
- Biju Prabhakar, Arun M. IT@School and Free Software in Education. Web on 12.06.2012. <http://marroncito.hipatia.net/index.php?title=IT@School_and_Free_Software_in_Education_-_Arun_M._Biju_Prabhakar&action=edit/>.
- Geraldine O Neill, Tim McMahon. Student-Centred Learning: What Does it Mean for Students and Lectures. 2005. <http://www.aishe.org/readings/2005-1/oneill-mcmahon-Tues_19th_Oct_SCL.pdf/>.
- Girija Krishnaswamy, Dora Marinova. FOSS in Education: IT@School Project, Kerala, India. Web on 12.06.2012. www.icfoss.org/ojs/index.php/foss/article/download/5/22
- Gumurthy Kasinathan. ICTs in School Education-Outsourced versus Integrated Approach. IT for Change. 2009.
- ICT, Education, Development and Knowledge Society. 2011. Web on 25.06.2012. <[http://www.gesci.org/assets/files/ICT,%20Education,%20Development,%20and%20the%20Knowledge%20Society\(1\)/](http://www.gesci.org/assets/files/ICT,%20Education,%20Development,%20and%20the%20Knowledge%20Society(1)/>)>.
- IT@School. Activity Report of IT@School Project-2010-11.
- IT@School. Activity Report of IT@School Project-2011-12.
- Michael Trucano et.al. Developing a National Educational Technology Policy. Web on 26.06.2012. <<http://blogs.worldbank.org/edutech/edtech-policy-database/>>.
- T. A. PAI Management Institute. IT@School: Excellence and Quality in Education-No Exemptions-No Excuses. 2010.
- U.R. Rao et.al. IT in Education Vision 2010: Report of the IT-Task Force. 2000.

Annexure - I

Interview questionnaire

Background

ICT in schools

1. What were the primary factors that influenced the introduction of ICT in education? What kind of constraints did this form of intervention facilitate to address in the education sector especially when the state of Kerala has successfully maintained a high rate of literacy as compared to other states?
2. Our research highlighted that prior to the introduction of IT@School, projects such as CLASS facilitated the integration of ICT into the school education system. Can you trace the introduction of IT into school education? What was the primary goal of these efforts?
 - i. What was the nature of the changes introduced in the education system under these projects?
 - a. What was the response of the stakeholders to these shifts?
 - b. How were the schools/teachers/students capacitated to incorporate these changes?
 - ii. What were the primary reasons for targeting government and government aided schools under the project? Are all such schools covered under the project? If yes, kindly provide relevant data.
 - iii. To what extent did the schemes fulfill the conditions that the State Government of Kerala was trying to achieve with the introduction of IT in education?
 - iv. What kind of gaps remained unaddressed under these projects that forced the state to remodel its approach with IT@School?
 - v. Why was the IT Task force constituted? What was the significance of the report presented by the IT Task force in the state government's plan to enhance the role of IT in education? Can you provide us a copy of the report?
 - vi. Can we have access to documents/reports/statistics to assess the initial phase of integrating IT into the existing patterns of education?

Annexure - I

IT@School

3. How is IT@School different from the previous efforts to integrate ICT into school education?
4. The project was initiated in three phases; IT in education (2001-2009), IT enablement of education (2009) and IT embedded education. What was the reason behind the adoption of this approach? (Impact study by TAMPI)
 - i. What were the major outcomes of the first phase?
 - ii. To what extent has the project managed to achieve the goal of IT enabled education?

Implementation strategy

Organisational structure

5. Besides the General Education Department of Kerala, are there any other key organisations/institutions/agencies involved in the project? Can you define their specific roles?
6. Can you outline the organizational structure of the project
7. Can you provide a break-up of the major tasks based on the organisational units? (state and

	Function	Personnel/Partners involved
i.	<i>Conceptualization</i>	
ii.	<i>Planning and decision making</i>	
iii.	<i>Implementation at the state and district level</i>	
iv.	<i>Monitoring and Evaluation</i>	

district level office)

8. The project depends on a strong network of Master Trainers, Master trainer coordinators and School IT Coordinators. What was the primary objective of the developing this network? Can you provide a break-up of the tasks performed by the individuals constituting this network?
9. What is the role of Regional resource centres and District Resource centres? How are they distributed across the state?

Financial model

Annexure - I

10. The project initially mobilized funds for the project with the help of LSG institutions and local area development funds of the MPs, MLAs and PTA's. To what extent these sources met the requirements of the initiative?
11. To what extent did the implementation of the ICT for School Scheme in 2007 impact the working of the project? What were the major developments with its enforcement?
12. IT@School is posited as a cost effective model. Can you describe the financial model of the project? What have been major overhead expenses?

Stakeholder/beneficiary engagement

13. Prior to the implementation of IT@School, was a baseline assessment of the context conducted?
 - i. If yes, what was the method of assessment and the key outcomes?
 - ii. If no, what were the key factors that facilitated the implementation of the project?
14. The project caters to multiple stakeholders including the General Education Department, schools, teachers and students. Are there other stakeholders involved? Kindly, elaborate their roles and responsibilities.
15. Did the process of stakeholder engagement confront challenges? If yes, what were the major challenges? If no, what facilitated the active participation and involvement of the stakeholders?
16. IT@School benefits more than 50 lakh students and almost 2 lakh teachers. How did the department initiate its engagement with the beneficiaries? Was the process facilitated by the IT campaign? If yes,
 - i. What were the main components of the campaign (total number of campaigns, duration, team and tools.)?
 - ii. Who were the targeted beneficiaries and what was the overall coverage?
 - iii. What were the visible outcomes of the campaign?
 - a. If no, what was the significance of the IT campaign?

Annexure - I

17. How many beneficiaries have been covered by the project till date;

Beneficiaries	Total coverage	
	In the year 2001	In the year 2012
Schools (Government and Government aided)		
Teachers		
Students		

Design

Software

- i. How long did the programme operate on a BOOT model? Our research reveals that the model was withdrawn due to its ineffectiveness. What were the major factors that led to its replacement?
- ii. How has the adoption of a Free and Open Software in 2005 facilitated the goals of the initiative? What has been the economic and technological impact of the FOSS model?
- iii. The project has developed its own operating system called IT@School GNU/Linux/Ubuntu.
 - a. What are the key components and features of this operating system? Who were the developers of this system?
 - b. In what ways does the system cater to the needs of facilitating ICT enabled learning in schools?
 - c. What kinds of challenges were faced during its operation?

Capacity building:

- i. Can you provide the basic design of training module for teachers and students in hardware and software components of the project?
- ii. What were the key objectives of the training session? How many teachers and students were targeted in the initial stage? Where there other stakeholders also involved?
- iii. What was the prescribed duration of the initial stage of training? Were these sessions integrated into the teaching hours? If not, when were these trainings conducted? How are these sessions organized in the current phase of the project and by whom?



Annexure - I

- iv. The project has emphasized on limiting the role of external agencies and specialists in training rather capacitating teachers as master trainers. What were the primary reasons for adopting this approach?
- v. What is the total budget allocated for training and capacity building?
- vi. Have you encountered any challenges while conducting these training sessions? If yes, what have been the major constrains?

Hardware and infrastructural upgradation:

- i. What are the basic hardware facilities that have been made available to schools under the project?
- ii. How is the hardware procured for the project?
- iii. What is the 'Hardware Clinic' programme?
- iv. During the initial phase, was it challenging to adequately meet the hardware requirements of all schools covered under the project? If yes, what were the major constraints and how were they overcome?
- v. Our research revealed that classrooms in government schools were electrified under a programme enabling teachers to use laptops, projectors and wireless internet in the classroom. When was the programme initiated? It is a part of the IT@School project? What were the key objectives?
- vi. Is the lack of adequate infrastructural facilities in government schools a challenge that confronts the effective implementation of the goals of IT@School? If yes, what have been the major concerns?

