THE CENTRE FOR internet & society

THE LAST CULTURAL MILE

AN INQUIRY INTO TECHNOLOGY AND GOVERNANCE IN INDIA

ASHISH RAJADHYAKSHA

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Researchers @ Work

Histories of the Internet in India

HISTORIES OF THE INTERNET

The last two decades have marked the rise and spread of digital and internet technologies in the rapidly globalizing world. Especially in the first ten years of the 21st Century, we have seen governments fall, markets reorganized and civil societies mobilized through extraordinary civic action mediated by easy and affordable access to the everyday citizen/user. Despite the marked change that the digital revolution has ushered in a large section of emerging ICT landscapes, there is a presumption that these technologies were built in specific centres of the developed world and were seamlessly transplanted on to the developing world.

In research, policy and practice, while there is an emphasis to using digital and internet technologies, very little attention is paid to the polymorphous and localized growth and emergence of internet technologies. Although many disciplines, organisations and interventions in various areas deal with internet technologies, there has been very little work in documenting the polymorphous growth of internet technologies and their relationship with society in India. The existing narratives of the internet are often riddled with absences or only focus on the mainstream interests of major stakeholders, like the state and the corporate. We find it imperative to excavate the three-decade histories of the internet to understand the contemporary concerns and questions in the field.

The Centre for Internet and Society's Researchers @ Work (CIS-RAW) series was designed to build local intellectual resources for mapping and understanding the complex interactions between the rise of digital and internal technologies and the spheres of living that they influence. The pervasive and ubiquitous presence of Internet technologies in our rapidly globalising lives, is forcing us to revisit older concepts, formulate new frameworks, and pose new questions within academic and practice based research.

For the first cycle, CIS-RAW adopted "Histories of the Internet(s) in India" as its thematic focus. The impetus in formulating this theme was to complicate the picture of how Internet and digital technologies are perceived in existing discourse and practice. We wanted to first propose that the Internet is not a monolithic object that exists in the same way across geographies and social borders. It is necessary to approach the Internets, as plural, available in different forms, practices and experiences to people from different locations and sections of the society. This pluralistic approach allows us to break away from a grand-narrative of the Internet which generally thinks of the technology as built in the West and seamlessly transplanted on to the East and the South. It opens up the idea that the Internet can be an object, a process, an imagination, and that each of these nuances adds to how we can study its techno-social existence.

The second proposal was that while the digital and Internet technologies are new, they do not necessarily only produce new things. There is a need to map the histories and pre-histories of Internets. These histories cannot be merely historical accounts of infrastructure and access. They have to contextualise and locate the interactions between Internets and Society, through different historical approaches. The idea was to show the continuities and disjunctures that the Internets are a part of, by locating them within a larger technology complex. The histories need to show how the Internets have shaped and been shaped by various concepts, bodies and practices in India. And for this, we went to the histories that preceded the Internets as well as the futures that have been articulated around how these technologies will change the world that we shall one day live in.

To produce context specific, locally relevant and accessible histories of the Internets was the third proposal. We wanted to emphasise that while global referents can be useful in shaping a trans-national, hyperterritorial discourse around the Internet and its practices, there is a need to deepen the research through located knowledges and frameworks. We wanted to suggest that the research that emerges out of this inquiry is indeed very specific to the Indian context. It cannot simply be used as

a framework to understand another geo-political position, because it draws from specific actors' ideas that have influenced and created the complex interplay between internet technologies and socio-cultural-political-economic practices in the country. Simultaneously, we hope that the different modes of inquiry, methods by which new dialogues were generated between different disciplines, and the methods by which frameworks of inquiry were created, would be useful tools for any researcher, on any site, interested in questions of Internet and Society.

The 9 monographs in this series are dramatically different in writing styles, in subjects of study, and in length. Each one pushes the argument from a particular discipline position and concentrates on specific objects and spaces for the inquiry. And yet, it is possible to cluster them around three specific sub-themes which make visible the over-laps and the synergies between them.

I. PRE-HISTORIES OF THE INTERNETS IN INDIA

One of the attempts of the CIS-RAW research was to break away from the utopian public discourse of the Internets as a-historical and completely dis-attached from existing technology ecologies in the country. It was imperative for us to produce frameworks that help us contextualize the contemporary internet policy, discourse and practice within larger geo-political and socio-historical flows and continuities in Modern India. The first cluster of research charts three different pre-histories of the Internets while focusing on specific disciplines and practices from a technology-society point of view.

Asha Achuthan initiates a historical research inquiry to understand the ways in which gendered bodies are shaped by the Internet imaginaries in contemporary India. Tracing the history from nationalist debates between Gandhi and Tagore to the neo-liberal perspective based knowledges produced by feminists like Martha Nussbaum, it offers a unique entry point into cybercultures studies through a Feminist epistemology of Science and Technology. The monograph establishes that

there is a certain pre-history to the Internet that needs to be unpacked in order to understand the digital interventions on the body in a range of fields from social sciences theory to medical health practices to technology and science policy in the country.

This finds many parallels and linkages with Ashish Rajadhyaksha's work that is informed by the 'last mile' which has emerged as a central area of discussion in the domains of technology and governance since the 1940s in India. Beginning by mapping technology onto developmentalist-democratic priorities which propelled communication technologies since at least the invention of radio in India, the project conceives of the 'last mile' as a mode of techno-democracy, where connectivity has been directly translated into democratic citizenship. Giving a comprehensive overview of the different histories of technology mediated governance structures in the country, the monograph explores how the new state-citizen-market relationships gets radically restructured with the emergence of Internet technologies in India. The analysis looks at contemporary debates on policy, pedagogy and practice by offering a new prism to explore instances like the Unique Identity Project without falling into older partisan positions that these projects often inspire.

The third research inquiry by Aparna Balachandran and Rochelle Pinto is a material history of the internet archives, that looks at the role of the archivist and the changing relationship between the state and private archives in order to look at the politics of subversion, preservation and value of archiving. Looking at the dual sites of Tamil Nadu and Goa state archives, along with the larger public and State archives in the country, the project looks at the materiality of archiving, the ambitions and aspirations of an archive, and why it is necessary to preserve archives, not as historical artefacts but as living interactive spaces of memory and remembrance. The findings have direct implications on various government and market impulses to digitise archives and show a clear link between opening up archives and other knowledge sources for breathing life into local and alternative histories.

II. PROCESSES OF THE INTERNETS IN INDIA

One of the biggest concerns about internet studies in India and other similar developed contexts is the object oriented approach that looks largely at specific usages, access, infrastructure etc. However, it is necessary to understand that the Internet is not merely a tool or a gadget. The growth of Internets produces systemic changes at the level of process and thought. The technologies often get appropriated for governance both by the State and the Civil Society, producing new processes and dissonances which need to be charted. The second cluster looks at certain contemporary processes that the digital and internet technologies change drastically in order to recalibrate the relationship between the State, the Market and the Citizen.

