Doors of Perception 7: Flow

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Social research, design and technology in India

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Before I begin, I just wanted to let you know how much of a fan I've become of Marcel van der Drift's work. It's pleasure to see somebody who watches as much TV as I do, and indeed learns much more from it.

Good. So let me begin with a sort of cheesy diagram to describe what it is we do. The Centre for Knowledge Society was set up about two years ago. We work between social research, design and technology, to find ways to use emerging technologies for development, information and communication technologies for the use of under-served populations and non-élite rural populations in some of the most unlikely parts of the world.

This is not easy. Here's a kind of hierarchy or wish list, that I made a long time ago, of what it is that we'd need to make any of this possible, starting with some deep rich voice-and data-connectivity. (But even before we get there, we realise there are hierarchies of caste, extreme vertical structures of income and opportunity, and, in fact, intermittent electricity which would prevent you from using your systems when it's not there, and just as likely fry your systems when it is available.)

- affordable appropriate hardware
- software that works in the various regional languages and dialects used across India
- services: constructed locally, and meeting local needs
- content: created by, and made available to, the user groups
- training and human resources to support all of this

So, the projects that have come into existence in the last few years have had to contend with a lot of very serious design issues. I would suggest that the use of information and communication technologies for development is a question that many of the answers that you've already provided could be applied. And I'll come back to that a few slides on.

Now, to explain how these technologies are actually used in a rural context, I'm going to use a brief case study. This is the Gyandoot Project. Established about two-and-a-half years ago by two Indian civil servants, working in a district. They found a number of existing government resources which could then be used as the site for this kind of information centre installation, and you'll note some effort at logo typing, a list of services available outside, and in fact there are signs from the state highway directing citizen consumers towards the centre.

This is what it looks like from the inside. You have a local entrepreneur from a local village community or nearby who has had some college education in some cases, some computer training, a command of English, and mediates between retail customer and the network, the hardware, the software, so provides counter–top services. The model is really of a kind of mediated access to the information network.

To give you a sense of services that are available at this centre, and others quite like it, I'll just run through a record, made by one of these entrepreneurs, of traffic at his information centre or kiosk. So, here we have rates at auction centres or

exchange centres at a number of locations within the district and a few districts away and at large towns and cities further beyond. This information is helping a smalltime agriculturalist decide whether to actually sell that sack of potatoes locally or to travel further afield.

Among the interesting protocols that they developed was this request/complaint system, a public grievance system, which allows consumers to make the administration aware of problems. For example, there's a handpump that's dried up or broken and needs to be fixed, some junior engineer needs to be made aware of the problem and has to go out and fix it. There's a dead carcass lying around, some government veterinarian has to go out and make sure this doesn't become the source of some epidemic. Things like that. It costs ten rupees to place a request.

A number of certificates are available, for caste, domicile, income, age, things like that which are necessary for other forms of transaction within the administrative system, the bureaucracy. Classified advertisements cost ten rupees each, and it costs one rupee to scan such advertisements. Matrimonial adds work in much the same way. Land records were not online at the time of this documentation, but have gone online since.
And there are a number of offline transactions that a computer in a rural context can actually be useful for, including printing out horoscopes, printing out invitations, job applications, and things like that.

Then there's computer training, or orientation - this is a mouse, this is how you turn a computer on and off, and of course, when there is electricity you can do a practical, when there isn't you can do theory. So they're making some amount of money, it's a sort of sub-sustainable level of income that they're generating. Now, you might find some of these applications innovative, certainly not things that you've encountered in your everyday life. I certainly found them quite striking when I documented this initiative about two years ago.

However, I now feel that there is a sort of extraordinary constraint on the kinds of content and service applications this kind of model has come up with so far. They're all orientated towards a kind of desktop, bureaucratic metaphor, and they often involve transactions between the government and the citizenry. And this doesn't begin to address the extraordinary complexity of everyday life: the life flows and work flows that rural groups are engaged in everyday.

So, one of the things we are trying to do, is come up with some kind of taxonomy of different kinds of content, and service applications, that would be appropriate for these groups. We are trying to ensure that these can become available in a sort of sustainable and economic manner, to pay for the infrastructure that has yet to be installed in most of South Asia.

So there are two rubrics I would like to keep in mind. One is, "What is it that you actually provide?" And the other is, "How do you cost it?" How do you make it valuable enough for somebody to part with hard-earned money for? There is a third consideration we try to plan for, this has to do with asymmetric access and asymmetric benefit, with regard to these rural installations.

This is a quick sociology lesson. Here is the largest portion of Indians that you can reasonably describe as being middle-class, having anywhere approaching a bourgeois lifestyle. But then, within rural India, you have a large group over here, which is relatively privileged, land-owning, agriculturally involved, they have the best land, the largest land-holdings, are traditionally agriculturalists. They have access to capital, access to social and educational resources, and in fact can be politically powerful as well.

On the other hand, over here you have artisanal groups, I would say that's a euphemism, for some are involved in activities such as solid waste management. They may be underemployed for large parts of the year, outside the harvest season, so they are involved in a range of different kinds of quasi-entrepreneurial activities to make a go of things when they're not serving as share croppers.

