Digital Divide: Concern for Equity and Social Justice

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As the Azim Premji Foundation began its work on universalisation of elementary education, the first step involved discussions with parents in rural communities to listen to their aspirations for their children, and to understand their perceptions about education. All initiatives that the Foundation has so far taken up are looked at from a very focussed looking glass: Will this contribute to the universalisation of elementary education?

This was nearly two years ago, and since then the need to understand the aspirations and parents and children has been only growing in importance. When we started discussions with parents in rural Karnataka they clearly told us that they wanted their children to know English and computers, in addition to having a good school.

Thus when we launched a pilot project an on the use of computers in rural government schools, we looked at   the three basic questions before us. Will the use of IT lead to

1. Attracting the out-of-school children to school?
2. Improvement in attendance rates?
3. Improvement in academic achievement levels?

The Government of Karnataka gave us a list of 34 government schools in rural areas around Bangalore, which had an extra room for a pilot project on the use of computers in rural government schools. Azim Premji Foundation installed the computers in the Community Learning Centres (CLCs) as they are called, and provided some very basic educational software content in Indian languages to these schools. The most important features of this initiative, for the purpose of this paper, are as follows:

1. The CLC is available free of cost during school hours for children of that school, and on a pay-and-use basis for the general public before and after school hours and on holidays.
2. CLCs are run by local youth called the Young India Fellows (YIFs). These YIFs receive a Fellowship of Rs. 1500 per month for a period of 12 months from Azim Premji Foundation and thereafter they would be responsible for generating enough revenues to ensure the upkeep of the CLC.

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Without going into too many details of the CLCs, suffice it to say that this experiment has been closely observed by a cross-section of individuals and organisations interested in the question of the use of IT in basic education. But beyond the learning improvement that children may demonstrate because of the direct impact of computers and software, there are anecdotes that speak volumes about the possibilities.

I will cite two specific anecdotes out of the many that we have witnessed over the past year while implementing this initiative.

The transfer of ownership…

Anoor is a small village with a population of about 1000 people in Sidlaghatta taluk of Kolar district (Karnataka) which is considered a socially and economically backward district. Sidlaghatta is well known for its sericulture industry. Farmers grow the mulberry crop while the silk producers rear the cocoons and produce silk yarn in the process. Anoor government school is one of the five schools in Sidlaghatta where Azim Premji Foundation put up computers in April 2001. There are nearly 180 children in Std. 1 to 7 at this school.

There are 4 computers in Anoor school, where children take turns to use these computers about 2-3 class periods a week. The Young India Fellow in-charge of managing the Anoor schools is 21 year old Radha who has completed her BA and then taken up some computer certification courses. For a year, up to March 2002, Radha received a Fellowship every month of Rs. 1500 to manage the CLC. Since then she has had to depend on the community to generate revenues as well as seek community contributions to support the activities of the CLC including a monthly "salary" to her of Rs. 2000 -- up from a Fellowship of Rs. 1500 last year!

Radha and the school head teacher were informed by Azim Premji Foundation at the very beginning of the programme that at the end of the first year in April 2002, the onus of meeting all the operational costs will lie with the school. If the school is unable to sustain itself financially, then the computers would move to one of the nearby government schools that had shown interest in getting the facility in their school and had offered to sustain it financially.

Radha tried hard to generate revenues and had only marginal success. The village is small and there are very few people who are keen to receive computer training after school hours, especially in the absence of credible certification that can help get jobs. Some of the other initiatives taken up by Radha did not result in enough revenues either. So a meeting of the parents and the community was called, and a decision was taken to get money to the school in the form of donations, from parents and other well-to-do members of the village.

A few days later, Radha also received a "rule-book" developed by the community with the following main points:

1. Now that we are _paying_ for the facility, we would want to ensure that Radha does not take more than one day off in a month
2. If there is a power cut during school hours, Radha will stay back for an extra hour after school to ensure that children get to use the PCs adequately
3. The educational software content CDs that were given last year have now been used by the children repeatedly. We want a fresh set of CDs teaching more academic content to be given at the earliest.