Technological enhancements

- i. Are the technological components of the project also catering to the needs of visually challenged and those areas with limited technological access?
- ii. IT@School project is the nodal agency for EDUSAT operations in state. How has this satellite based educational system facilitated ICT enabled learning?

Annexure - I

- iii. What have been the major software enhancements undertaken by the project? Have these been adopted to fulfill specific goals in the implementation of the project? If yes, what have they been?

Content development

- i. Amongst the highlighting features of IT@School is the idea of developing indigenous content against the use of outsourced content. What are the main factors that influenced the shift towards indigenous content development?(private actor involved INTEL)
- ii. How is the content developed? How many personnel are involved in the process and what are the key functions performed?
- iii. Our research reveals that teachers are also involved in the creation and development of educational content for IT@Schools. How are the teachers involved in this process? What have been advantages of the same?
- iv. What were the major challenges that constrained the effective fulfillment of this process?

Monitoring and evaluation

The project caters to the needs of a wide section of the population at the state and the district level based on an extensive arrangement of ICT enabled components. How are these activities monitored and by whom?

e-Governance and Administration

How has IT@School improved the administration and management of the school education system? What have been the key outcomes of this intervention?

Potential for replication

- i. What have been the major achievements of the project?
- ii. What are the pre-conditions that determine the sustainability of the initiative in the long run?
- iii. Are you considering technological enhancements in the software? If yes, what steps have been adopted and how will this improve the efficacy of the project?

Annexure - I

Teachers/ Master Trainers

18. Prior to IT@School, to what extent was IT used in the school education system? What are the major changes observed after the implementation of IT@School?
19. Did you face any difficulty in adapting to changes introduced following the implementation of IT@School?
 - a. If yes, what were the major challenges?
 - b. If no, what facilitated the effective integration of IT into traditional patterns of teaching?
20. Were you involved in the training and capacity building sessions under IT@School? If yes, can you explain the basic nature of the training provided? What was the duration of the training? Are you undergoing any training currently? If yes, how often are these organised?
21. What has been the major impact of ICT enabled education on the performance of the students?
22. (Master Trainers) What are the major functions as a master trainer?
23. (Master Trainers) What have been the major challenges that you face while training teachers and students? What efforts have been made to overcome these challenges?

Students

24. Since when have you been involved in computer based learning? How has it benefited your learning and understanding about subjects?

Annexure - II

No. ITS/2010/08/1368 (9) -2



STATE PROJECT OFFICE
IT @ SCHOOL PROJECT

(IT project under directorate of public instruction)

POOJAPURA P.O

THIRUVANANTHAPURAM-12

Ph: 0471-2529800 fax: 0471-2529810

E-mail : contact@itschool.gov.in

Dated: 16.08.2010

CIRCULAR

Sub:- IT@School Project- ICT scheme- Utilisation of funds issued to schools for electrification of classrooms and networking of computer labs- Reg.

Ref: This office Circular No ITS/2009/11/1225 (51) dated 30.11.2009

In continuation to the reference cited, the Project had allotted funds to Government High Schools, Government Higher Secondary and Government Vocational Higher Secondary schools in the state for electrification of classrooms and networking of computer labs as per the request received from the schools. The detailed list of schools and their requirements are available with the District Co-ordinators of the Project who has in turn issued specific instructions to the schools for the undertaking the activity. The Project had instructed the schools to complete the electrification and networking processes by the end of this month. In these circumstances, the following directions are issued to all the schools who have received the fund for electrification

1. The electrification and networking works has to be completed at the earliest and the schools are required to submit the Utilisation Certificate to the District Office of IT@School Project on or before 31st August 2010.
2. Those schools that are unable to complete the work within the last date specified above, are instructed to refund the fund allotted to the Project on or before 3rd September 2010.
3. In case wherein additional time is required beyond the last date specified, those schools are directed to forward a formal request to the Project on or before 31st August 2010, specifying the reason for which extension of time is sought as well as along with the scheduled date of completion of work.

Annexure - II

4. Those schools who fail to adhere to the instructions laid above, would be subsequently excluded from the ICT scheme and action would be taken against the school authorities for misuse / lapse of funds issued.



EXECUTIVE DIRECTOR

The Director of Public Instruction

The Director, Higher Secondary Education

The Director, Vocational Higher Secondary Education

} for information

The Regional Deputy Director of Higher Secondary Education

The Regional Deputy Director of Vocational Higher Secondary Education

All DDEs and DEOs (for information)

All Head Masters/ Principals concerned

All District Co-ordinators/Master Trainer Co-ordinators (for necessary action)

Annexure - III

GOVERNMENT OF KERALA

Abstract

General Education - Implementation of IT @ School Project - Sanction accorded -
Orders issued

GENERAL EDUCATION (D) DEPARTMENT

G.O. (RT) No.4518/2001/G. Edn, dated Thiruvananthapuram, 7.12.2001.

Read: 1. G. O.(Rt) 3031/2001/G. Edn, dated 6.8.2001

2. Report of the study conducted by Director of Public Instruction on the implementation of IT education in the states of Karnataka, Tamil Nadu and Andhra Pradesh.

ORDER

As per the Government order read above, Government had accepted in principle, the Project Report for the implementation of IT @ School Project for improving the quality of education at High School level with aid of Information Technology. Before implementing the Project, the Director Of Public Instruction was directed to conduct a study of the Computer Education Programme in the states of Tamil Nadu and Karnataka. Accordingly the DPI has submitted a study report in the reference read as 2nd paper.

The study has revealed that in these States, computer education has been introduced only in selective schools. The respective State Governments bear the entire expenditure in connection with this and the task of implementation of computer education including the preparation of curriculum content is established IT companies as per contracts awarded to them by the State Governments. It is also found that the IT @ School Project proposed for implementation in Kerala is distinct from the systems prevailing in other states for the following reasons :

1. The entire programmed would be decentralized with the involvement of Local Self Government as well as PTAs. It is envisaged to train the High School teachers to enable them to used computer as a curriculum aid for teaching the respective subjects. Hardware procurement and maintenance are decentralized to enable the schools to take advantage of government as well as private initiatives.
2. The entire programme is envisaged with minimum expenditure on the part of the State Government by way of budget provision. The Project envisages taking advantage of central funds, Malappuram/MLA funds, local collections, PTA funds, PD account funds and NRI Initiatives.
3. Computer is being introduces as part of the curriculum and as a teaching learning too. For this, all the High School teachers are to be trained and the programme is to be implemented with their help.
4. It is proposed to introduce Information Technology as part of the curriculum in all the High Schools of the State so that all the High School students of the State are provided with opportunities to learn Information Technology.
5. At the same time our Project had given enough scope and flexibility to allow private firms to tie up with the schools to introduce hardware as well as computer instruction. collecting the fees from the students stipulated by the Government.

Annexure - III

14

In the circumstances Government have examined the matter in detail and they are pleased to accord sanction for implementation IT @ School Project as approved in the Government Order read above subject to the following modifications.

1. The agencies which whom the schools have to tie up with, for IT education will be empanelled by Government in order to ensure quality, uniformity and reliability. The empanelment will be done by advertisement based on criteria such as cost, reputation of the agency, scope of operations, financial capacity, and experience in the field of education etc.
2. There shall be three categories of schools on the basic of student strength. There shall be one computer teacher each for Category A and B and 2 teachers for Category C schools to be provide by the agency for a period of 5 years.
3. There shall be minimum 4 periods per week, two for theory and two for practical.
4. The spare time outside school hours shall be utilized for the computer literacy activities (100% IT Literacy Campaign) among, other commercial activities.
5. The Computer teaching, for all students will be in English, though textbooks will be developed in Malayalam also for students who are weak in English.
6. No new posts will be created and the IT Professional required for the project will be taken on contract basis.

