Subhrankar Mukherjee *PhD, MBA*
President
Society for Appropriate Rural Technology for Sustainability
P6 Cluster 2, Purbachal, Salt Lake Calcutta 700 097, INDIA.
Telephone: +91 (033) 2335 9812 *Mobile*: 93392 59812
e-mail: subhrankar@gmail.com

September 27, 2004.

Dr. (Mrs.) Zarin P. Dadina
Medical Director,
SABERA FOUNDATION
Vill. : Gazipur, Dey's Estate
P.O. : Kanganberia – 743503
P.S. : Bishnupur, 24 Pgs.(S), W.B. INDIA.

Dear Dr. (Mrs.) Dadina,

Sub: **Multimedia Facility for children - 'Plan of Work'**

I am writing this letter following our discussions at SABERA Foundation on Monday, September 27, 2004 – the objective being to explore ways of improving the utilization of the impressive computer facilities that have already been installed at your premises.

Let me first say that I would be very interested in being involved with this community project, which (a) will provide access to a multimedia facility for the children of the community in general, *and the girl child in particular*, with the concomitant benefits and advantages that accrue from such a vibrant and interactive educational program, and (b) truly empower the children of this community - *especially the girl-child* - and promote self-confidence, self-expression and assertiveness amongst that segment of society which is intrinsically one of the most disadvantaged.

I have worked on edutainment products for children in the past, and I believe that we are equipped and have the capability to set up a state-of-the-art computer-based, multimedia center for children, *especially for the girl-child*, as detailed below:

1. ARTS

The policies & objectives of **ARTS** are to promote:

- Sustainable livelihood programs, which provide opportunities for people living in rural villages to work in their own community instead of migrating to a big city;
- Sustainable development programs that involve the process of integrating environmental criteria into economic practice to ensure that our strategic plans, while satisfying the need for continuing growth and evolution, conserve nature's capital for the future;
- Primary education for the masses, including distance education for the rural masses;
- The rediscovery of the rich heritage and potentials of India;
- Creativity and the pursuit of excellence in all avenues of the arts and sciences.

ARTS is a non-profit NGO and was founded by the trustees of Sankalpa Trust, which has signed an MOU with Development Alternatives, New Delhi to collaborate in the development of technologies and promotion of products, processes and services in programs relating to environmental management, shelter, agriculture, water, energy, recycling, small-scale industry and such other fields of common interest.

Subhrankar Mukherjee *PhD, MBA*
President, Society for Appropriate Rural Technology for Sustainability (ARTS)
P6 Cluster 2, Purbachal, Salt Lake Calcutta 700 097, INDIA.
Telephone: +91 (033) 2335 9812 *Mobile*: 93392 59812 *e-mail*: subhrankar@gmail.com

2. Our understanding of the assignment:

The SABERA Foundation (SF) provides care, education and skills to under-privileged children, and is one of the most eminent of its kind in Calcutta.

SF wishes to improve the utilization of the Computer Section at its premises, and is willing to consider setting up a multimedia facility for children, where children could get hands-on experience working with Information & Communications Technologies (ICT). To begin with, standard off-the-shelf multimedia programs would be provided, so that the organization can meet the immediate needs of its target audience. In the next phase, we shall develop customized multimedia software products, which the children can relate to directly and enhance their interactive working capability and self expression.

The assignment includes the design and operation of a suitable 'Maintenance Plan', to ensure that the facility runs smoothly and reliably, without interruption.

The assignment will also include the interior design and decoration of the facility, which would make it conducive as a learning environment for children.

3. Preamble on a 'Multimedia facility for children':

The growth of the multimedia industry in the last decade has been so explosive, that even the experts in America (which is home to the multimedia revolution) do not know for certain where the future of multimedia lies. However, in the context of the present assignment, it has been proved **universally** that:

- It is the **interactivity** between the user and the mixture of textual, graphic, audio and video inputs that gives multimedia programs the awesome power of retentivity in human memory, thereby reinforcing the learning potential;
- That **young minds** not only discover how to make multimedia work better and much faster than grown-ups can, but they can also intuitively create new ideas and applications, if they are provided with a minimum level of encouragement and technical support. This assertion has been scientifically tested and proved by Dr. Sugata Mitra of NIIT, in his seminal studies in the '*Hole-in-the-Wall*' series of experiments with the slum children of New Delhi (see details in Section 3.1 below).