Zainab Bawa looks at the emergence of Internet technologies, the rise of e-governance initiatives and the way in which the rhetoric of 'transparency' has informed different ways by which the relationship between the state and the citizen in India have been imagined. The project produces case-studies of various e-governance models that have been variously experimented within India, to see how Internet technologies through their material presence, through different paradigms of interaction, and through the imagination in policy have brought about a significant change in the state–citizen relationship.

These debates are taken to an entirely different level by Namita Malhotra's focus on pornography, pleasure and law, where she finds a new point of entry into existing debates by looking at legal construction of pleasure through different technologies of mass consumption. She revisits the arguments around pornography, obscenity and affect in recent times. Malhotra produces a comprehensive over-view of different debates, both in the West and in India, to concentrate on how the visual aesthetics of pornography, the new circuits of pornographic consumption, the privilege of affect over regulation lead to possibilities of interaction and negotiation with heternormative power structures in the country. The monograph demonstrates how the grey zones of pornography and the law's inability to deal with it, offer new

conceptual tools of understanding the spaces of digital interaction and identity.

Anja Kovacs examines another set of relationships as she explores the emerging field of online activism in India. She maps the actors, audiences, messages and methods privileged by online activism as it is emerging in India, to build frameworks which understand the ways in which such activism reconstitutes received notions of activism and activists in the country. As online activism, in the process of its materialisation, reworks master narratives, and refashions what are seen as 'appropriate' processes, methods and goals for political engagement, what are the new contours of the public sphere — of which the larger landscape of struggles for social justice in India, too, is part — is what emerges from the project.

HISTORY OF THE FUTURES OF INTERNETS IN INDIA

The third cluster looks at contemporary practices of the Internet to understand the recent histories of movements, activism and cultural practices online. It offers an innovative way of understanding the physical objects and bodies that undergo dramatic transitions as digital technologies become pervasive, persuasive and ubiquitous. It draws upon historical discourse, everyday practices and cultural performances to form new ways of formulating and articulating the shapes and forms of social and cultural structures.

The monograph on Internet, Society and Space in Indian Cities, by Pratyush Shankar, is an entry into debates around making of IT Cities and public planning policies that regulate and restructure the city spaces in India with the emergence of Internet technologies. Going beyond the regular debates on the modern urban, the monograph deploys a team of students from the field of architecture and urban design to investigate how city spaces – the material as well as the experiential – are changing under the rubric of digital globalisation. Placing his inquiry in the built form, Shankar manoeuvres discourse from architecture, design, cultural studies and urban geography to look at the notions of cyber-publics, digital spaces, and

planning policy in India. The findings show that the relationship between cities and cyberspaces need to be seen as located in a dynamic set of negotiations and not as a mere infrastructure question. It dismantles the presumptions that have informed public and city planning in the country by producing alternative futures of users' interaction and mapping of the emerging city spaces.

Nitya Vasudevan and Nithin Manayath bring to light the relationship between queer identity and technology in their work, looking at both the histories and the futures of sexuality and its relationship with internet technologies. They claim that the Internet is treated as a site of knowledge and practice, involving not just the imagined individual with his or her personal computer but also physical spaces, categories of subject formation, ways of knowing, aesthetics and modes of identification. They look at the ways in which Queerness as an identity is shaped by technology and also how the imaginations of being queer propel technology usage in new and unexpected directions. Their focus is to posit the idea of 'Queer Technologies' that challenge existing gender-sexuality debates and provide hints of what the future has in store.

Joining them in keeping a finger on the pulse of the future is Arun Menon, who enters the brave new world of gaming. His project aims to examine 'attention' as a conduit for material and non-material transactions within and outside of game worlds. This includes the internal market in the game world as well as the secondary market which operates outside of the game world. The possibilities of transaction in 'attention currency' and the intricacies of the 'attention economy / gaming economy' in the game world is explored through a series of interviews and participant observations. It produces a glossary of some of the most crucially debated terms in the field of gaming studies and also unravels the complex interplay of gamers, servers, gaming communities and how they contribute to the new gaming economies by looking at case-studies in India.

I hope that this collaborative research series initiates the first dialogues in the country around questions of Internet and Society within the academic and research communities. The monographs are all available for free downloads online and each one is accompanied by a teaching module which can help educators to introduce these questions in their classrooms. I see these monographs as the beginning rather than the end of research, and hope that the knowledge gaps identified and recommendations made by each research inquiry will lead to further collaborative endeavours in deepening our knowledge in each of the areas.

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THE LEAP OF RHODES

A fable, of our times:

A boastful nation was once bragging that nothing could bring it down. A wise bystander offered some caution: 'There is, in a distant space, something known as the 'Last Mile' that can never be bridged. Nation-states through the late twentieth century have tried to cross it, but never succeeded. How do you know you will?' 'Just show me the 'Last Mile' and I'll do it', said the boastful nation, 'I have some secret tools, and an understanding of the law, that allows me to draw the lines on where I should leap'.

'Hic Rhodus, Hic Salta', said the bystander.

So the boastful nation took out some technology from its bag of tricks, marked out a spot here, and another spot there, invented a referee, and decreed for itself that if it leaped from here to there, it will be deemed to have succeeded. And it did. **(With due acknowledgment to Aesop's Fables).**

> Bourgeois revolutions, like those of the eighteenth century, storm more swiftly from success to success, their dramatic effects outdo each other, men and things seem set in sparkling diamonds, ecstasy is the order of the day — but they are short-lived, soon they have reached their zenith, and a long Katzenjammer (cat's wing) takes hold of the society before it learns to assimilate the results of its storm-and-stress period soberly. On the other hand, proletarian revolutions, like those of the nineteenth century, constantly criticize themselves, constantly interrupt themselves in their own course, return to the apparently accomplished, in order to begin anew; they deride with cruel thoroughness the half-measures, weaknesses, and paltriness of their first attempts, seem to throw down their opponents only so the latter

The phrase arises from the Latin form of Aesop's Fables as translated from an Ancient Greek phrase. In the fable, a boastful athlete brags that he once achieved a stupendous long jump in competition on the island of Rhodes. A bystander challenges him to dispense with the reports of the witnesses and simply repeat his accomplishment on the spot: "Here is Rhodes, here, leap!"

may draw new strength from the earth and rise before them again more gigantic than ever, recoil constantly from the indefinite colossalness of their own goals — until a situation is created which makes all turning back impossible, and the conditions themselves call out:
Hic Rhodus, hic Salta! (Here is Rhodes, here, leap!) Karl Marx (1852), in the Eighteenth Brumaire of Louis Bonaparte,

Jayanagar, Bangalore, November 2010

CHAPTER ONE: *NAMING THE PROBLEM: OR, THINKING LIKE THE STATE*

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I am anxious that we should reach our people in the villages as well as in the towns with some kind of a record of the work that has been done and that is going to be done... It is not enough to give just a glimpse of something being done. It should be a longer and more educative picture and it should be taken in mobile vans to remote villages... By this means also, we shall produce that understanding enthusiasm that we wish to develop and, at the same time, a certain unity in our national planning... Ultimately, what counts is the approach to our rural millions.
Jawaharlal Nehru, quoted by B.P. Sanjay.