Sanction is also accorded for release of an amount of Rs. 25/- lakhs, for the initial activities of the Project including the setting up of the State Project Office, debiting the expenditure to the head of account 2202-02-004-98-plan in the current years Budget.

(By order of the Governor)
N. Ramakrishnan
Principal Secretary to Govt.

True Copy

Sd/-
Executive Director

Annexure - IV

**PROCEEDINGS OF THE DIRECTOR OF PUBLIC INSTRUCTION,
THIRUVANANTHAPURAM**

Sub:- IT@School Project- Guidelines for procurement of Computers and Hardware for schools using MP/MLA/LSG funds – Orders revised-Reg.

- Ref:- 1. G.O.(Rt.) 5120/2007/G.Edn. dated 9/11/2007
2. Minutes of Technical Committee meeting of IT@School Project held on 5/1/2011
3. Order No.NEP3/80281/07/DPI dated 08.03.2010.

ORDER NO.NEP3/80281/02/DPI DATED 23.02.2011

Based on the recommendations of the Technical Committee constituted vide reference 1st cited, in its meeting held on 5th January 2011 vide reference 2nd cited, the following orders are revised in connection to the Order mentioned as 3rd cited with respect to the minimum specification, maximum price and service conditions for the procurement of computers and hardware for schools using MP/MLA/LSG funds.

Minimum Specifications		
I	Laptop	All Inclusive Price (Rs.)
	Processor 2.0 GHz, with 45 nm technology, L2 cache 1 MB Chip set Intel/ATI/N-Vidia /SIS/AMD, Mother Board OEM Memory 2 GB or more DDRIII RAM -800 MHz (Zion,Umax, Kingston, Transcend, Corsair, Micron, Hynix, Samsung) OEMS can use memory of their choice, Hard Disk 160 GB, SATA, 5400 RPM, Display- 14" ,Active Matrix wide Screen without dead cells, 1200x800 WXGA,Graphics Intel-GMA / ATI-Radeon XPRESS / N-Vidia Geforce Optical Drive Integrated DVD Writer 8X,Integrated wireless. 802.11 b/g/n, and 10/100 Fast Ethernet,Speaker Integrated Stereo speaker. Interface-I/O Ports RJ 45, 3x USB2.0, VGA port for External Monitor, Mic In, Speaker/ Headphone Out, AC Adaptor Power 230V, 50 Hz AC Supply with rechargeable 6 Cell LI-ION Battery Pack, Battery Back up time 2 hours minimum. Additional items: Optical Scroll Mouse (USB),Carry Case, Warranty 3 Years On site Comprehensive including battery and power adapter .	19,750/-
II	Netbook	
	CPU 1.6-GHz Intel Atom N455, Operating System IT School Edu Ubuntu 10.04, RAM 1GB DDR3, Hard Drive Size 160 GB, Hard Drive Speed 5,400rpm, Hard Drive Type SATA , Display Size 10.1 Native Resolution 1024x600, Graphics Card Integrated Video Memory	13,000/-

Annexure - IV

	Shared, Wi-Fi 802.11b/g/n, Ports (excluding USB) Ethernet; Headphone; Kensington Lock; Microphone; VGA, USB Ports 3 Card Slots SD memory reader, Battery Backup time 6 hours minimum during normal operation, Warranty/Support 3 Years Comprehensive On site	
III	Multimedia Projector	
	Resolution SVGA (800x600), Brightness 2000 ANSI Lumens Aspect Ratio 4:3 ,Input Audio,VGA,S-Video, Composite A/V input to connect TV output, USB- for full function remote Output Audio out, Video out (Splitter attachment not acceptable)Remote Full Function Screen 6' x 4' Screen with Tripod Stand Accessories Audio, VGA and USB cables Warranty 3 Years Comprehensive On Site (Warranty for lamp - 90 days) with screen and stand.	24,000/-
IV	Handy Cam	
	Maximum Still Image Resolution (Photo Mode), Storage Media HDD (120GB) or Flash Card (64 GB), Optical sensor 1/6", CCD, colour Analog Video format PAL, Digital Video Format MPEG-2, Digital Zoom 2000 x (min), Optical Zoom 40 x, Zoom Adjustment Motorized drive OS support IT School Edu Ubuntu 10.04 , Battery Li-ion Rechargeable Power Adapter External, Connector type USB, Composite Video/Audio output, DC power input with necessary cables, drivers, utilities. Focus automatic, Stand Tripod, Carry Case To be Provided Warranty 3 Years Comprehensive On Site	23,000/-
V	Dot Matrix Printer	
	136 Columns, 24 Pin, 300 cps @ 10 cpi, Input buffer 64 KB, Parallel and USB interface, OS compatibility IT School Edu Ubuntu 10.04 USB data cable & Power cable suitable for 5/6 A, 3 pin Indian Socket, with Drivers for IT School Edu Ubuntu 10.04	9,000
VI	Mono Laser Printer	
	14 ppm, Print 600x600 dpi , A4 size, USB 2.0 interface, tray capacity 150 sheets, monthly duty cycle 5000 , USB data cable & power cables suitable for 5/6 A, 3 pin Indian Sockets, with drivers for IT @school Edu Ubuntu 10.04. Full toner (to print minimum of 1500 pages) must be provided along with the printer and facility to be provided to use refilled toner.	5,900
VII	Flat Bed Scanner	
	Optical Scanning Resolution 1200x1200 dpi, USB interface, 48 bit color, A4 size, USB 2.0 data cable & power cables suitable for 5/6 A, 3 pin Indian Sockets, Printer setup poster, reference guide and installation guide in CD, drivers for IT school Edu Ubuntu 10.04	4,000
VIII	UPS	
	Input:- Phase Single. Voltage – 140V – 270V. Frequency 50 Hz +/- 5% Output:- 600 VA 360 W Quasi Sine Wave, 230V+/-5%,4-8 ms transfer time, efficiency > 80%, change over to inverter-<140V & > 270 V, Output sockets – 5 Pin, 5 Amps – 3 Nos (suitable for Indian Power mains). Environment – 0-45 degree C, RH – 90%. 15-20 minutes back	2,200

Annexure - IV

	up with one PC + one TFT monitor.	
IX	Desktop PC*	
	<p>Processor—Intel Dual Core E5500 Processor 2.80 GHZ, Cache 2 MB L2 cache Chipset & Mother Board : Intel Chip set with Intel Original Mother Board Memory:2 GB RAM expandable to 4 GB Make: Zion,Umax, Kingston, Transcend, Corsair, Micron, Hynix, Samsung) OEMS can use memory of their choice Hard Disk: Min 250 GB, SATA Samsung, Seagate, Hitachi, Western Digital Optical Device: DVD Writer SATA. Monitor: 18.5" Wide Screen Cabinet: ATX/Mini ATX PS2/USB Key Board : Normal,104 keys, PS2/USB Mouse: PS2/USB Optical Scroll Mouse USB Ports: 2 Nos front side, 4 Nos back side. Ethernet Integrated 10/100/1000, OS Ubuntu 10.4 Warranty – 3 Years Comprehensive</p>	21,000
	* Laptops/ Netbooks are more preferred than Desktop PCs for distribution at schools owing to its huge advantages on space, power requirement, mobility etc.	
X	Other accessories	As per DGS&D rates
c.	Service conditions:	
1	All items mentioned above will have 3 year onsite warranty	
2.	Computers/laptops shall be loaded with Free Software OS (IT@School Edu-Ubuntu/ EduBoss). All other hardware should have their own drivers for above said drivers which shall be supplied along with the hardware	
3.	Any change in technical specifications, however minor it may be shall be informed to the directorate for obtaining its prior sanction before affecting the supply. However, supply of equipments with higher specifications at the quoted price shall be entertained.	
4.	The supplier shall demonstrate the performance of the computer systems to the satisfaction of School IT Co-ordinator (SITC) in charge of the school computer lab and HM/Principal.	
5	The following shall be clearly marked on the equipments using labels or indelible ink in the presence of school staff: <ul style="list-style-type: none"> ∞ The date of installation, ∞ Period of warranty, ∞ The details of service person 	
6	Supplier has to set up a call center/Telephone number to monitor, rectify and register all the calls from schools regarding hardware and software support arising after the supply.	

