

Episode 7: IT – Making a difference

Hello this is Radio Australia; I'm Barry Clarke and welcome to 'Smart Societies'. In the digital era smart societies are using IT to create new wealth and job opportunities. So in this program, IT Making A Difference, we look at what impact the new communication technologies are having on development and education.

CLARKE: IT holds out the promise that developing countries might leapfrog into the 21st century and India is leading the charge. It's a development that hasn't gone unnoticed by that well-know television family, the Kumars at Number 42.

KUMARS: I can't believe who we've got on the show; he's the Star Trek Captain of the next generation, ladies and gentlemen, Patrick Stewart. (applause)

GRANDMOTHER KUMAR: Patrick darling I would like to talk about your theatre work although I did love you in Star Trek, especially in those spandex tights, boldly showing what no man has shown before. But I had one Star Trek question actually, why aren't there any Indians on the Enterprise? Don't you need IT support? (laughter and applause)

CLARKE: The impact of India's growing IT support industry was the focus of a conference held in Mumbai, in early 2004.

MARIKA VICZIANY: The IT industry in India is going to create more jobs than any other industry since the British built the railway lines. At the moment India probably has got let's say one and a half million people working in the new IT industry but that is a tiny percentage of the annual graduate population of India, and a tiny percentage of all the people who are already out there and unemployed.

CLARKE: Marika Vicziany is the Director of Monash University's Asia Institute. She's conducted fieldwork in India over the past 25 years and, as Dr Ram Tarneja remarks, is a regular visitor to Mumbai.

DR RAM TARNEJA: We're very happy to share our experiences with Monash. In 2003 Marika and Professor Sirish Vichare of Thadomal College set up an international collaborated project on the Dharavi slums. We have the unfortunate significant position of having the largest slum in Asia. We hope that in the next six years something happens to remove these slums and to bring affordable shelter to all, we're looking forward to it.

CLARKE: Marika Vicziany's research confirms that while the new IT sector is creating new jobs, under-privileged castes like the Dalits, or Untouchables, continue to be disadvantaged even if they have a university degree.

MARIKA VICZIANY: My research began looking at Dalit college students based here in the city of Bombay, and it's quite clear that despite the fact that at the end of three years they will have a bachelor of commerce, a bachelor of accounting or whatever the discipline it is that they're specialising in, the possibility of them getting a job in the modern sector and in particular in the IT sector is very, very low. They don't go to the best colleges, they don't have a good command of English, they don't have PCs in their homes, they have no money for tutors, all the ingredients that makes for a successful undergraduate in India are missing in the case of severely socially disadvantaged students.

CLARKE: So it's quite clear then from your research that the IT sector is not helping these people who are at the very bottom rung of the ladder if you like. Notwithstanding that, has IT created new wealth, new job opportunities for other Indians?

MARIKA VICZIANY: The Indian IT industry grew up in the last six to eight years from nothing. It's been a spectacular growth. It's therefore a very significant dramatic increase in jobs at a time when it's very hard to point to an increase in jobs anywhere else. Most other jobs that are familiar to people are shrinking, especially with the public sector shrinking, and the private sector employment is also shrinking. Technology is unfortunately displacing labour. So there's no doubt that the IT industry has created new jobs, and equally there's no doubt that middle class kids are very capable, and it's good that they're getting jobs, these are the young people who sit in call centres, who are employed by international aircraft companies to work in data processing centres and so on. This is very new, very dynamic, but let's not fool ourselves, let's not call it a social revolution.

CLARKE: Getting computers into rural parts of India is also proving a challenge. IT access is often hampered by unreliable telephone and electricity connections.

Professor Bagchi from the Institute of Developing Societies in Kolkata:

PROFESSOR BAGCHI: Although many villages are theoretically electrified, in fact what has happened is that a pole has been put down in the village and a well has been taken there. Most villages have no connections in their houses, maybe one rice husking machine is operating on that. But beyond that nothing, and when there is connection electricity supplies are often interrupted. Most Indian states in fact have power shortages except for western India and Mumbai in particular. You have power shortages in practically all the other Indian states, including the capital of India, that's New Delhi, which goes often without power for hours together. That is the situation let alone the issue of taking it to the villages. And then you have also three other problems I'd say, particularly in northern India. Even if there are public places they're controlled by local landlords or his minions, and ordinary villagers don't have access. I suspect that if a computer was given to one of these villages it would either not be used by the villagers or it would be monopolised by the landlord or his henchmen and relations, and ordinary people would not get any benefit out of that. That's one problem. Second problem is that the degree of functional literacy, even in the vernacular I would say in most Indian villages is less than 50 per cent. In some states like Chandigarh, parts of Orissa, parts of Bihar and Uttar Pradesh I'd say, I'd put it down to 30 per cent or less functional literacy in the vernacular. So illiteracy, lack of access, lack of electricity, these are great barriers still to the use of computers. And also I would say that computers are still very expensive for most Indians. At a minimum they cost 30,000 to 35,000 rupees, and the salary of an informal worker generally the income does not come to more than 3,500 or 4,000 rupees per month. How can they afford it?