When I heard this, I was overjoyed. What a transformation of a community, in just over a year, from non-involvement in school affairs to close involvement in the running of the CLC! We are already beginning to see some impact of all this on the broader issues of school governance through community participation.

You won't get computers unless…

Based on the experience in the 34 CLCs, the Government of Karnataka decided to set up 55 CLCs in 11 identified taluks in the state. One of the 11 taluks identified was Kadur in the coffee growing belt of Kodagu district. As in most other parts of the country, the children who come to government schools usually are from poor economic backgrounds.

As part of the process of setting up these 55 CLCs, Azim Premji Foundation decided to hold community meetings to gauge community readiness for this

> Development is about expanding the choices people have to lead lives that they value
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> *Human Development Report 2001, United Nations Development Programme*

concept and to make an assessment of the ability of the community to sustain the initiative after the first year.

Before meeting the respective schools who were competing to get the CLC for their school, a meeting was arranged with the Block Education Officer (BEO) in charge of the taluk. Although he was personally supportive and excited about the initiative, he was very sceptical (based on previous efforts to mobilise funds for the school) that the community would not be able to raise any funds for this programme.

He nevertheless accompanied the representatives of Azim Premji Foundation to the first school and as if to show us that community would not participate financially, made a statement in the opening speech to them, saying, "If you do not have Rs. 20,000 in your school bank account, you will not be able to get the computers." This was followed by the screening of a film of the existing CLCs, which led to detailed discussions between the Azim Premji Foundation representatives and community members. It was also clarified to the community about what was being provided by government, by Azim Premji Foundation, and what was expected of them. The entire group of over 100 parents who were participants, listened to the details very closely. Then one parent after the other started asking further questions, until they all seemed to feel that computers were important for their children. At this time, one civil contractor who was present in the meeting, stood up and said, "Look, I am a civil contractor. I can either repair the floor of the CLC room, or pay Rs. 5000/- in cash to the school for the purpose".

Another person from the participants slowly stood up and said, "I can put in Rs. 1000 as my contribution." He then walked to the dais and took out hard currency of Rs. 1000 and put it on the table and said, "Here's my contribution." We could not believe what we were seeing. Then another, then another… until Rs. 16,750 was collected through small contributions on the spot. By any stretch of imagination, generation of Rs. 16,750 plus an offer to pay Rs. 5000 in cash, on the spot was quite a phenomenon!

Digital Divide

The discussions on the Digital Divide in the western context typically focus on issues of physical access to computers and connectivity (internet access). The digital divide – the divide between those with access to new technologies and those without – is now one of America's leading

economic and civil rights issues[1]. Most research in the West focuses on access to computers, connectivity, and content as the core elements of digital divide. Most published research in the US on the digital divide focuses on the issues of usage of the net for people of different racial and ethnic origins, people with different education levels, and people with different income levels.

Any discussion of the Digital Divide in the Indian context, must bear in mind the necessary conditions for utilising the digital opportunity.

1. Our most fundamental challenge in addressing the issue of addressing the digital divide is to ensure that every child in this country receives at least basic education. If the fundamental right to education is not realised, there are bound to be gaping inequities in the country. This is true irrespective of the "digital" aspect of the gaps.

2. The next level challenge is to ensure that there is wide-spread physical access to information producing and dissemination tools. It is possible to conceive a number of ways in which information flow channels can be established. One such way is of course to use computers and connectivity… but that certainly is not the only way. The costs of computers in the Indian context are prohibitively high. According the data from NASSCOM[2], PC costs are 24 months of per capita income in India, vis-à-vis 4 months in China.

3. The third level challenge is the issue of availability of local language, locally relevant content. According to Prof. Kenneth Keniston[3], India faces the most difficult problems of any nation. Unlike the United States, where 97 percent of the population speak, write, and read English, in India even basic literacy in one mother tongue (defined as the ability to write one's name), is available to slightly more than half of the population, including less than half of the female population.