Backward sections do not always derive adequate benefit because of traditional barriers in the free mixing of castes and sexes in the rural community. Women, artisans, landless labourers and Harijans are represented rather sparsely in the audience. Pre-tuning of the sets to only one particular wavelength, which is generally the case, makes entertainment limited and the village listeners remain unsatisfied. A large number of sets installed, in many cases between 50 and 70 per cent, are generally out of commission for want of minor repairs, replacement of battery, etc. Lack of adequate maintenance arrangement is the biggest single obstacle in the way of community listening.
(R.K. Chatterjee on early 'rural radio listening forums' in Maharashtra in the early 1950s).

Sanjay, B.P., The Role of Institutional Relationships in Communication Technology Transfer: A Case Study of the Indian National Satellite System (INSAT), Ph.D. Dissertation, Simon Fraser University, 1989, pg 42.

R.K. Chatterjee, Mass Communication (New Delhi: National Book Trust, 1973), quoted in Sanjay pg 43.

I
THE AILAWADI PARADOX

In 2007, the former Chairman of the Haryana Electricity Regulatory Commission, V.S. Ailawadi, was changing his wires.

An electricity regulatory body is a quintessential example of what India has come to define as a 'Last Mile solution provider'. India's Central Electricity Regulatory Commission describes its mission statement as 'intended to promote competition, efficiency and economy in bulk power markets, (so as to) *improve the quality of supply and promote investments'*. A crucial part of its purpose is therefore, to 'advise the government on the removal of institutional barriers to bridge the demand – supply gap and thus foster the interests of consumers'.

In saying what he felt on the new role of such an entity, and its equally massive behemoth cousins in telecom, Ailawadi was in 2007 pushing the limits of both institutional barriers and what their removal could now mean. Version 1 of Privatization — to be summarized in one word, anti-Statism — was still in the air. 'The problem of Last Mile connectivity for ushering in the second telecom revolution', thundered Ailawadi, 'can never be resolved as long as the huge infrastructure created *with public money,* comprising copper wire and optic fibre, remains under-utilised'. 'Various technologies like Worldwide Interoperability for Microwave Access (WiMAX), Wideband Code Division Multiple Access (W-CDMA) and broadband over power lines (being) touted as alternatives' cannot work to their full capacity. The only possible solution is to unbundle the local loop. Such unbundling would bring in competition for wireless applications and broadband services not just for 45 million landlines but also for 135 million mobile users of various service providers.

So why wouldn't the big public behemoths agree to private access to their distribution pipelines? Ailawadi pours scorn on BSNL Chairman and Managing Director, A.K. Sinha's statement that 'We have built the infrastructure and why should anyone else use it? Will they pay for the salaries of the employees? 'Only in India do we treat our PSUs like sacred cows'. The Telecom Regulatory Authority of India has yet to come out with effective regulations for addressing the interconnection problems created by the incumbents, and the incumbents continue to delay links to their points of interconnection. The issue of congestion, for Ailawadi, is only due to the lack of adequate inter-connect points by BSNL/MTNL, although

these State behemoths obfuscate this issue 'on the plea of shortage of space or equipment' (V.S. Ailawadi, 'The Last Mile Problem in Indian Telecom', *Business Standard*, January 23, 2007).

The more things change, the more they remain the same. In 2011, we are using a very different language to speak of State-corporate collaborations from what Privatization Version 1 used, but in curious ways a central paradox remains as intact as ever. I want to immortalize this Ailawadi by naming the paradox after him, for I propose that his short statement sums up three key contentions that appear to be still relevant to a theory of State that I think he was trying to propound, and which I think is still relevant despite the changed circumstances of the past five years.

First, his contention that the only way that key assets such as telecom (spearheading State benefits as a whole) can be delivered to people at large, and especially to people in India's rural areas, is by opening them up to the private sector. By this he also includes an informal sector, of agencies poaching on underutilized State assets – legally or illegally. Such an emphasis on the private sector is mainly because India's state agencies – the ones who are sitting on large underutilized resources – have lost their capability to utilize these resources, and have also lost their democratic capacity to make them available to those who could have made better use of them. Why they had apparently lost this capability is, at this time (and at this stage of the argument) unknown. *Second*, the only way the State versus private players issue could be comprehended was through the language of antagonism: private players are, for him as for all those crawling out from statist woodwork spouting hyper-privatization language, inexorably posited in *opposition* to the State. To Ailawadi's argument, this opposition, this in-built antagonism, is a given. The State cannot deliver; Ailawadi therefore, wants access to State assets, and he wants them cheap. On their side, state corporations want private players out of their backyard since they would certainly not pay the state government employees their salaries.

It is however, a *third* contention that truly concerns my work. Despite this pre-programmed antagonism, what brings both state corporations and private competitors startlingly together is their common understanding of what needs delivering: that the *Last Mile problem constitutes purely a unidirectional delivery mechanism* for services. On this procedure both Ailawadi and Sinha appear entirely united. They do not dispute what needs to be delivered. The only dispute is over who delivers better. Apart from wanting private access to the unbundling process of the local loop, Ailawadi is curiously disinclined to interrogate technological statism itself, or to in any way unbundle the *reason* for why the State made such a major investment into telecom infrastructure in the first place.

How, one may ask both, did the Indian State come to acquire such significant infrastructure assets, presumably dating back to times when the Last Mile had not even been envisaged in the way it is today? Why, the sequel question could be, is the Indian State — having assembled such assets — now so thoroughly discredited so as to be rendered incapable of either using them well or delivering their benefits to the very people for whom they were meant? How did the State's investment into major communication technologies over the centuries, presumably going back to telegraph wires, find itself so uncannily become today's major *gatekeeper* of access to the 'people'? Was an obsolete theory of the State, naming it the only entity capable of representing the people, propping up an obsolete technology, or was it the other way round? In other words, was the problem merely political, or can we now read another history into the Indian State's investment into technologies of communication?

Let us speculate for a moment on what would have happened had Ailawadi's wildest dreams actually come true in 2007 and private players had simply taken over BSNL/MTNL's networks. Would the new private corporations then have simply stepped into the shoes of the old State, and simply done the State's job better (more efficiently, without corruption, etc.)? Or would such private players have needed to significantly modify the technology they had inherited?