Annexure - IV

7	The response time for solving an issue with a Laptop / Netbook shall be a maximum of 2 working days and that of closing the issue shall be maximum 5 working days, failing to which, an amount of Rupees 100/- could be levied from the Vendor as Liquidated damages per day. In case of major replacement, the Vendor shall agree to resolve the issue and return the equipment to the individual within 20 working days.
8	The rates are inclusive of all applicable taxes.

IT@School Project had already entered in to an agreement for supply of desktop computers and accessories from M/s. Keltron that includes specific conditions for the establishment of infrastructure for service network. Hence it is suggested that priority may be given to M/s. Keltron at recommended rates base on above conditions. The toll free no. which M/s. Keltron has set up in this regard is 1800 425 9696 and the online registration service portal is <http://sc.Keltron.org> or available at www.itschool.gov.in. In case of purchase through Keltron, the payment shall be made within 30 days of supply and installation of items, delay in payment beyond this limit shall be a levy of 2% per month on the total value of work order. But the purchase can also be made through any other vendors satisfying the price, quality and service conditions mentioned above observing store purchase rules.

This is only an interim price and specifications are valid till revision.



Director of Public Instruction

To

- All District Collectors
- State Project Director, SSA
- Director, DVHSE
- Director, DHSE
- Director, SIETMAT
- Director, SIET
- All Deputy Directors of Education, All DEOs

Copy to:

- All MP's, MLA's and District Panchayats
- The Executive Director, IT@School Project
- All members of the Technical Committee

Annexure - V

**PROCEEDINGS OF THE DIRECTOR OF PUBLIC INSTRUCTION,
THIRUVANANTHAPURAM.**

Sub: - Report of Technical committee constituted to centralize the price, specification, quality and service conditions of computer and hardware purchase to schools using MLA/MP/LSG funds - interim report - recommendations-reg

Ref: - 1. G.O.(Rt.)5120/2007/G.Edn. dated 9/11/2007
2. Order No. NEP3/80281/07/DPI dated 7/12/2007 of DPI

ORDER NO. NEP3/80281/07/DPI Dated 08/03/2010

Based on the recommendations of the technical committee constituted vide reference 1st cited, the following minimum specification, pricing and service conditions shall to be observed on purchase of computer and hardware:

1. Desktop PC	
Processor - 2.6 GHZ, Cache 2 MB Chipset & Mother Board : Intel Chip set with Intel Original Mother Board or AMD chipset with Asus Mother Board Memory :1 GB DDRII RAM expandable to 4 GB Hard Disk : Min 160 GB, SATA, 7200 RPM Samsung, Seagate, Hitachi, Western Digital Optical Device : DVD Writer SATA Monitor : 18.5" Wide Screen Cabinet : ATX/Mini ATX PS2/USB Key Board : Normal,104 keys, PS2/USB Mouse : PS2/USB Optical Scroll Mouse USB Ports : 2 Nos front side, 4 Nos back side. Ethernet Integrated 10/100/1000 mbps	
Options can be:	
1.	Above configuration with Celeron or Sempron CPU 18000
2.	Above configuration with Dual Core / Core 2 Duo CPU 20000
1I. UPS	
Input:- Phase Single. Voltage – 140V – 270V. Frequency 50 Hz +/- 5% Output:- 600 VA 360 W Quasi Sine Wave, 230V+/-5%, change over to inverter-<140V & > 270 V . Battery charging – direct plugging. Out put control – with on/off switch. Output sockets – 5 Pin, 5 Amps – 3 Nos (suitable for Indian Power mains). Environment – 0-45 degree C, RH – 90%. 15-20 Minutes back up with One PC + One TFT Monitor, Warranty - Three year Comprehensive on site warranty including battery	2000

Annexure - V

III Laptop		
	<p>2 GHz , Intel/ATI/N-Vidia /SIS/AMD On OEM Mother Board, 1 GB DDRII RAM Expandable to 2 GB 160 GB, SATA, 5400 RPM 14.1" active Matrix wide Screen with out dead cells, 1200x800 WXGA, Intel-GMA/ATI-Radeon XPRESS/N-Vidia Geforce, Integrated wireless, Intel 802.11a/b/g, and 10/100 Fast Ethernet. Integrated Blue tooth, Integrated DVD Writer 8X, and Integrated Stereo speaker, Key Board with Touch Pad. Min 3 USB ports, RGB or video or VGA, Port for Microphone, stereo headphone & other standard features. Rechargeable Battery Pack Comprising of LI-ION battery, Charger/Adapter Voltage and capacity of battery pack to be indicated. carry case, Additional USB- optical scroll mouse.</p>	21500
IV Multimedia Projector		
	<p>2000 ANSI Lumen Resolution , SVGA , Aspect ration4:3, Contrast Ration 2000:1, RGB,S-Video, Composite Video, USB, RS232, Audio out, PC Compatible, Video IN/OUT, Video Out for monitor (splitter attachment not acceptable), Lamp warranty min 3 months or 90 days . 6' x 4' Screen with Tripod Stand.</p>	
	Maximum price	33000
V Printers		
1.	<p>Laser Printer 14 ppm, Print 600x600 dpi , A4 size, USB interface, with data cable & power cables suitable for 5 AMPs 3 pin Indian Sockets, with drivers for IT @school Linux / IT @ School EDU Boss</p>	5000
2.	<p>Multi Functional Printer :All in one(Print/Scan/Copy/FAX) laser print: First page out in < 10 secs,Print quality 600x600 dpi Print speed 20 ppm Copy: speed 20 cpm Multi copies - 90 Scan: Scan resolution(optical) - 600x600 Fax: A4, speed 33.6 KBPS</p>	15500
VI Handy Cam		
	<p>Size- Width >2" - 2.5"< , Depth >4 - 4.5 "< , Height > 2.5" - 2.7 "< Weight - < 10 Oz Sensor resolution: 680 Kpix (min) Media Type: HDD, Flash Card Optical sensor: 1/6", CCD, colour Analog Video format - NTSC Digital Video Format - MPEG-2 Digital Zoom: 3000 x (min) Memory / Storage - Hard Disk (60 GB), Memory Card 8 GB Optical Zoom : 60 x Zoom Adjustment - Motorized drive OS support : Windows, Mac Battery : Li-ion Rechargeable Power Adapter : External Connector type : USB, Composite Video/Audio output, DC power input with necessary cables, drivers, utilities. Focus : automatic and manual, Tripod extra.</p>	30000

Annexure - V

C. Service conditions:	
1.	The above prizes are all inclusive and all items will have 3 year onsite warranty
2.	Computers/laptops shall be loaded with Free Software OS (IT@School GNU/Linux, IT@School Edu BOSS or Edu Ubuntu). All other hardware should have their own drivers for above said drivers which shall be supplied along with the hardware
3.	Any change in technical specifications, however minor it may be shall be informed to the directorate for obtaining its prior sanction before affecting the supply. However, supply of equipments with higher specifications at the quoted price shall be entertained.
4.	The supplier shall demonstrate the performance of the computer systems to the satisfaction of School IT Co-ordinator (SITC) in charge of the school computer lab and HM/Principal.
5	The following shall be clearly marked on the equipments using labels or indelible ink in the presence of school staff: <ol style="list-style-type: none"> 1. The date of installation, 2. Period of warranty, 3. The details of service person
6	Supplier has to set up a call center / Telephone number to monitor, rectify and register all the calls from schools regarding hardware and software support arising after the supply.
IV. Other accessories	As per DGS&D rates

IT @ School Project had already entered in to an agreement for supply of desktop computers and accessories from M/s. Keltron that includes specific conditions for the establishment of infrastructure for service network. Hence it is suggested that priority may be given to M/s. Keltron at recommended rates base on above conditions. The toll free no. which M/s. Keltron has set up in this regard is 1800 425 9696 and the online registration service portal is <http://sc.keltron.org> or available at www.itschool.gov.in. In case of purchase through Keltron, the payment shall be made within 30 days of supply and installation of items, delay in payment beyond this limit shall be a levy of 2% per month on the total value of work order. But the purchase can also be made through any other vendors satisfying the price, quality and service conditions mentioned above observing store purchase rules.