3.1. Rationale of Project

We believe that a good starting premise for developing a popular multimedia facility for children should therefore keep the following parameters in mind:

- The facility should be robust enough to withstand the probing hands and minds of young children, while not standing in their way and impeding their natural creativity;
- It should have a very friendly and comfortable environment, which should encourage them to come again and again to test their ability to learn and absorb new ideas;
- The multimedia programs should relate to the socio-cultural background of their users, and provide the maximum amount of interactivity, so that the learning potential is maximized.
- There should be minimal intervention from grown-ups from the moment the child enters the multimedia facility, since this could actually detract from the interactive and learning potential of multimedia edutainment systems for children.

Subhrankar Mukherjee *PhD, MBA*
President, Society for Appropriate Rural Technology for Sustainability (ARTS)
P6 Cluster 2, Purbachal, Salt Lake Calcutta 700 097, INDIA.
Telephone: +91 (033) 2335 9812 *Mobile*: 93392 59812 *e-mail*: subhrankar@gmail.com

In other words, the facility should be set up in such a way that the children should be able to enter and ***intuitively*** get started almost immediately, without the distraction of too many instructions and guidance from elders. This regime may appear to be difficult to achieve at first; however, if the total multimedia system design is made properly, the facility's objective may actually be realized quite easily.

To prove our viewpoint, we draw on Dr. Sugata Mitra's '**hole-in-the-wall**' cognitive study of slum children, which demonstrated that young children have such innate and intuitive skills that they do not need any coaching to learn computer operating skills. In fact, it is usually the children in all social strata who guide their elders on computer operational procedures and methods.

The slum environment shown in the middle of the picture below is not vastly different from an Indian slum or rural environment, which gives us the confidence that our knowledge-based initiatives will be successful, with the children to begin with at least, and then gradually to seize the imagination of the entire beneficiary community.

The following is an extract from '*Hole in The Wall*', Frontline, WORLD, October 2002, <www.pbs.org/.../stories/india/thestory.html>:

Dr. Mitra heads research and development at NIIT, a leading computer software and training company in New Delhi. Just outside his office is a wall that separates his air-conditioned 21st-century office from a slum. Mitra decided to place a high-speed computer in the wall, connect it to the Internet, and watch who, if anyone, might use it. To his delight, curious children were immediately attracted to the strange new machine. "When they said, 'Can we touch it?'" Mitra recalls, "I said, 'It's on your side of the wall.' The rules say whatever is on their side, they can touch, so they touched it."

Within minutes, children figured out how to point and click. By the end of the day they were browsing. "Given access and opportunity, the children quickly taught themselves the rudiments of computer literacy."

One boy in particular, Rajinder, has become a computer whiz and a celebrity in India. "Mainly I go to the Disney site," Rajinder tells FRONTLINE/World, but he also regularly visits news sites and likes to use computer paint tools. His teacher says that Rajinder is a much better student now: "He has become quite bold and expressive. I've got great hopes for this child."

When Dr. Mitra asks Rajinder to define the Internet, the doe-eyed boy replies immediately, "That with which you can do anything."

We have developed our own proprietary processes and methodologies for designing educational and training programs, in general. An overview of the 'Plan-Do-Check-Act' or PDCA cycle for implementing this general procedure is shown in Annexure 1.

Subhrankar Mukherjee *PhD, MBA*
President, Society for Appropriate Rural Technology for Sustainability (ARTS)
P6 Cluster 2, Purbachal, Salt Lake Calcutta 700 097, INDIA.
Telephone: +91 (033) 2335 9812 *Mobile*: 93392 59812 *e-mail*: subhrankar@gmail.com

4. Scope of work:

The scope of work as we understand includes the following:

4.1. Plan and establish the design of the facility

We shall develop a plan for building the multimedia facility and submit the design for your approval, which shall include:

- 'Project Plan', highlighting the results of the right half of the PDCA cycle shown in Annexure 1, based on studies conducted at your premises;
- Details of hardware, software and computer peripheral requirements;
- Details of interior furnishing requirements, including decor and appearance considerations;
- Details of a 'Maintenance' program for hardware and software systems, including 'Maintenance Procedures Manual'.
- A preliminary 'Quality Manual' and other documentation, which will define the operational and safety procedures for the satisfactory routine operations of the multimedia facility. (This will be fine-tuned over a period of three months of actual operational, before the final documentation can be approved for adoption.)

4.2. Implementation program

Once you approve the 'Project Plan' and designs, the funds for procuring the hardware and software as well as the interior furnishing requirements and decor shall be released by you. If the planning and designs are optimal, this phase of the work should be relatively uncomplicated.