CLARKE: In an effort to make computers accessible to rural villages, the Indian Governments IT Task Force planned to install public internet terminals in a pilot project in the State of Maharashtra. Nearly 80 villages were targeted but because of problems with electricity and telephone lines the project was only implemented in 55 villages. Called The Warana Wired Village Project, it aimed among other things to link rural cooperatives involved in sugar and dairy production.

Dr Parthasarathy from the Indian Institute of Technology Bombay headed the team that reviewed its success.

DR PARTHASARATHY: The project was very ambitious and it had a large number of objectives. It tried to provide the kind of information services that is provided by other IT projects in India, plus it also tried to promote e-governance in the region by enabling interface between citizens and the government. But the major objective was to improve the efficiency and transparency of the cooperatives, because the Warana region has one of the biggest cooperatives in India, and it's an example of a highly successful cooperative. So the primary motive was to improve the efficiency and transparency in the working of these cooperatives, and that is where it has succeeded to a larger extent compared to the other objectives of the project.

CLARKE: How do you measure that it has been successful?

DR PARTHASARATHY: The project began in 1998 so it's been, I visited, I spent a month there in 2003, so I went there after about five years and it had a lot of time for it to work and succeed. And what we did was to visit a large number of these villages and spoke to the actual users of these facilities. Most of the farmers we spoke to said there were two ways in which they benefited from it, one is in terms of time spent on following up on various aspects related to the transactions, the second was the amount of money they spent on the transactions of actually producing sugar cane, getting it harvested, transporting it to the factories, getting advances, getting money for it, acquiring fertilizers and various kinds of input. So each stage has been computerised and has been made accessible from any village, and they mentioned that say about 400 to 500 rupees per season. And you can get a great deal of food grain for that amount, which is six months of food supply, so it's quite considerable, especially for the poor.

CLARKE: Dr Parthasarathy's field work shows that IT can make a difference to the lives of people in poor rural villages, warning them of bad weather, giving them timely information about the market value of their crops and livestock, as well as access to government services and education. Professor Shamsul, is the Director of the Institute of the Malay World and Civilisation at the University of Kebangsaan in Malaysia. He acknowledges the challenge in making IT accessible to people across rural Malaysia.

PROFESSOR SHAMSUL: The problems that people are facing in India like what Marika was mentioning, it's happening in Malaysia too, definitely, because we talk of digital divide, because there are illiterate people in the country still, and there are poor people in the country. We have hard-core poor we call it. So the problem is not computer, the problem's not IT, the problem's how do we enhance and empower the children of these people? Of course we cannot empower them immediately now, but the children, so we look forward. Perhaps these children should be given a chance to have access to IT, because the key word is access and equity that becomes the slogan in Malaysia, access and equity.

So the question is do you have electricity, then we give you electricity first, then we give you computer, then we give you the telephone line, because you need not connect to internet, you still can use computer. So all this logic is working out very slowly, and in the most difficult manner because we do have people who live in long houses, you have to walk six hours before you can reach them. And I've been to many of these places because I was involved in many of these projects, but I always questioned this. The issue is not the digital divide, it's digital opportunity.

So it is quite interesting now in Malaysia, we are talking about digital opportunity, we're not talking

about digital divide, because it's very negative talk as far as we're concerned. So the interesting part is not so much difficulties in terms of how do we take them out of the position of being poor first before we even want to think about shall we use computer as part of the rope to pull them out? I think it is quite different in that sense.

CLARKE: So it's not just a question of the logistics of it here, it's actually social attitudes and social change that needs to take place really Marika? Are there any lessons that one could draw from Malaysia to apply to India?