Can it be, taking the argument further, that alternative technologies 'like WiMAX, W-CDMA and broadband over power lines' are unfeasible not only because they are too expensive, but because technological alternatives do not solve the real problem, namely the problem of the *State*? Is the Last Mile, then, committed primarily to a *retrospective* historical reconstruction, dismantling and renegotiating a State-shaped barrier to true access to 'the people'?

There are, I propose, significant consequences to the question of whether private corporate interest simply does an existing state's job better, or whether the very nature of the State is itself in renegotiation. At stake is the retrospective significance of India's history of *technological bypassing* — or crafting new technologies so as to go round State hurdles, as transistors did in the 1960s to bring us commercial radio, or the audio-cassette recorder did in the 1970s to become the quintessential smuggled object against which the Emergency would justify itself, or satellite television of the 1980s and the Internet of the 1990s — as against its opposite, *technological appropriation*. There is also the question of what it is that technology is servicing here.

This monograph follows the career of an *a priori* contradiction: one that only mandates a State mechanism to perform an act of delivery, and then disqualifies the State from performing that very act effectively. This contradiction, I will now name as the Last Mile problem. In other words, I will suggest that the problem of the Last Mile is a *conceptual* hurdle, not a physical one. As I argue in the following chapter, when put one way, the Last Mile is unbridgeable; when put another, it is being bridged all the time. The manner in which it is usually bridged often forms the grey zone of State operation, and such bridging has historically occurred either through the process of bypassing or appropriation. Conventionally, therefore, the Last Mile problem is something of a litmus test of the State's capacity to maintain its authority while at the same time modifying such authorized purpose so as to permit technologies that can bridge the Last Mile to come under its ambit, and in the process turn legitimate.

In systems that do provide alternative conduits by which to bridge the Last Mile — such as communitarian, or market-driven solutions, for example — the State conventionally seeks out two phenomena that can bridge the gap: a *miracle technology* capable of doing so, and a *legal resolution* for using such a technology for suturing a social gap that the technology shall somehow overcome. In themselves, these initiatives are not always anti-Statist, and in contrast to the conventional Ailawadi paradox, dedicated to discrediting the State, rather, they provide the means by which the State *refurbishes itself* through technological renovation. The paradox that is generated nevertheless poses further issues of how key functions of any new technology become *selectively useful for State apparatuses*, requiring functions other than the ones selected to be either banned, or made ineffective.

This is a good time to be asking the question in India. The technological flavour of the month is the biometric device. The Unique Identity Authority of India (UIDAI) expects to provide every Indian with a biometric record, thus providing them with an identity. From health to financial inclusion, from public distribution systems to the functioning of rural schools, every State benefit we can think of is looking to see how it is affected by this miracle technology. It is not the first time in modern India that we have invested the latest available technology with miracle powers. And yet, it could be that this time round, the link between technology and State is being re-investigated, and re-forged, in a way that the UIDAI's technological ancestors — radio, terrestrial and satellite communications — may not have done.

II
TECHNOLOGICAL GOVERNANCE

Around the early 1980s, Marathi playwright Vijay Tendulkar was thinking of writing a play on a real life episode set on the Emergency in Maharashtra in 1975, among the *Pardhi* tribal community of the State. Maharashtra's *Pardhi*s, a nomadic community of hunters (*Paradh* in Marathi means hunter), are a miniscule group, many of whom typically survive either as labour or as beggars in the city. It appeared that in the

early days of the Emergency, some representative members of the community were told that the radio had announced that the Government of India had declared special benefits for India's scheduled tribes. It didn't really matter what the benefits were. The community had been mentioned on the radio by name. It had been recognized. They quickly got hold of a transistor, heard this announcement on the news not once, but thrice in a row. They then took the transistor, dumped it on the table of a bewildered forest officer and eventually the local police, and demanded the announced benefits with immediate effect. The local authorities, themselves unaware of any such state policy and in any case historically inimical to the *Pardhi* community (it remains a 'criminal' tribe as listed by the notorious 1871 British Act), effectively told them to get lost. As tempers rose, the entire simmering discontent among the community peaked into a rare full-scale uprising with the looting of the police station and other government property.

Tendulkar himself was of course very interested in ways by which people could take the law into their own hands and then be as fully violent and merciless as their historical oppressors, but here was a further element in the script of primitive justice — the transistor radio, linking the remote *Pardhi*s directly to the Central Government in New Delhi, bypassing the entire local state administration and, we might add, de-clogging the system in the process. One could read a new revolutionary social collusion between the Centre and its extreme periphery, as it overcame the intermediary roadblock that was incapable of reproducing the efficiency of the new and comparatively untainted communications system.

It is probably a commonplace in the theory of political science that modern state structures are assembled on the back of modern technology. There has been significant work on how, say, modern communications systems shaped the apparatus of the modern state, how the railways, the telegraph, the radio and the satellite, and of course the atomic bomb, provided the means by which instruments of modern governance came to be assembled. There has also been, therefore, some conversation between theories of technological usage — or how, and in answer to

what need, specific technologies came to be invented — and the political needs of state governance. It follows, therefore, that the *purpose* for which technologies are *meant* — the 'how-to-use' instruction manual for technologies of governance — would be semantically linked to parent concepts derived from state ethics. It also follows that the connection is not always easily made: technologies at their origin either violate state protocols — as almost all major technologies inevitably do at their point of origin (and we can recall that xerox machines, fax copiers and satellite transmission all posed considerable difficulties for state operations at the time they were invented, and all of which have been somewhere, at some stage in their career, declared illegal) — while other technologies that are custom-built for state governance, such as electronic voting machines, for instance, or several technologies of e-governance, have had to gradually disentangle themselves from an over-determined *a priori* purpose to achieve their full technical potential. At best, then, the fit between technology and governance has been a complicated negotiation.

What happens then, when technology either *exceeds the stated purpose of its use* or *deviates* from that purpose: in either instance fitting only uncomfortably within the declared purpose of a State? One of the ways by which, from the numerous far-out technological innovations that for example, pepper the controller general of patents, designs and trademarks, some get selected for further use while others get discarded, lies in their capacity to state a social *purpose*, a means for translating that purpose into technology and to finally demonstrate its intelligibility either for the State or for the market.

For either use, it must follow that the statement of technological usage needs as much to be a *delimiter* of possibility as a *description* of that possibility: the how-to-use manual always has significant fine print on how one may **not** use new technology. Using technology against its grain, making it do things it is not meant to — whether this is the upturned bicycle used by Malegaon's power-loom weavers for a loom, or a torrent programme that uses spare processing capacity from computers — inevitably allows us to bring to the phenomenon insights well known to political

science ever since Partha Chatterjee first showed how the Indian State first come to exist and only then produced, over the years, the ethical preconditions for its existence. The purpose of my argument is to generate a debate that has not taken place sufficiently, in the role (communications) technology may have had in *defining* the ethical preconditions for the concept of the state in India, in the way technology defines an intended (as against an actual) social use. I hope to set up a conversation, thus, between political science and communications theory to see how technological governance — or how states use technologies as a means by which to deliver their benefits to citizens — could throw light on a theory of technological usage as a means of *state practice*.