Training of staff members (who will ultimately manage the facility) and system development are essential parts of the 'total' implementation program. The training programs and other system development efforts are crucially important for implementing a fault-tolerant and robust system, which are essential ingredients for success identified in Section 3: *Preamble on a 'Multimedia facility for children'*.

The program will begin as soon as the 'Project Plan' is approved, and will extend to the launching date, which is projected to take about six months from the date of assignment.

4.3. Maintenance program

This will involve the deployment and training of one person (who may also concurrently be the staff member identified in Section 4.2 above ultimately managing the facility, if there are constraints in deploying multiple persons) who will have the integrated responsibility of maintaining the hardware systems, and to a lesser extent, the operating software systems as well.

These activities will begin as soon as the 'Project Plan' is approved, and extend to the launching date.

4.4. System upgradation and Customized Edutainment Software

Once the facility is up and running and the staff member(s) have had an opportunity to study and define the children's emerging needs for edutainment software, we shall submit the designs and plans for system upgradation and the development of customized edutainment software for your approval.

The paperwork for this phase of the project shall include:

- 'Project Plan', highlighting milestones and end results;

Subhrankar Mukherjee *PhD, MBA*
President, Society for Appropriate Rural Technology for Sustainability (ARTS)
P6 Cluster 2, Purbachal, Salt Lake Calcutta 700 097, INDIA.
Telephone: +91 (033) 2335 9812 *Mobile*: 93392 59812 *e-mail*: subhrankar@gmail.com

- Details of hardware and software enhancements required;
- Software configuration management program.

5. Plan of work:

We shall commence work within one week of the award of the assignment. The content of the work - which has been divided into two phases - is detailed below:

5.1. *Phase – 1* : Project implementation

We shall submit the 'Project Plan' (including the details mentioned in Sec 4.1: *Plan and establish the design of the facility*) within one month of commencement of the project, for your approval.

There may be a couple of iterations required before the design is finally approved. This may take between two weeks to one month.

On receipt of your approval, the project implementation work will probably take between three to four months from the date of plan approval. This is because most system hardware delivery lead times are between six to eight weeks. And we shall require another six to eight weeks to put them all together.

5.2. *Phase – 2*: Project completion / upgradation

After about three months of routine operation, we shall be able to approve the final documentation for adoption of the facility's 'Quality Management Systems'. This will mark the successful completion of the 'multimedia' project.

By this time, the revised 'edutainment' software needs of the children will be properly assessed. This will lead, amongst other activities, to a planned upgradation of appropriate custom-made 'edutainment' software for children. Needless to say, it is going to be an ongoing activity.

The above information is depicted graphically in the following Gantt Chart:

Task	**Time from assignment of project** (each column represents one month)														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Phase 1:															
Complete planning & design															
Submit 'Project Plan' to SF															
Approval by SF															
Project implementation															
Phase 2:															
Fine-tune operating systems															
Adoption & Finalization															
Study of upgradation reqmts.															
Start of upgradation programs															

5.3. Milestones

The milestones from the beginning of the assignment are as follows:

- The plans and designs will be completed within one month;
- The facility will be fully operational between five to six months;

Subhrankar Mukherjee *PhD, MBA*
President, Society for Appropriate Rural Technology for Sustainability (ARTS)
P6 Cluster 2, Purbachal, Salt Lake Calcutta 700 097, INDIA.
Telephone: +91 (033) 2335 9812 *Mobile*: 93392 59812 *e-mail*: subhrankar@gmail.com

- The total implementation of the systems will be deemed completed within nine months; and
- The development of custom-made 'edutainment' software for children and upgradation of the multimedia facility will begin after a year.

6. Our suitability for the assignment:

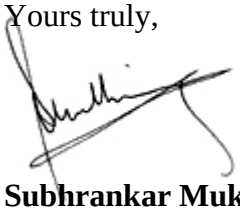
Our associates and I provide specialized management consultancy in a wide range *of 'Information Technology'* and *'Quality Management'* activities. I believe that our group is particularly suitable for this kind of assignment, because of our commitment to the development of multimedia and 'edutainment' systems. To help you in this assessment, I am enclosing a copy of my resume, which will explain my qualifications and experience.

I sincerely believe that we have the right mix of skills and experience that will be needed to bring this *'multimedia-for-children'* project to a successful completion. If you have any questions about our qualifications and experience, please do not hesitate to write to me.

7. Closure:

We thank you for this opportunity and trust that you will find this preliminary approach paper to be generally acceptable, in which case we shall be happy to discuss with you at your convenience the project cost implications, as well as the terms for executing the assignment.