This is only an interim price and specification for urgent requirement.


Director of Public Instruction

To

All District Collectors
State Project Director, SSA
Director, DVHSE
Director, DHSE
Director, SIEMAT
Director, SIET
All Deputy Directors of Education, All DEOs

Copy to: All MP's, MLA's and District Panchayaths
The Executive Director, IT@School project.
All members of the Technical Committee

Annexure - VI



PRESS RELEASE

07.01.2011

SPECIAL SCHEME FOR PROVIDING LAPTOPS AND NETBOOKS FOR TEACHERS AT MINIMAL PRICE

IT@School Project of Government of Kerala is about to launch a unique programme for providing laptops and netbooks to 50,000 teachers in the State, at the rate which is as less as one third of the existing market rates. The teachers would benefit the bulk purchase rate received for IT@School for procuring 10,000 laptops and 18,000 netbooks under ICT scheme for schools for which the national level tendering process was undertaken by KELTRON, the service provider. Teachers would be able to procure laptops/netbooks at a lower price than the existing market price ie at a rate of ₹ 17,770/- for a laptop (including the warranty for battery and power adapter) and a netbook at ₹ 11,450/- respectively, **effecting a lower price of as much as 37% and 36% when compared to market rates of ₹ 28,000/- and ₹ 18,000/-**. The Laptops which are powered with processors ranging from Celeron M 900 to Pentium Dual Core, would have 2 GB DDR 3 RAM, 160 GB Hard Disc and also a minimum backup of 2 hours. In case of Netbooks, the processor would be Intel Atom N455@1.66 GHz backed with 1 GB DDR3 RAM and 160 GB Hard disc with a backup time of upto 6 hours.

The Project has been instrumental in implementing various initiatives to fuel the ICT enabled education in the State. As part of this, schools have been provided with ICT equipments like laptops and projectors since 2008. Till 2009-10 over 7500 laptops have been provided to various schools in the state as part of "ICT in Schools Scheme", which is being implemented in the State. Over and above this, as many as 8000 Laptops and 6000 Netbooks would be provided to the schools this year. The new approach of using IT in teaching various subjects in the classrooms using laptops and projectors rather than in the conventional "Computer Lab "method has been well accepted by the teaching community. Still it is a fact that the number of laptops made available to schools in

Page 1 of 9

Annexure - VI

proportion to the number of students and teachers are often less, and this creates a situation wherein all teachers in the school are unable to make of these equipments to its full potential. There have been constant requests from the teachers as well as Teacher's Organisations that laptops may be provided to the teachers at lower rates, so that they are well equipped to make use of ICT in their teaching process. Based on this, the Directors Meeting in Education department chaired by Hon. Minister for Education had authorised IT@School Project to look into the possibilities of providing laptops to teachers on loan basis.

Bulk Purchase undertaken by IT@School Project

The figure below details the purchase of laptops undertaken by IT@School during 2008-2010.

Year	Number	Price received by IT@School (A)	Comparable DGS&D rate (B)	Difference (B-A)	Rate less than DGS&D rate (%)
2008-2009	3,900	₹20,000	₹33,166	₹13,166	39.7%
2009-2010	3,600	₹20,000	₹29,283	₹9,283	31.7%

The hardware purchase for schools initiated by IT@School Project is been undertaken by KELTRON through inviting a national tender under the watchful eyes of the Technical Committee of the Project which ensures quality products and service backup at a price which is much lower than the existing market rates. Moreover the use of Free Software provides financial benefits for the Project. There has been a demand from the teachers to avail these benefits, which were expressed during the IT training programmes. The teachers could also enquire on possibilities of purchasing these equipments upfront, without the need for availing any loan.

Hardware Purchase of 2010-11

For IT@School Project, KELTRON this year has invited national tender for purchase of 10,000 laptops and 18,000 Netbooks. The rates quoted by the companies who secured the first 3 places in the tender after technical evaluations are as below;

Annexure - VI

Laptop		Netbook	
Company	Rate(including Tax)	Company	Rate(including Tax)
HCL (L1)	₹18,488	HCL (L1)	₹11,913
RP Info System (L2)	₹19,757	RP Info System (L2)	₹12,474
WIPRO (L3)	₹20,049		

L1 had quoted the lowest rates for distribution of the equipments in accordance to the terms and conditions laid in the tender and the other two firms (L2 & L3) had agreed to provide the equipments at the rates quoted by L1 and hence the supply order was distributed among them in a fixed proportion. IT@School is procuring these at a rate of ₹ 19,250/- per Laptop and ₹ 12,500/- per Netbook, which includes the Service charge payable to KELTRON, the Solution Provider which is ₹ 762/- and ₹ 587/- respectively. Teachers could buy these equipments at a lower rate of ₹ 17,770/- and ₹ 11,450/- respectively which excludes the service charge of KELTRON, yet they could avail all service benefits offered.

Technical Specifications

1. Laptop (Price - ₹ 17,770/-)

Company & Model	HCL ME51	WIPRO EGO	RP Info System Chirag - Power Play 14 D 22
Processor	Intel Celeron M900, 2.2 GHz, 1 MB L2 Cache 45nm		Pentium Dual Core T4400 @ 2.2 GHz, 1 MB L2 cache
Others (Common)	Chipset -Intel PM 45 , OEM Mother board, RAM-2GB DDR3, 800 Mhz, HDD- 160 GB SATA, 5400 rpm, Display- 14.1" , Integrated DVDRW, Integrated Wireless 802.11 b/g/n , Battery backup time - 2 hrs minimum. 3 years onsite comprehensive warranty including Battery and Power Adaptor.		

Annexure - VI

2. Netbook (Price - ₹ 11,450/-)

Company & Model	Specifications
1) HCL ME L08	Processor - Intel Atom CPU N455 @ 1.66 GHz 512 KB L2 cache, RAM-1 GB DDR3, Hard Drive - 160 GB, Display size- 10.1", Graphics card-Integrated Wi-Fi- 802.11 b/g/n , Card slots- SD memory reader Battery back up time - 6 hrs minimum.
2) RP Info System Chirag- Power Play-10 MN34	3 years onsite comprehensive warranty including Battery and Power Adaptor.