III
THE LAST MILE ECOSYSTEM

My argument will therefore, make specific use of what has widely come to be called the 'Last Mile problem' in India, and in many parts of the non-Western world. What is the Last Mile and why does the Last Mile typically come to be almost always attached with the suffix 'problem'? Indeed, it is almost less a problem than a *lament*, referring typically to the notorious incapacity of delivery mechanisms in India to reach their intended beneficiaries. Whether Tsunami victims who never get food or clothing because some middleman has hived it off, or potential telecom users in India's villages, it has become a standard truism to say that *targeted benefits do not reach their destination, and they do not do so because of distortions at, not the sender's but the recipient's end*. These could be physical distortions, such as benefits not physically reaching targets, as in relief measures, or they could be *distortions of intentionality* where they do reach but are found not to translate into intended use.

So where is the failure? Is it a failure of the model or of its implementation? For the state, the intentionality issue is often a variant of the horse-and-water metaphor. For beneficiaries, it is equally often a mismatch between problem and solution. At one level, the State plays the role of the provider of the delivery conduit (without

whom it is impossible to reach any beneficiary at all), as well as the 'noise' factor that distorts the conduit. At another level, where the market now starts to provide its own distortions, the 'Last Mile problem' begins to implicate further concepts, such as Indian society's famed 'impenetrability', its opacity, its resistance to external impetus, and the ensuing difficulties posed to the 'percolation' theory by institutional corruption, power hierarchies, etc.

When this monograph started a year ago, its conceptual ambitions were simpler. I had hoped to outline some kind of social-historical account of the Last Mile. I would do so with a fundamental assumption: that in making the Last Mile a purely, or at least substantially, technological issue, the Indian State was founding its very *raison d'etre* on a misapprehension. I would challenge the assumption that this curiously resilient barrier to the people was at all technologizable. I was set to interrogate the contention that any human recipient of State benefit could ever receive State support when the conditions of doing so rendered them incapable of comprehending what it was that they were receiving. I wanted to propose that the unfortunate technologization of democratic theory that would define the purpose of technology as primarily a delivery mechanism, was forcing its practitioners to assume, first, an *evolutionary* rather than *distributive* model for connectivity, and second, to introduce a major bias for what we could see as the command model — preferring broadcast (or one-to-many) modes to many-to-many peer-to-peer formats.

Conventionally, the Last Mile has been defined as the final leg of delivering connectivity from a communications provider to a beneficiary. Typically a function of cost, the Last Mile has been relentlessly presented as primarily, or even exclusively, a technological problem. Among the standard perceptions of the Last Mile 'problem', as the Wikipedia definition shows, is the process by which any communication system has to, at some point, 'fan out' its wires and cables. Usually, this is seen as the point when the operation becomes not only physically massive, involving digging trenches and laying overhead cables, but also expensive. Enormous communication initiatives since the days of telegraphy sought to overcome this specific barrier of

delivery, moving from radio to various developments in fibre optic, wireless, free-space optics, radio waves, one-way and multiple – sender-user communications to more recent direct-to-satellite communications.

This monograph's purpose originally was to interrogate the *nature of the State* to which such a communications model commits us. The classical definition of the 'Last Mile' defines the final stage of providing connectivity from a communications provider to its ultimate recipient, and the commonest users of the term in this connotation have been the telecommunications and cable television industries. However, as the State has virtually reinvented itself in the very recent past and before our very eyes, the term has also come to mean something very much more. In recent years, especially (though not uniquely) in India, it has been used to map technological access upon developmentalist-democratic priorities: combining the two into a devastating cocktail of technology, development, governance and markets. From electronic voting machines to Web-based railway reservation facilities, from e-governance to e-commerce, the Last Mile has become the privileged mode of a techno-democracy, where *connectivity* has also been directly translated into *democratic citizenship*.

RETHINKING DEMOCRATIC SELF-INTEREST

The argument had therefore, hoped to show that, within the relentlessly technologized definition of the Last Mile, the communications barrier could well be most appropriately seen as also, and even perhaps *primarily*, a human resource issue. The technologization of human resource was not only a misconstruction of what is technologically possible (or we may say with the *Pardhis*, a *correct* construction of their use of the radio unsupported by the mechanisms of interpretation of data), but even more, a straitjacketing of the roles of *citizenship*, which may partially explain why Indian citizens may so resolutely have refused to receive state benefit under these circumstances. The endemic assumption of such a model has historically been, firstly, that it is the *sender*'s responsibility to bridge the divide, secondly that

technology can aid him to do so on its own, and thirdly and most importantly, that such technology could negate the need to define connectivity as a multiple-way partnership as it reduced the recipient into no more than an unintelligent receiver of what is sent.

This realization is itself not new: while India's social sciences have made several political arguments on how citizens have been able (or not) to act upon citizenship rights, or why citizen actions have taken the form of insurgencies and rebellions, I am curious to see if this kind of a new model of the citizen as both sender and receiver can at all fit into a new theory of *technology*. **Could the extraordinary resilience of a linear model of state development be coincident with India's abiding commitment to the idea that the next available technology would allow us to 'leapfrog' — not so much over time into a future era, but leapfrog over space — over the Last Mile barrier to finally access our resolutely elusive citizen?**

Specifically, my original question was to be that why would citizens capable of availing of supports like public distribution systems, pan cards, voter identity cards, or employment guarantee schemes, prefer to receive them from what the State would consider illegal, like the notice about offering pan cards within two weeks found on a tree in Jayanagar. Why not receive them from the State directly? The issue is *not*, I wanted to show, inefficient distribution alone. It is directly to do with self-interest. There is no evidence that the kind of market mechanisms

A.S. Bhalla explains the concept of leapfrogging as follows: the advent of new frontier technologies enable developing countries (at least some of them like the NICs) to catch up with the north or leap-frog to narrow the 'technology', 'communications' and 'economic' gaps. 'Three connotations can be given to the concept of technological leap-frogging and catching up. First, it implies narrowing of the gaps between countries at different stages of development. Secondly, it would involve the use of advanced technology in leapfrogging countries ahead of other more advanced countries. Thirdly, leapfrogging may mean that developing countries can jump some steps and avoid having to go through stages experienced by the present advanced countries. To take one example, it is feasible for many developing countries to move straight from manual operations to flexible manufacturing systems without having to experience fixed automation'. A.S. Bhalla, 'Can 'High' Technology Help Third World 'Take-Off'? Economic and Political Weekly, Vol. 22, No. 27 (Jul. 4, 1987), pp. 1082-1086.

that have illegally sprung up around State aid, offering to mediate the same aid for a fee — like the ubiquitous tout standing just outside the railway train booking counter or the Regional Transport Office — are necessarily more efficient than their legitimate counterparts sitting behind the counter. The issue is, I suspect the somewhat discomfiting and even destabilizing conditions under which the State historically constructed its citizen-subject. It is also the distinction for why, let us say, citizens would consider the NATGRID a violation of their privacy rights while happily surrendering such rights to Google (and, I will later suggest, to the Aadhaar project).