Yours truly,

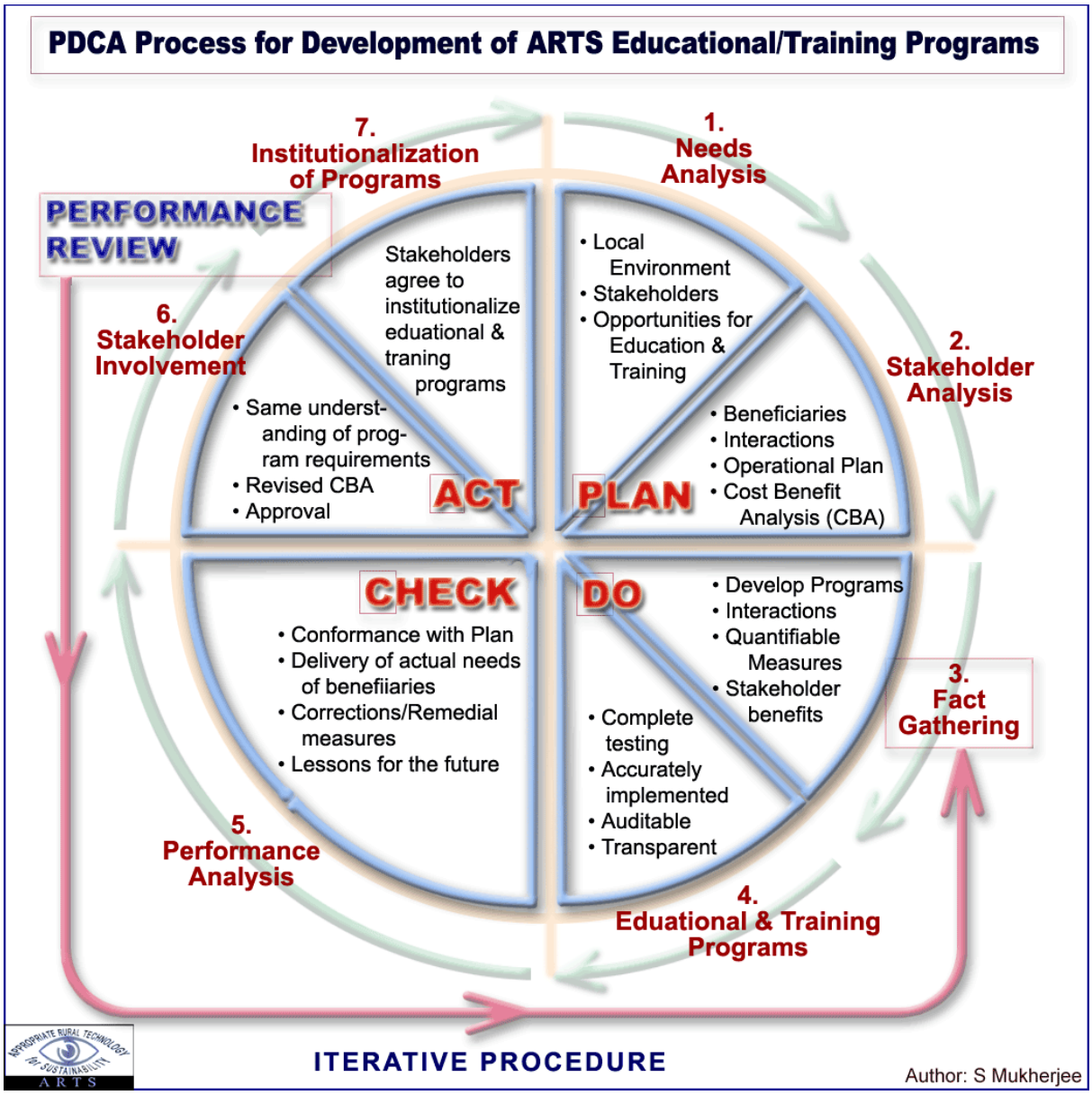


Subhrankar Mukherjee
President - ARTS

Subhrankar Mukherjee *PhD, MBA*
President, Society for Appropriate Rural Technology for Sustainability (ARTS)
P6 Cluster 2, Purbachal, Salt Lake Calcutta 700 097, INDIA.
Telephone: +91 (033) 2335 9812 *Mobile*: 93392 59812 *e-mail*: subhrankar@gmail.com

Annexure 1

Cyclical Procedure for Continuous Improvement in Design and Implementation of ARTS Educational & Training Programs



Note: Details of the above procedures will be made available on request