4. The fourth of the challenges is the aspect of connectivity. Apart from major urban centres in the country, the possibilities of low-cost reliable connectivity remains a major issue in the country. A recent article in the Express Computer online magazine[4] states, "…but PC penetration is just about 6 per 1,000 people. Internet penetration, which was expected to give a fillip to PC penetration, has been able to reach just 1 percent of the

population, with 10 million users." There have been some recent initiatives with the use of wireless in local loop technology, but there is still a lot of ground to be covered on this front.

Technology Diffusion

When a new technology becomes available in any society, the most likely group of people to use the new technology belong to a class which can afford the new technology -- when it is still expensive in the initial stages, and the risks of using that technology are manageable. Gradually, over time as there are breakthroughs in the technology itself to make it more affordable, or as the larger society understands the costs and "benefits" of the new technology, more people in society start using the new technology. In the Indian context, this can be seen in the case of the radio, and more recently the television.

The dream of the leadership in the country when the TV was introduced was that it would explode the barriers between information haves and have-nots on a variety of issues. So the required infrastructure was set-up with great vigour and zeal across the country over the next few years. For many years though, television remained a privilege that only a few well-to-do people in the country could afford. Despite the various programmes undertaken by the government to set-up community TV centres, the largest penetration of TVs has happened through private purchases of the device. Even as the community TVs are being used, it would indeed be interesting research to investigate how many of these were used for the "real purpose" for which they were meant for – understanding better agricultural practices, better health practices, etc. – and how much of the community TV is being used for pure entertainment purposes. The spread of TV among private owners in India, has taken place primarily because of the entertainment value of the TV and not because of the developmental aspects which the medium was initially conceived for.

This is a natural process of technological diffusion, and the lack of equity becomes less and less serious with the passage of time. For example, we no longer talk about the high cost of radio sets in our country. Even though TV sets are not cheap by Indian standards, there is very little debate going on about the lack of equity caused due to the lack of TV.

How do we look at the issue of equity in such a context?

Trends in Information Infrastructure in India

The total number of installed PC base in the country is 7.5 million. Overall, the PC purchases in the top four metros (Delhi, Mumbai, Calcutta, and Chennai) accounted for 53 percent of the total PCs purchased. India has a relatively low tele-density of 3 percent for landlines. As per the Ministry of Information Technology, the target for 2008 is to get the number of PCs per thousand population up to 20 per 1000 people.

The Global Information Technology Report 2001-2002: Readiness for the Network World, ranks India 54th and China 64th out of a list of 75 countries on a Networked Readiness Index.

The indicators clearly are that the penetration of computers will be more widespread, the tele-density is likely to increase, the internet access costs and possibilities will come down substantially in the years to come.

Governmental Response

There are a number of state governments that have chosen to set up computers in government schools, mostly at the high school (Std. 8-10) level. These choices by the state governments seem to be governed by a number of political considerations, as much as by an effort to provide more learning opportunities for children in government schools.

The boom in the IT sector in the country has had an impact on the perception of the governments about what would be good for children in their states. It would be an interesting study to see whether there is a correlation between the growth in the investments by governments on putting computers in schools, with the broader growth or slowdown of the IT industry.

The use of computers in our government schools has a larger context than just the basic elements of digital divide related debates. In this context, while connectivity may add some value, it is not the most essential feature at this time.

There is criticism when governments choose to put computers into schools when there are so many glaring deficiencies in the public schooling system. Can't the same money be invested in these "higher priority" areas within education? These are questions that do not have a straight-line logic to them. Everything that needs to be provided to children in government schools must be provided in order to enable them to compete with any other set of children in the country. .

If computers is one of them, it is necessary to figure out the ways in which the resource can be made more useful to the children in the school and the population in general.