What I primarily wanted to do, then, was to make a strong plea for historically reconsidering one-way broadcast versus peer-to-peer and multiple-way debates. I felt that the issue was to reconstruct the beneficiary of any connectivity cycle as a full-fledged partner and thus to overcome the bias written into standard communications models — and therefore, several standard revenue models — that consistently tend to underplay the *significant sender/recipient* (as against the pure-recipient citizen).

While both terrestrial and satellite systems of communication require some level of peer-to-peer transmission systems to facilitate last-mile communications, it has been a common problem that unless *either* a clear focus exists on geographic areas, *or* significant peer-to-peer participation exists, broadcast models inevitably find themselves delivering as in their terminology, large amounts of 'noise' without sufficient spectrum to support large information capacity. In any such situation, the standard State strategy, as it has moved from various kinds of terrestrial systems of dissemination to satellite forms, has been to 'flood' a region with its broadcasting message, with extremely high wastage, since much of the radiated information

literally never reaches any user at all. This has in turn led to the vicious cycle of ever-increasing need for 'topping up' the information resource, and to keep expanding broadcast locations with large amounts of excess capacity to make up for the wasted energy.

On the other hand, I wanted to explore an alternative possibility — of seeing whether successful experiments bridging the Last Mile have typically been ones where *recipients were successfully integrated into the communications model both as peers and as originators and enhancers of data*. This has happened even on resolutely one-way 'broadcast' modes such as film, television and radio. However, what I had wanted to show was that whenever this happened, as with Tendulkar's *Pardhi*s, it was inevitably perceived as a problem for democracy than a solution: it became a transgressive against the grain, an act contrary to the authorized technology usage manual. This problem, I would have suggested, has sprung as much from a built-in *ideological* commitment to one-way broadcasting formats, as from technological limitations. Presented as such, the technology constituted something like a social incarnation of the problem with its bias towards peer-to-peer possibilities lying in perennial conflict with broadcast-dependent models. Rather than attempting one size that fits everything for all models to follow, I was going to suggest that what was perhaps needed was to work out different *synergies* between broadcast-dependent and peer-to-peer-enabled platforms.

What I had therefore, planned was to develop what I have later in this book called the 'leaking sieve' model of the State. A particular kind of citizen action, an extra-legal means (or at least a means exploring the grey zone of illegality) are adopted by which the State may actually do to its work properly. This could also draw our attention to public impatience with the slowness of the State to react to the changing speed information flow. The problem by this point would no longer be political alone as it found itself properly mounted upon the information model itself, as Scott Lash suggests, stating that 'technological time does not so much question progress. It is too fast for progress. Invention is so fast that we outpace the logic of

cause and effect... Technological time outpaces the determinacy of causality. It leads to a radical indeterminacy, radical contingency and chronic insecurity' (2001). Taking our *Pardhi* community again from Tendulkar's play, and putting another way with an ever-so-slight shift of the kaleidoscope, *we could see the Last Mile being bridged all the time*. Clearly, someone else, impatient at the failures of development, was bringing whatever 'can-do' means available to do what the official percolation model of technological time either cannot do or is taking too long to do.

My evidence would include the spillovers of development, the audio-cassette revolution of the 1980s, community radio, cable television, video art and the mobile phone revolution to explore this second aspect i.e., the underside of development. It would also have included the way 'use-manuals', defining the way technologies are 'meant' to be employed, have also become the basis of *social theory,* as the *violation* of their prescribed means, whether illegitimately by hackers, or legitimately by 'can-do' barefoot technologists, or proto-legitimately by leapfroggers (like the chicken-mesh antennae and WLL-M that we will be seeing later in this book), has opened out a larger problem around State gatekeeping that has historically committed us all to a linear definition of the Last Mile.

IV
DECLOGGING THE CONDUIT

So what then changed in the last year? Clearly, at one level, governance did change. What we had over the past year is the culmination of a set of movements that go back to the early 2000s. These include a new bouquet of government initiatives targeting the poor and underprivileged of the country, a brand new set of legally defined social rights, crucially the rights to information, education and food, and a technology that will now mediate between such people's rights and the State's capacity to deliver. Is this now a radical break with the past, or is this once again a classic case of Indian techno-utopia, a further instance of the saying that the more things change, the more they remain the same?

In a way the UIDAI maintains its fidelity to India's historic investment in technological utopia to the belief that technology will continue to solve the problem, whatever that might be. Even the problem itself – corruption, siphoning off resources et al., or that, as Congress spokesperson Manish Tiwari proposed last night on TV in defending the direct cash payments plan, 'the delivery system sucks' – is itself hardly new. On the other hand, however, there appears to be a different understanding of the impact technology can have on governance, and with it a somewhat unprecedented capacity to amend *governance* structures in a way that can suit technological intervention that may be quite new to modern India.

New Government Schemes: From roughly the 1980s, but in a growing rush in the early 2000s, the Government of India has been working with a growing number of centrally sponsored schemes that are primarily geared towards poverty eradication. **Harsh Mander's extremely useful history of anti-poverty programmes (APPs) places these programmes squarely in the backdrop of the radical agrarian struggles of the 1970s, and the Emergency.** He points out that these programmes have historically split into two categories: one, *self-employment programmes*, and two, programmes of *wage employment through rural public works* (RPWPs). **Mander has several issues with the former programme, and is more comfortable with the latter, but in the process also brings out the tension that the two sets of schemes have historically had with each other.** Typically, the former, the *self-employment* effort, addresses the rural credit system, and seeks to make credit structures available to end-beneficiaries through a combination of subsidies and loans. This category of government scheme, whose best known version was

Harsh Mander, 'Unconscionable Deprivation and Faltering Interventions: Rural Poverty and the Role of the State', in The Ripped Chest: Public Policy and the Poor in India, Bangalore: Books for Change, 2004, pg 141-182.