MARIKA VICZIANY: I'm not sure about that in the sense that India does have the most vibrant software IT industry in the world. As far as I'm aware of Malaysia is not on the horizon. You've got a lot of Indian IT professionals, and Indian multinationals, such as Tata Consultancy Services doing very important project work for the Malaysian government. So I'm not sure that there are lessons directly from the Malaysian experience relevant to the Indian one, but what I think is revealing is that there is a universal problem here about how to make IT work on the ground for ordinary people. And this is where the situation in Malaysia and India is indeed the same.

There is very little evidence in both countries of what I call the so-called IT revolution on the ground. What we have in India is, as I say, a vibrant industry but an industry that is servicing the needs of the best Indian companies and the multinationals. We have a situation where I think the IT is largely confined to what I call enclaves of excellence, and this is a problem universal to Asia, we have enclaves of excellence floating in seas of mass poverty.

CLARKE: Marika Vicziany. Professor Shamsul explains how the Malaysian governments' IT agenda aims to bring the whole country into the information age.

PROFESSOR SHAMSUL: In Malaysia, apparently, they thought the hardware problem can be solved so one computer in one house, and we cannot talk in these terms in India. We are talking about one billion; we are talking about 23 million population of Malaysians. So there is a campaign, one house, one computer, but definitely all government-sponsored schools in the primary school have got computers now, every one of them. We know that. Now you have this particular machine, how long before you can actually effectively use the machine? Now this is a problem in Malaysia. The problem now is having this beautiful computer being decorated with flowers and what not around it. It has become an ornament sometimes, which is beyond the government's control or anybody's control.

So there is one sphere that is growing and moving like the way we are seeing in India now, but there's another sphere, which involves social engineering, intervention of the government, the private sector and the community. That's why they call it the IT agenda. The assumption is we need to move from p-economy, which is production economy, industrial revolution produced production economy, to k-economy, knowledge-based economy. So that transformation is a structural one, and therefore the preparation has to be done there at the same time while this whole process is unravelling itself in the society.

So what is happening in Malaysia is that as the planning comes through the seventh Malaysia plan and the eighth Malaysia plan, which we'll have in 2005. We have now created this sphere where this public can now enter. So our problem in Malaysia is we don't have 15,000 knowledge workers

which is necessary in the next five years, and that's why so many people from Bangalore, from Mumbai are now in Malaysia. And the Malaysian Airline flights have increased by 88 per cent.

So this is the connection between Malaysia and India, we're dependent on Indian knowledge workers. So [of] that one and a half million knowledge workers in India I can assure you some of the top ones are actually in Malaysia, being paid very high salaries to help us out. Because we are waiting for the school system to begin to actually have some parts and components of IT being embedded into the whole system from primary school, secondary school and university.

CLARKE: The Malaysian government's investment in smart schools is designed to support the so-called Multimedia Super Corridor that aims to turn the country into a regional IT hub by 2020. One literacy program that makes good use of IT to help 13 and 14-year-olds whose second language is English is called The Spiderman Project.

Cartoon characters like Spiderman were winning young hearts and minds in Malaysian villages so educationists decided to build a web of online texts around the superhero.

Dr Moses Samuel from the University of Malaya:

DR MOSES SAMUEL: We went to this village, this semi rural area in Malaysia and found that on the side of one of the shop houses was a picture of Spiderman, and this was actually a picture that was drawn by the shopkeeper's son way before the movie came when he was reading Marvel comics. And when the movie came this mural on the side of the wall became part of the lives of the students, they were talking about it and we decided to actually look at curriculum development, look at literacy development around the idea of Spiderman, because what you had was the Marvel comics, the movie version, the toys, the colouring books and even local Malaysian newspapers talking about Malaysian Spidermen, people who climbed up coconut trees to sort of bring the coconuts down, they were called Spidermen. So what we've been looking at is the web of texts, the different kinds of texts around this idea, Spiderman may have come from the United States but he was very much alive in this community and we wanted to tap onto it.

SUE SLAMEN: Well we all grew up with comic books, but I suppose kids these days have now grown up not only with television but they also spend a fair bit of time on the internet as well. Do all of these new forms of popular culture have to be taken into account necessarily by educationists for education to truly be relevant to this new digital generation?

DR MOSES SAMUEL: Definitely, I mean because these things are part of the lives of students. But the problem sometimes remains is in school, especially in countries where you have a national curriculum, these things don't figure. And so you have a kind of a gulf between what's offered in school and what's really part of the lived experience of students. And what we were trying to do is actually bridge these two dimensions, the lived experiences of students and the national curriculum so that the national curriculum itself becomes a living document, like the constitution, relevant to the lives of people, part of the whole way in which you make meaning and make sense of the world around you.