As a matter of fact, the larger effect of putting in these kinds of installations, in the short term anyway, is that India and other South Asian developing countries are likely to grow their middle classes quite swiftly, and these groups can become bourgeois in various ways, without necessarily urbanising. Broadly, I would say

that's a good thing, but the downside is that we're likely to create a rural/rural rupture that's more pernicious than the kinds of hierarchies that we enjoy today.

So, how does one try to address that? I gave you three balls to juggle with. How do we actually provide services? How do we cost them, and make everything economically viable? And how do we ensure that they're socially equitable, that they provide some kind of equity of opportunity?

Using remote imaging, it's possible to get some kinds of data about an area of implementation. You can find out things like vegetation cover, soil quality, ground water potential, land use patterns, things like that. And that can help you get a sense of what is the appropriate kind of footprint for an installation. How many villages in one installation service, and so on. You can also get, from publicly available census data, an idea of language preference, or of the concentration of disprivileged Dalit or other minority communities. You can also find out the availability of institutional and infrastructural resources - public/private doctors, hospitals and diagnostic centres, pharmaceutical stores, educational centres, community centres, and telecommunication resources.

All of this can help plan a sustainable project, but it can also help you find new kinds of work flows. I apologise for not having visual information about this, it's work we're just starting on. We trying to use GPO systems to track off-line transactions, whether they're work related, or entertainment, information or kinship/migration oriented, as a means of finding strategic opportunities to try and insert hard- and software, as well as connectivity, networks, and possibilities for online transactions.

Let me quickly give you a sense of the extraordinary architectural variety that one finds. A computer in the village is not just a computer in the village. This is a community centre in somebody's living room. This is an educational institution. This is a transactional opportunity such as I described. And this is something approaching a very conventional, individualistic architecture of a cybercafé. And the same is true for the exterior of this kind of installation.

Information design, as I understand it, has to be multiscale. It stretches from the pattern on the sweater of the kiosk operator, his caste-class linguistic preferences, the character of the graphic user interface, its degree of interactivity, the quality and variety and content of services available, the architecture of the kiosk, it's location within the political geography of a rural space and region, to the network that connects these various institutions to each other.

In order to try to address that gamut of issues, what we've done is build a database of about 120 such technology-enabled installations and initiatives across South Asia, and this is shortly going to be available online (see links). What we're also trying to do is build a South Asian network of consultants and specialists. As you may know, it's sometimes not so easy to travel for economic or political reasons between South Asian countries, so this helps us to build an online community of specialists, who can trade best practices and actually drive the sector with accurate, reliable, credible data on new initiatives.

To give you a sense of the extraordinary value of this kind of database, we've used it for the last year or so in consultancy contacts, and projects for clients ranging from HP Labs to UNICEF. So what we try to do is build visualisation charts, cartographs, that describe the data that we've collected as a means of informing strategy and policy. Research, design, planning, monitoring, evaluation, strategy, policy – this range of activities must inform each other, and that really is the way for us to make this sector viable and grow it quickly.
Thanks very much.

Q&A With John Thackara

John: One of the first things I picked up from your first chart, is that we're not really talking about the nature of the interaction of the service, we're also talking about new business models. Did I understand you correctly? And is that something that has to arise from local situations, not imported with the technology, from the West or the North?
Aditya: There's plenty of opportunity for interplay. If you have a new idea, a new possibility, you can go out and look for ways to use it. But it strikes me that we

need a rich world of potential uses. That's one of the problems that we've encountered in trying to design ubiquitous technologies and such. The focus is on the product, on this new capacity, and the rest of the world has become sparse, so it's hard to think of new applications proceeding in that direction. I would recommend moving from the other side.

John: Yes, because we found when we've been there, as you mentioned, there's an incredible, immeasurable variety of transaction, activities, and lifestyles going on, whereas the technology is basically supporting the one-to-many distribution of information and services.

Aditya: Yes, that is especially the way the Indian State has begun to think about rural connectivity, as a very top-down mode of gathering information up, and then transacting. It quite unilinear. But that is not the only thing going on. There are a number of other very interesting initiatives.

John: So there aren't that many peer-to peer or citizen-to-citizen infrastructures that are working now?

Aditya: Yes, I would say more or less at a pilot or experimental stage. We haven't really scaled up in any example where you're covering something like even two per cent of rural India, no not yet.

John: We'll come back to this in the panel discussion, but basically when you looked at the mapping techniques, is that something the state finds attractive, a top-down view of reality, or is that something that local people can actually use for themselves?

Aditya: I want to bring in some of the other panellists from yesterday on this, especially David and Michael's work, because it strikes me that the visual power of what they came up with is something I'd really like to explore, to find ways of seeing things in the local landscape that are known to users, but are not known to project planners. So I think there's a lot of work to be done there.

John: I think it would be a great project, because if David thinks he has problems with pigeons in Venice, put him in the middle of Calcutta and see how his system fares there. That would be very interesting. We'll talk about it later, Aditya, thank you very much.

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