Although this programme has seen variable success, Mander points to some intrinsic problems to the very structure of extending rural credit, showing that such credit effectively works out to very high (40% and more) interest rates. Additionally,

started in 1980 as the Integrated Rural Development Programme (IRDP), and was then the ancestor to the *Swarna Jayanti Gram Swarozgar Yojana* (SJSY), which innovated with a 'cluster' model of lending not to individuals but to groups in activity clusters, may well be seen as the point of origin of what has today come to be known as the massively growing 'financial inclusion' sector. The second, the wage employment mechanism, historically associated with the Jawahar Rozgar Yojana, has since 2005 crystallized with the well known National Rural Employment Guarantee Scheme (NREGS).

in villages flush with IRDP assistance, all other formal or informal sources of credit tend to dry up, he says, leading to distress sales and further pauperization. This in many ways forms the backdrop of the financial inclusion system in which the UID initiative is so centrally involved.

As per the 11th Five Year Plan (2007-2012), there were around 99 centrally sponsored schemes operated by 27 central ministries and departments with a total budget of about Rs. 82,000 crore. These were sanctioned by the Government of India to different states under Article 282 of the Constitution of India, and were backed by the Central Government grant money, to attain 'national goals and objectives' like access to clean drinking water and sanitation to every habitation, eradicating polio and tuberculosis, making primary education universal for every female and male child, etc.

New Social Rights: Walking alongside this slew of both self-employment-through-loans and wage employment programmes has been a new, also equally post-emergency, phenomenon of a new set of *social rights*, exemplified by the Right to Information (which became an Act in 2005), the Right to Education (2009), and the forthcoming National Food Securities Act. It clearly appears that in all these initiatives, there has existed the anxiety of not repeating Emergency-type judicial activism in reading all socio-economic rights as existing on the same plane as civil and political rights. This anxiety goes alongside a parallel anxiety around the conditions under which state benefits are made available to their beneficiaries:

conditions where, as Amartya Sen puts it, 'benefits meant exclusively for the poor often end up being poor benefits'.

There is considerable theory on whether economic, social and cultural rights, many of which are non-justiciable, and some of which cannot even be directed to the state, can be treated on a par with fundamental rights. Some social rights concern direct benefits or services either provided directly by the State or by actors directly empowered by the State, while others are best considered the goals of social policy, to be delivered by independent agencies. Wiktor Osiatynski in his introduction in Re-thinking Socio-Economic Rights in an Insecure World points out that:

> *"When we talk about the enforcement of human rights and when we claim them, we always need to think what kind of action we expect from the state. Is it regulation, protection, provision of services, or something else? For each of these roles different strategies are effective. Ever since their inception in the 19th century, social rights have been the subject of constant debate. In fact, there are two debates: (1) are social rights human rights, (2) if they are, how should they be protected and enforced? These two debates are, in fact, one and very same debate for we tend to narrow the scope of rights if we want to attach to all of them the same constitutional enforcement. If all human rights should have constitutional protection, then many social rights and benefits have to be excluded from the concept of human rights. Conversely, when we acknowledge that there exist diversified enforcement mechanisms, we can define human rights much broadly.* ***This is precisely what I suggest: while insisting that all human rights are indispensable for dignity of a person I do not think that all human rights should have identical enforcement. Some of them cannot be enforceable at all.***

Wiktor Osiatynski, 'Introduction', in Nsongurua Udombana and Violeta Beširevic ed. Re-thinking Socio-Economic Rights in an Insecure World, Budapest: CEU Center for Human Rights, Central European University Press, 2006.

For Osiatynski, social rights are indispensable for providing a sense of security, but they are not absolute. They depend on the situation of the claimant who needs to *justify his or her claim* by proving the *lack of other means of subsistence* and by a

prior effort to take care of these needs before claiming rights. Importantly he notes: *we do not ask people to provide such justification in relation to civil and political rights*. Moreover, social rights are not unconditional. A claimant may be asked to make a contribution to community or larger society, whenever it is possible. Secondly, social rights can be granted within limits that should be defined by what is considered as basic needs in a given society at a given moment within available resources. It means that social rights can be adjusted to resources, to the changing character of needs, and to changes in the prevailing structures of economy or in the nature of employment.

Such a debate has taken place in India most significantly perhaps in the Right to Food campaigns. **In an important commentary on the Right to Food, Jean Dreze has argued that such a right is not easily justifiable in the sense of being enforceable in a court of law.** For example, if a girl is undernourished because of discrimination within the family, it would be hard to take her parents to court. To this pragmatic fact is of course the historic fact that in India, such rights form part of the Directive Principles of State Policy and are therefore, more *guidelines* than legally enforceable *laws*.

Jean Dreze, 'Democracy and Right to Food', Economic & Political Weekly, v 39 n 17, April 24 - April 30, 2004 pg 1723-1731.

What this needs, says Dreze, is a means by which the courts can frame additional legislation through democratic processes, clarifying how the right to food is to be realized as an *entitlement*. Dreze rejects all three arguments that he notes are currently being proposed under social rights: (i) converting some directive principles into fundamental rights (as happened with the right to education), (ii) elastic interpretations of fundamental rights to encompass these directive principles (as with the argument that the right to food is implicit in the fundamental 'right to life'), and (iii) a constitutional amendment making all directive principles justiciable. He instead argues for a new democratic approach to the directive principles, which the Constitution itself says are 'fundamental to the governance of the country'. While the Constitution does show that these principles 'shall not be enforced by any court', nevertheless it does affirm that 'it shall be the duty of the State to apply

these principles in making laws'. Dreze further quotes Ambedkar as saying, while defending the directive principles, that in a democracy, legal action is not the only means of holding the State accountable to its responsibilities. In cases where rights cannot be enforced through legal procedure, they can be asserted through other democratic means that courts can also invoke, including parliamentary interventions, the electoral process, the media, international solidarity, street action, or even civil disobedience.

For Dreze the big example is the landmark food security case initiated by the People's Union of Civil Liberties (PUCL) in 2001. Popularly known as the 'hunger amidst plenty' case, as India's food grain stocks reached unprecedented levels even as hunger intensified in drought-affected areas and elsewhere, the PUCL (Rajasthan) brought a Right to Food case against the Government of India, the Food Corporation of India (FCI), and six state governments, alleging inadequate drought relief. The case later included all Indian states, and extended its brief to address the question of chronic hunger.

PUCL vs Union of India & others, Writ Petition (Civil) 196 of 2001. See Colin Gonsalves, P. Ramesh Kumar and Anup Kumar Srivastava ed. Right to Food, New Delhi: Human Law Rights Network, 2005, for an exhaustive record of the entire legal process.