Highlights of the Special scheme offered to Teachers

1. Teachers would be able to procure laptops/ netbooks at a price which was obtained through the bulk purchase process, ie at a rate of ₹ 17,770/- for a laptop (including the warranty for battery and power adapter) and a netbook at ₹ 11,450/- respectively, **effecting a lower price of as much as 37% and 36% when compared to market rates of ₹ 28,000/- and ₹ 18,000/-.**
2. Teachers would get the price lower than the rate given for supply in schools (ie an amount of ₹ 1,480/- less for a laptop and ₹ 1,050/- less for a netbook.)
3. Under normal purchases, the laptop/ netbook and its accessories are covered under warranty for a period of one year only. But under this scheme, all the equipments are ensured with a 3-year warranty including for the battery and power adapter- a unique facility provided to IT@School purchases only.
4. Teachers would also be given an opportunity to physically verify and select the required equipments at a convenient location in their district.
5. The laptops and netbooks which would be provided to the teachers would be pre-loaded with IT@School Edu Ubuntu, Various office packages, graphics applications, educational software etc.

Who can apply?

Head Masters / Principals and Teachers from the Government Schools and Aided Schools in the State could procure laptop/s netbooks using this scheme. The Head of the institutions should also certify that the teacher has received training in IT and also uses IT in his/her classroom for teaching. Teachers of Lower Primary and Upper Primary sections who are yet to receive IT training could also avail this facility, provided they are required to submit an Undertaking stating that they would be trained in IT before June 2011.

Annexure - VI

Moreover the applicant should also produce an undertaking stating that the laptops / netbooks thus purchased should not be used for any other purpose and also would not be sold to anyone. This scheme would be open to 50,000 teachers on a first come first serve basis, that also upto a maximum of 4000 per district.

Responsibility of IT@School Project

The prime responsibility of IT@School Project is to give a common platform for the shortlisted companies and teachers who intend to buy laptops/ netbooks. The facilities available at the District Resource Centers of the Project would be made use of for this purpose. The Project would specify the maximum amount to be collected from the teachers, the minimum specifications required for the equipments, service terms and conditions, software and applications to be installed etc. IT@School Project would not bear the responsibility for any other matters including that of any financial transaction or selection of any particular brand of equipment to the teachers etc.

Responsibility of the Companies

The companies should fully comply to the terms and conditions specified by IT@School Project including the minimum specification details and rates provided by them to KELTRON under ICT in School Scheme and also in terms of after sales service conditions. The firm should submit an undertaking in this regard to the Project (Annexure-2). The details pertaining to service and maintenance including warranty for 3 years, support mechanism like call center / portal for reporting of issues or complaints etc should be provided to the teachers along with the equipments. The firms could undertake promotional activities on their expense, if they feel there is a need for providing their products to more number of teachers. It is their responsibility to inform the Project if they are engaging any kind of channel partners for distribution. Even in that case, the warranty has to be provided by the companies themselves directly. The firms should ensure that their products are delivered to the teachers within one month of the receipt of the advance amount. The equipments could be delivered directly to the Teachers or through a common location in a district.

Responsibility of the Teachers

Teachers who plan to buy Laptops/ Netbooks under this scheme should register online within the stipulated time. Post this, they could participate in the Road shows which would be arranged at the District Resource Centers of IT@School Project to physically verify and select the equipments, if required. Once they make a final selection

Annexure - VI

of particular equipment, an advance amount of ₹ 1,500/- has to be provided to the firm. The balance amount could be paid to the firm at the time of delivery of the item at the District Office of the Project.

The teachers should bring two copies of the attested document from their HM/Principal (Annexure-3) while coming to attend the road shows. The District Co-ordinator of the Project would verify the document and one copy of the same would be handed over to the firm, while retaining the other one at the District Office. It is the sole responsibility of the teacher to inspect the quality of the product delivered to them. They should use the equipment only for their self / academic purposes and not for any other purposes including selling the item. Only one item (1 laptop/netbook) would be provided to the individual teacher. In case of any support issue, the teacher has to contact the vendor directly, at the given number / address / email and IT@School will not interfere in it similar to the process undertaken in terms of purchase for schools.

Schedule of events

1)	Publishing of schedule of events.	January 8
2)	Receipt of online applications from teachers who are interested to purchase the equipments (Application form- Annexure-1)	January 15-25
3)	District wise Road show	January 25- February 10
4)	Collection of Advance amount / orders	January 25- February 10
5)	Distribution of equipments	March 1-31

Annexure - VI

Format of Online application for preliminary screening

District :

Educational Dist.

School :

Name	Age	Category

Address :

Mobile No. :

e-mail Address :

➤ IT knowledge : Yes No

➤ Whether using Computers in class room Yes No

➤ Interested in knowing more about particular model
(Can select one or more)

Laptop → Net book →

➤ Other remarks/comments (optional)

Certify that once purchased I will use this laptop or net book exclusively for personal use.

Page 7 of 9

Annexure - VI

UNDERTAKING BY VENDORS
(To be taken `100 Stamp Paper)

We ensure that we will deliver the equipments to teachers with the same specification and service conditions offered to KELTRON as given in ICT in School Scheme tender floated. (Annexure – 1).

We will adhere to the Schedule and conditions given in Circularby Executive Director, IT@School Project.

We agree that in case of any dispute, Principal Secretary, General Education Department will be the final authority to resolve this.

Signature:

Address of Vendors:

Annexure - VI

CERTIFICATE

I hereby certify that Sri/Smt.....of
.....School has undergone IT
Training and is using IT in the class room transaction*. This certificate is issued for availing
the laptop under the special scheme.

Date :

Signature :

School Code :

(Office seal)

For office use only

Recommended

No recommended

DISTRICT CO-ORDINATOR
IT@SCHOOL

* For LP/UP teachers who haven't got IT Training, it may be written as "has agreed to
attend ICT training before June 2011".

Annexure - VII

PROCEEDINGS OF THE DIRECTOR OF PUBLIC INSTRUCTION, THIRUVANANTHAPURAM

Sub:- General Education Department - Guidelines for procurement of ICT equipments for schools using various schemes – Orders revised-Reg.

- Ref:-
1. GO (Rt) 5120/2007/G.Edn. Dated 9/11/2007
 2. Order No.NEP3/80281/02/DPI dated 23.02.2011.
 3. Minutes of Technical Committee meeting of IT@School Project held on 13.02.2012

ORDER NO.NEP3/80281/07/DPI DATED 15.02.2012

In order to ensure that quality ICT equipments with necessary software and applications are supplied to schools in a systematic and meticulous manner, Vide G.O read as first cited had constituted a Technical Committee to review and fix the minimum specification and maximum price with necessary service conditions for procurement of ICT equipments for schools in the State. Based on the recommendations of the Technical Committee thus constituted, in its meeting held on 13th February 2012 vide reference 2nd cited, the following orders are revised in connection to the Order mentioned as 3rd cited with respect to the minimum specification, maximum price and service conditions for the procurement of computers and hardware for schools using various schemes including Local Area Development funds of MLAs & MPs, Plan funds of Local Self Government institutions etc.