SUE SLAMEN: Well so how did you go about this? I can imagine teachers feeling a bit sceptical taking Spiderman into the classroom in some different educational form? How did you do it?

DR MOSES SAMUEL: There is obviously some kind of scepticism because this is probably one of those many new ideas that are coming in. But what happened was we actually showed them that we're not just looking at Spiderman, but we're looking at different ways of looking at texts. When people look at text these days, especially with the internet revolution, they're looking at visuals together with the words on the text, and all these things are feeding off each other. And young kids actually make decisions about font sizes, types of fonts, colours; all this is part of composition. We're no longer writing words on the text but you're using a full range of semiotic resources, icons, symbols, pictures, images and we wanted to tap on all this. It was about Spiderman yes, it was about something that's happening in the community, but it was more importantly part of new ways of making meaning, in ways in which children all over the world are making meaning using these new resources.

CLARKE: In Australia, schools are also using IT to make a difference in the classroom. An inner city school in Brisbane has 7-year-olds working around computers with excellent educational outcomes. Cathi Lewis from Monash University joined Moses Samuel to explain how these primary school teachers had moved beyond the talk and chalk method of teaching.

CATHI LEWIS: Well actually it's very interesting because Moses' example comes out of work that was done by Allen Luke and Freebody and Allen Luke was instrumental in a huge revolution in education in Queensland. He introduced what is called the so-called 'New Basics' curriculum, which has been implemented in about 59 schools in Queensland very successfully. And Buranda State School, which is the one we focused on in my work, has been one of the schools selected to do that.

And yes, the students are using popular culture incorporating that and then using it as a sort of a trampoline, a bouncing off point to explore the deeper issues and the values underpinning those issues. They call it developing critical literacy. You can have three or four computer terminals in a classroom of say 24 students and the teacher is facilitating the use of those terminals as students are required to develop a whole lot of skills so they may only spend one-tenth or one-twentieth of their actual tasking time on the computer.

It was interesting to watch this in the classroom in Buranda where four students would sit around, some would be writing notes, some would be making suggestions, they would be discussing on the side, somebody would be on the keyboard, that would change because they recognised in that group each group would have people who might be good at downloading images, others might be simultaneously scanning drawings, and the teacher ensured that each person within that group did at some stage use the computer, whether they were using Excel or whether they were just recording the work. But across a week you would always get every member of that group using a terminal effectively.

DR MOSES SAMUEL: Yeah, I would agree. In a sense again you sometimes see the excitement with students, and sometimes that's the best way to reach teachers, when you see kids being excited about their work, that's the best way for teachers to rethink their old practice, to look at ways in which they can connect with the life worlds of learners. And of course it's much more than just using a terminal, a lot of it is the talk that goes on around the terminal. And that's probably the most powerful thing about the use of computers, the kind of talk that's going around and the processing of what's going on, much more than just clicking a mouse or typing on the keyboard, but new ways of

sense making collaboratively. In a sense this is the way in which people are now making meaning in teams, working together, looking at alternative perspectives, re-examining assumptions, I mean all that is occurring around the space of the computer.

CLARKE: Smart classrooms are not only helping kids to acquire knowledge but to become good citizens as well. Cathi Lewis watched the Grade 3 pupils in action.

CATHI LEWIS: Students were doing a project on endangered species and they'd already explored the values underpinning that. You know what do we mean by endangered species, why is it important and the group I looked at explored an endangered butterfly in Queensland. Now this butterfly they discovered needed to have a particular tree in which to lay its eggs and for its little caterpillar to come out and munch on the leaves etc., as part of its life cycle. And what had happened is with a whole lot of development these trees were disappearing out of the metropolitan area of Brisbane. So they decided that they needed to do something about it, and they put together a proposal to their teacher, they'd presented it in a power point presentation to both their parents and to collectively and to the principal. And what they proposed is that they grow a stand of these trees in the school.

Now it was very interesting because they did it in such a mature way and they had all the skills that they're learning in the classroom. They had all the knowledge that they were learning through their explorations, and indeed they were so convincing that their parents got behind it too, the principal agreed and that stand of young trees is growing happily, every day they go out and water it. The whole school in fact became convinced of the necessity to have this stand of trees. The butterflies have come; the children are involved in this process.

CLARKE: Sociologist Cathi Lewis and Moses Samuel from the Education Faculty at the University of Malaya.

Smart Societies is produced by Sue Slamen and Barry Clarke, for Radio Australia.