While anecdotes abound about how particular Information and Communication Technologies (ICT) projects contributed to the fight against poverty, it remains remarkably difficult to convince many decision makers, private and public, that fighting the digital divide is a priority and an avenue by which to reduce the broader, more complex, and deeper development divides[5].

The Question of Parental Aspirations

If anything, the anecdotes quoted earlier in this paper point to parental interest in their children's education. In an urban area, parents express their interest in their child's education through making a choice about which school to admit their child in. In most rural areas of the country, the only school there is the government school. When a village community is alive to the need for better schools, they tend to get together and contribute to the school -- and in most cases, the only way in which rural communities consider contributing to their school is through creation of infrastructure. For example, even though many parents told us that they would like their children to learn English, they did not know of any easy way of making this possible.

So when the parents had the opportunity to get computers, and they had to make a contribution to meet some of the expenses to refurbish the CLC room, they were more than willing to do so. In addition, they have agreed to take up the responsibility of sustaining the CLC from the second year onwards. Out of the approximately 80 identified schools that we held community meetings in, we had very positive indications from most.

The Indian middle class has always found solutions to their changing needs, by exercising choices. If the middle class wanted good quality education for their children, they did not go

through the hassle of developing a vibrant and responsive public school system – they just created a legal framework for allowing private schools to flourish and then patronised them. When this segment of the population became keen on having safe drinking water, they did not battle to create mechanisms that would ensure safe drinking water for everyone – they just shifted to bottled water. This "Bisleri Culture" middle class seems to find its own way of responding to its changing needs from time to time.

That leaves a large section of the population to suffer the consequences of, for example, low quality potable water, or a low quality schooling system that the middle class thinks is grossly inadequate.

Parents in rural areas express their commitment to their children's future by participating actively in matters which they think will contribute to their children's future… and in this case, on computers.

Key Issues for Consideration

There are a number of core issues that need to be addressed – and if using technology in an appropriate manner to address some of these basic objectives is a possibility, there is certainly a merit in exploring such options. Let me raise some of the basic issues that we need to address even as think about the Digital Divide in our country:

1. What fresh initiatives are we going to take up to address the problem of illiteracy in the country?

2. Are we going to ensure that universalisation of elementary education will be achieved by 2010? Do we have the political will and administrative capability to make this happen?

3. What additional initiatives are we going to take up to increase the value proposition in school? Better learning outcomes, better structured incentives for performing schools?

4. How are we as a society going to address the issue of cheaper access to rural and underserved communities in the country? Most importantly what will the people use it for?

5. How are we going to develop mechanisms to ensure that people are not just receivers and users of information created elsewhere, but actually partake in the generation of locally relevant information?

The aspects of wide-spread computer access, locally relevant content, and connectivity will be less of a problem if we have find ways to address the above questions. Finally, while thinking of technology, let us reflect on the following issues: Is a village telephone a device that merely allows communication, or does it have a larger significance in a developmental sense? Does it liberate? Does it connect? Does it empower? Are the computers provided in Anoor and Kadur schools leading to merely some improvement in learning or is it leading to other developmentally desirable aspects?

As we step into a more connected and networked world, there is a need to develop a collective conscience on some of these critical issues and forge ahead in the years to come.

References

[1] Larry Irving, Assistant Secretary for Information and Commerce, US Department of Commerce, in the Introduction to Falling Through the Net: Defining the Digital Divide, July 1999

[2] Presentation on the Indian IT Industry, NASSCOM (www.nasscom.org)

[3] Kenneth Keniston, Andrew Mellow Professor of Human Development at MIT while delivering the Prof. M. N. Srinivas Memorial Lecture on IT For the Common Man: Lessons from India, at Bangalore, 2002

[4] When Will India's Masses Take to Computers? Express Computer magazine, 8th April 2000 edition. (www.expresscomputeronline.com)

[5] Bruna Lanvin, info*Dev*, The World Bank, in The Global Information Technology Report 2001-2002: Readiness for the Network World, publication of Center for International Development, Harvard University.