1. Desktop Computer * – Maximum Price: Rs. 22,400/- (All Inclusive)	
(Minimum Specification)	
Processor	Dual core,3.1 GHz, Cache 3 MB, Number of Cores to support 4 Threads
Mother board	Intel Chip set with Intel Mother Board or AMD chip set with ASUS mother board, with integrated Graphics, 10/100/1000 Ethernet, Data and power cable for HDD and DVD. Computer manufactures can use their own OEM board.
HDD	500 GB SATA 7220 rpm (Make - Seagate, Maxtor, Hitachi, Samsung, Western Digital)
Monitor	18.5" WIDE WXGA (1280x768) (Make - LG, Samsung, Aoc, Dell, Acer, Benq, HP)
Cabinet	ATX/ Mini ATX (Prime Source, Mercury, Umax , iBall ATX / MINI ATX Cabinet, with two SATA connectors, (ISO certified SMPS and connectors of industrial standard). OEMs can use their own cabinet and power supply)
CD drive	DVD Writer (LG, Samsung, Sony)
Memory	4 GB DDR3 (1333 MHz) (Make - Zion, Umax, Kingston, Transcend, Corsair, Micron)
Mouse	USB Optical Scroll (Make - Logitech, Samsung, Microsoft, Acer)

Annexure - VII

Key Board	USB Key Board (Make - Logitech, Samsung, Microsoft, Acer)
Graphics & Audio	Integrated
10/100/1000 Ethernet	Integrated
Speaker	Head Phone with Mike- (Make - Logitech, Creative)
Cover and Pad	yes
Warranty	3 Years On site Comprehensive
Operating System	IT@School Edubuntu (All necessary drivers must be provided in CD Media)

2. Laptop Computer with additional Keyboard & Mouse

– Maximum Price : Rs.23,300/- (All Inclusive)

(Minimum Specification)

Processor	Latest Generation Dual Core 2.0 GHz, total cache 3 MB, Cores to support 4 threads , TDP - 35 W (Maximum) or 32 nm technology
Chipset	Intel/ATI/N-Vidia /AMD
Mother Board	OEM
Memory	2 GB or more DDR3-1333 MHz (Make - Zion, Umax, Kingston, Transcend, Corsair, Micron)
Hard Disk	250 GB, SATA, 5400 RPM
Display- 14 "	Active Matrix wide Screen without dead cells, 1200x800 WXGA,
Graphics	Intel-GMA / ATI-Radeon XPRESS / N-Vidia Geforce
Optical Drive	Integrated DVD Writer 8X
Net work Connectivity	802.11 b/g/n, and 10/100/1000 Fast Ethernet
Speaker	Integrated Stereo speaker.
Interface-I/O Ports	RJ- 45, 3x USB2.0, VGA port for External Monitor, Mic In, Speaker/ Headphone Out, DC In for connecting AC Adaptor
Power	230V, 50 Hz AC Supply with rechargeable 6 Cell LI-ION Battery Pack
Battery Backup time	Minimum 2 Hours under normal operation
Additional items	Optical Scroll Mouse (USB),Key Board (USB) (Make - Logitech, Samsung, Microsoft, Acer)
OS	IT@School Edubuntu
Warranty	3 Years On site Comprehensive including battery and power adapter.
Carry Case	Back Pack of standard quality
Accessories & other items	Drivers for IT@School Edubuntu. All Drivers shall be provided in CD media

3. Multi Media Projector – Maximum Price : Rs.22,000/- (All Inclusive)

(Minimum Specification)

Native Resolution	XGA (1024x768)
Brightness	2500 ANSI Lumens
Aspect Ratio	4:3 and 16:9 compatible
Input	VGA,S-Video, Composite A/V input to connect TV output, USB

Annexure - VII

Output	Audio out , Video out (Splitter attachment not acceptable)
Remote	Full Function with mouse control
Additional USB port	Optional - for accessing data from pen drive directly
Accessories	Audio, VGA and USB cables
Warranty	3 Years Comprehensive On Site (Warranty for lamp - 1 Year)

4. Multi Function Mono Laser Printer– Maximum Price : Rs.7,750/- (All Inclusive)

(Minimum Specification)

Print/Scan/Copy Speed	18 ppm
Effective output	600x600 dpi
Memory	8 MB
Duplex	Manual
Paper input capacity	150 Sheets
Monthly duty cycle	5000 Pages
Media Size	A4
Starter Toner Yield	700 Pages
Warranty	3 Years Comprehensive On Site, including fuser unit
OS Compatibility	IT @School Edubuntu
Interface	USB
Accessories, Software & Other items	USB data cable Power cable suitable for 5/6 A, 3 pin Indian Socket. Drivers for IT@School Edubuntu All drivers must be provided in CDs

5. 3KVA UPS With Galvanic Isolation (built in isolation transformer) – Maximum Price: Rs.43,000/- (All Inclusive)

(Minimum Specification)

Input	
Phase	Single
Frequency	50Hz +/- 5%
Voltage	160 V-260 V AC
OUTPUT	
Phase	Single
Wattage	2100W
AC Voltage	220 V +/- 5%
KW Rating	2100W (0.70 times of KVA rating)
Waveform	Sine Wave
Frequency	50Hz +/- 1 Hz
Transfer time, if applicable	< 6 ms
Power Factor	0.7 Lagging (greater preferable)
Efficiency	85%
APFC	Needed

Annexure - VII

Change over to inverter	<160 V and >260 V
Protection:	
Output	Over Voltage, Overload(cut off at 110%), Short Circuit/RF, Spike/surge
Battery	Under voltage; Cut off at 1.8V/cell
Visual Indication	Mains on, UPS on, Fault & Overload, Battery low
Audio Indication	Low battery/overload indication - Buzzer Change over to Inverter - Buzzer
Battery Charging	6 to 8 hours
Output Control	With On/Off Switch
Environment:	0-45% C, RH 90%
Battery:	SMF (4800 VAH) Maximum no of batteries - 8 Nos
Battery make:	Rocket\Panasonic\Amron\Exide\AMCO
Required	Operating manual and warranty card
Approvals	Type Approval test certificate of National Agencies ERTL, ETDC and SAMEER for the same model
Warranty	3 Years Comprehensive On Site including Battery

	* If sufficient Desktops are available, Laptops are preferred to Desktop PCs for distribution at schools owing to its huge advantages on space, power requirement, mobility etc.	
X	Other accessories	As per DGS&D rates
c.	Service conditions:	
1	All items mentioned above will have 3 year on-site warranty	
2.	Computers/laptops shall be loaded with Free Software OS (IT@School Edubuntu). All other hardware should have their own drivers, which shall be supplied along with the hardware	
3.	Any change in technical specifications - however minor it may be- shall be informed to the directorate for obtaining its prior sanction before affecting the supply. However, supply of equipments with higher specifications at the quoted price shall be entertained.	
4.	The supplier shall demonstrate the performance of the computer systems to the satisfaction of School IT Co-ordinator (SITC/HITC) in charge of the school computer lab and HM/Principal.	
5	The following shall be clearly marked on the equipments using labels or indelible ink in the presence of school staff: <ul style="list-style-type: none"> • The date of installation, • Period of warranty, • The details of service person 	
6	Supplier has to set up a web based portal along with a call center/Telephone number to register, monitor and rectify all the calls from schools regarding hardware and software support arising after the supply.	
7	The response time for attending an issue with the above hardware equipments shall be a maximum of 2 working days and that of closing the issue shall be maximum 5 working days, failing to which, an amount of Rupees 100/- could be levied from the Vendor as Liquidated damages per day, subject to a maximum value equal to 10% of the product value. In case of off-site maintenance, stand by unit shall be positioned at the site.	

Annexure - VII

8	The rates are inclusive of all applicable taxes.
---	--

Vide Govt. Order No. GO (Rt). No.4795/2008/G.Edn dtd 30.10.2008 M/s KELTRON, a state owned Public Sector Undertaking, has been identified as the Total Solution Provider for all ICT hardware procurements for schools in the State. On the basis of this, IT@School Project under General Education Department, Govt. of Kerala, has already entered in to an agreement with M/s. KELTRON for supply of these equipments through a national tendering process. This agreement includes specific conditions for the establishment of infrastructure for service network. The price advantage received through this bulk procurement process is thus available for all procurements for schools. Hence it is suggested that preference may be given for procurement through M/s. KELTRON at recommended rates based on the above conditions. But the purchase can also be made through any other vendors satisfying the price, quality and service conditions mentioned above observing store purchase rules and in such cases the procuring authority shall ensure the compliance in full.

This is only an interim price and specifications are valid till revision.



Director of Public Instruction

To

All District Collectors
All Directors of General Education Department
(SSA, SCERT, HSE, VHSE, SIET, SIEMAT, KSLMA, KSMSK)
Directors of Panchayats and Urban Affairs
All Deputy Directors of Education, All DEOs

Copy to:

Secretary, General Education Department (with c/l)
Principal Secretary, Local Self Government Department (with c/l)
Secretary, Planning Department (with c/l)
All MP's, MLA's and Secretaries of District Panchayats
The Executive Director, IT@School Project
The Managing Director, KELTRON.
All members of the Technical Committee

List of Workshops Conducted

1. Video Conference On NABH & NABL Accreditation of Public Health Institutions & Integration of Medical Education with Primary and Secondary Health Care [Jan 05, 2013]
2. Workshop on Innovations in association with RCVN Noronha Academy (ATI, Bhopal) at Bhopal [Dec 18-19, 2012]
3. Two - day Workshop on BOSS / GNU Linux (Open Source Software) – In association with C DAC, Hyderabad & District Administration, Visakhapatnam [Dec 21-22, 2012]
4. Mid Career Training For Senior State Administrative Service Officers Of Madhya Pradesh On 18th/19th/20th Dec 2012 At Rcvn Noronha Academy
5. 87th Foundation day Workshop on Innovations for All India Service Officers: ATI Mysore [Dec 05, 2012]
6. Workshop on Bio Digester Technology on Human waste by DRDO: Municipal Office Mysore [Dec 05, 2012]
7. Workshop on High Modular Rate Digester for Solid waste Garbage Disposal: Municipal Office Mysore [Dec 05, 2012]
8. Session on Solid Waste Management [Nov 24, 2012]
9. Workshop on "Innovative practices in Education" in association with Government of Andhra Pradesh on 09th & 10th of Nov 2012 at Visakhapatnam, Andhra Pradesh
10. 1 day Seminar on Best Practices for the All India and Group A service officers of 2012 Batch on 31st Oct 2012
11. 1 Day Consultative Session On "Mental And Neurological Disorders Among The Elderly And Primary Healthcare: Exploring Integration And Identifying Effectiveness" [Oct 19, 2012]
12. Half-day Programme on Innovative Practices" [22nd Sep, 2012]
13. Workshop on Preparing the Ground for Sharing India's Experience in Public Administration [Aug 23, 2012]
14. Two Day National Workshop on Best Practices in Health Sector on 27th & 28th of Aug 2012 at Bangalore, Karnataka
15. Two day workshop on "Innovations in Health Care" at IMG, Kerala: 23-24 July, 2012
16. Two day Workshop on Innovations in Preservation of Public Properties/Land at IMG, Kerala: 19-20 July, 2012 & Field Visit to Kerala "Akshaya" electronic service centre model on 21 July, 2012.
17. One day Workshop on Best Practices in Health Sector in association with the Government of Karnataka (ATI, Mysore) on 9th of July, 2012 at Dharwad Karnataka
18. Two day Workshop on 16-17 Jun 2012 at Lions Aravind Institute of Community Ophthalmology (LAICO), Madurai, Tamil Nadu.
19. One day Seminar on Best Practices for IAS Probationers 2011 batch by CIPS, in association with LBSNAA: 4 Jun 2012
20. Two day Workshop on Integration of Medical Education with Primary, Secondary and Tertiary Health Care In partnership with CMC, Vellore on 9th & 10th of April, 12 at CMC, Vellore, Tamil Nadu.
21. Two-Day Workshop on "Innovations for Quality Education, Sanitation, Health and Hygiene" in Collaboration with Government Of Bihar at Chandragupta Institute of Management Patna, on 22nd & 23rd February, 2012. Two-Day Workshop on Innovations in Public Service Delivery & Administration for District Collectors of Select States, 15th & 16th February, 2012 at Administrative Staff College of India, Hyderabad
22. Knowledge Management and Documentation Skills Training for Public Servants at Thiruvananthapuram, Kerala [Feb 06 & 08, 2012]
23. Workshop on Innovations in Health Care & Urban Governance at Thiruvananthapuram, Kerala [Feb 03-04, 2012]
24. Workshop on Innovations in Agriculture, Rural Development, Urban Governance and Health at Bangalore, Karnataka [Jan 20-21, 2012]
25. Workshop on Innovations in Health & Education [Nov 17-18, 2011]
26. Workshop on Health Sector Innovations [Aug 28, 2011]
27. Workshop On Sharing Experiences On Innovations In The Elementary Education Sector [Aug 20, 2011]
28. Workshop on Health Sector Reforms [May 03, 2011]
29. Workshop on Elementary Education and Health in Patna, Bihar [Apr 29-30, 2011]
30. Workshop on Innovations in Elementary Education [Feb 18, 2011]
31. CIPS Workshop on Innovations in Urban Governance at Shimla
32. CIPS Workshop on Innovations in e-Governance at ASCI on June 10-11, 2011

About CIPS

Government of India have set up the Centre for Innovations in Public Systems (CIPS) in May 2010 as an autonomous body within the campus of the Administrative Staff College of India (ASCI), Bella Vista, Hyderabad. This centre is set up in pursuance of the recommendations of the XIII Finance Commission.

In line with its mandate and objectives, **CIPS is providing assistance** to various States and Union Territories in developing policies for promoting an innovative culture for transforming creative ideas into sustainable practices for improving service delivery. The focus areas for CIPS are education, health, e-governance and urban governance.

CIPS has conducted workshops on innovations in Health-care, Education, e-Governance, Agriculture, Rural Development and Urban Governance at various locations including Hyderabad, Visakhapatnam, Delhi, Patna, Shimla, Goa, Bangalore, Bhopal, Thiruvananthapuram, Mussoorie, Vellore, Madurai and Dharwad with active participation from civil servants, leaders of innovations and other stakeholders in promoting innovations in the public systems. CIPS is also bringing out edited proceedings of these workshops and is following up further action with state governments.

CIPS has established strong linkages with the states of Andhra Pradesh, Bihar, Madhya Pradesh, Punjab, Haryana, Meghalaya Assam, Gujarat, Maharashtra Himachal Pradesh, Kerala, Karnataka & Goa. A number of programmes have already been conducted in these states. CIPS is also in the process of establishing linkages with Jammu & Kashmir. In addition, CIPS has been strongly supporting the training programmes of LBSNAA, ATIs of Karnataka, Kerala, Madhya Pradesh and is also proposing to link up with the ATIs of Haryana and Arunachal Pradesh.

CIPS has conducted programmes in association with CMC, Vellore & Aravind Eye Care System, Madurai, Tamil Nadu, NIMHANS, Bangalore, CDAC, DeitY, GoI, CDoT, New Delhi and South Asian Cochrane Centre of CMC, Vellore.

The other organizations that CIPS is planning to establish linkages are the Mahatma Gandhi Institute of Medical Sciences, Sevagram, Wardha, NeGD, GoI Karnataka Knowledge Commission, Bangalore.

CIPS has entrusted documentation of some of the innovative/best practices to ASCI, Hyderabad, One World Foundation, New Delhi, Access Health Care of ISB, Hyderabad, Medium Health Care Consulting, Hyderabad. CIPS has further entrusted studies to **Dr. Amar Jesani, Editor, Indian Journal of Medical Ethics and Trustee, Anusandhan Trust, Mumbai** as also **Dr. (Prof.) Ranjit Roy Chaudhary, President, Delhi Society for Promotion of Rational Use of Drugs, New Delhi.**

CIPS has already prepared a database on Innovations/best practices and these are available on CIPS website: www.cips.org.in

Centre for Innovations in Public Systems (CIPS)

ASCI, Bella Vista, Raj Bhavan Road

Hyderabad - 500 082, Andhra Pradesh, India

Phone: +91 40 66533000/6653 4260/Fax: +91 040 66534342

E-mail: chakrapani@asci.org.in