The case was pivoted around Article 21 of the Constitution, which guarantees the 'right to life', Article 39 (a) which obliges the State to direct its policy towards ensuring that the citizens have the right to an adequate means of livelihood, and Article 47 which mandates that the State shall regard the raising of the level of nutrition and the standard of living of its people as among its primary duties. They argued that the central and state governments' response to the drought situation constituted a clear violation of this right. Firstly, this was to do with the breakdown of the public distribution system (PDS). The PDS had, by then, started a system of 'targeting': restricting food to families living below the poverty line (BPL). The Supreme Court's order was that governments' should ensure that 'food is provided to the aged, infirm, disabled, destitute women, destitute men who are in danger of starvation, pregnant and lactating women and destitute children, especially in cases where they or members of their family do not have sufficient funds to provide food for them'. 'Plenty of food is available, but distribution of the same amongst the

very poor and the destitute is scarce and non-existent leading to mal-nourishment, starvation and other related problems'. The food order saw the Supreme Court direct the Central and state governments to smoothly implement a slew of major distribution programmes, including the Sampoorna Grameen Rozgar Yojana, the Mid-Day Meal Scheme, the National Social Assistance Programme which includes the National Old Age Pension Scheme, the National Maternity Benefit Scheme and the National Family Benefit Scheme, the Antyodaya Anna Yojana, the Integrated Child Development Scheme and the Annapurna scheme. With respect to the SGRY, the SC issued an order highlighting the fact that the state governments and union territories should adhere to scheme guidelines and ensure a complete ban on contractors and labour-displacing machines.

For my own argument, such a defence of social rights, and the complicated process by which social rights could be *institutionalized*, is crucial if we are to understand the manner in which the Indian State is presently bridging the Last Mile. To me the argument is significant that the key person anchoring this debate, Amartya Sen, too adopts the metaphor that we will find later in this book, what Robin Jeffery calls the 'bullet theory' of communication: 'have a message, fire it, and expect the target to be hit'. Sen speaks of the Government of India's policy of 'targeting' beneficiaries. 'The use of the term 'targeting' in eradicating poverty', writes Sen, 'is based on an analogy – a target is something fired at. The problem is not so much that the word 'target' has combative association (but rather) the fact that the analogy of a target does not at all suggest that the recipient is an active person, functioning on her own, acting and doing things. **The image is one of a passive receiver rather than of an active agent.'**

Amartya Sen, 'The Political Economy of Targeting', http://adatbank.transindex.ro/html/cim_pdf384.pdf.

TECHNO-GOVERNANCE

For Sen, the entire matter came down to how the recipient of benefit would be characterized. He wanted to take a 'more activity-oriented view of human beings' and see poverty as 'the failure of basic capabilities to function — a person lacking the opportunity to achieve some minimally acceptable levels of these functioning'.

This means that targeting a beneficiary has to take adequate note of the costs of targeting, including *informational manipulation, incentive distortion, disutility and stigma, administrative and invasive losses*, and problems of *political sustainability*.

With this we move, from new generation social benefit schemes and new social rights, to the third of our triad, i.e., technology. It is not the first time that technology has been mobilized as the epitome of good governance and exemplary producer of a new enlightened public: as something precisely capable of overcoming information manipulation, stigma, administrative losses, etc. As I will show later, with my example of television, India has had a long history of governmental techno-utopia — where technology has been presented as somehow clean, as everything that the state, in its messiness, is not — where, somehow, leaving it to technology instead of to mere human beings would make it faster, easier, more accessible, and less corruptible. Later we will also see how television broadcasting under a new governance mechanism could provide this utopian imagination, of a new mechanism that not only carried no stains of past failures, but could literally embody the virtues of new governance — the ability to be 'impartial, balanced, pluralistic, diverse, equally accessible, efficient, and incorruptible', in the words of the Supreme Court's legendary 2005 'cricket' judgment discussed extensively in Chapter 3.

A century-old ancestor to this belief in the technology's innate capacity for objectivity,

As Balaji Parthasarathy et al.'s landmark study (2005) on e-governance initiatives in the early 2000s shows, 'the defining characteristic [of] the use of computers, and sometimes connectivity, to reorganize both the functioning of the government and service delivery to citizens' is the presumption that 'increases in transaction speeds [and] ease of data storage and retrieval' *automatically signals 'transparency and accountability'*. The report goes on to show how the cultural difficulty of translating such symbolic attributes into functioning systems crippled several

Balaji Parthasarathy et al (ed), 'Information and Communications Technologies for Development: A Comparative Analysis of Impacts and Costs from India', Bangalore: International Institute of Information Technology, 2005.

major initiatives, precisely because their absolute belief in the capacity to attribute abstract democratic values into the technology itself.

Parthasarathy's study contended that e-governance programmes would never work in India unless they found a theory for 'localization': both of the specific programme being implemented as well as of the ideal itself. The report went on to say:

> Localizing information provision has at least two components to it – localizing content (linguistic and otherwise) and localizing the means of transmitting information. Linguistic localization is a beginning to localizing content, as there is a need to develop applications in local languages even while ensuring that various applications can be seamlessly integrated so that they are interoperable. While linguistic localization is essential, localization to accommodate cultural, social, economic, political, historical and environmental diversity and heterogeneity is also critical.

Parthasarathy's work provokes us to consider up-front and without delay whether the Last Mile problem is at all a technological issue, or whether we might be better off framing it in social terms. Or should we not be seeing it as an either/or? **Historians of modern science have looked at the role of the national impact of technology, and have addressed its show piece endeavour, its atomic programme, etc.** There has been little work, as far

fairness, accuracy and so forth could be in the late nineteenth century career of still photography, which attributed similar objectivity that claimed to be immune to the limitations that 'mere' human beings could ever achieve. See Ashish Rajadhyaksha, 'The Phalke Era: Contradictions of Traditional Form and Modern Technology', Journal of Arts & Ideas, no. 14-15 (July-Dec 1987). http://dsal.uchicago.edu/books/artsandideas/pager.html?issue=14-15&objectid=HN681.S597_14-15_049.gif.

Itty Abraham, Making of the Indian Atomic Bomb: Science, Secrecy and the Postcolonial State, Hyderabad: Orient Longman, 1999.

See Gyan Prakash, Another Reason: Science and the Imagination of Modern India, Princeton: Princeton University Press, 1999.

as I know, that has extended an inquiry into the methods of deployment of, say, the telegraph, the radio, terrestrial or satellite television, or information technology, into a further inquiry into how its systems could have been a source for (or, we could say with Parthasarathy, a barrier to) a theory of *governance*.

In one sense, I think, e-governance still retains some of the techno-utopia of the mid-2000s. However, the institutions concerned have widened the kind of public bodies that the RTI legislation covers. They include not only state institutions as defined in Article 12 of the Constitution for the purposes of enforcing fundamental rights, but also all undertakings and non-statutory authorities, and even a company, corporation, society, trust, firm or a co-operative society, owned or controlled by private individuals and institutions whose activities affect the public interest. Through the late 2000s, a series of major government reports have emerged, primarily on financial inclusion that open up the question of what techno-governance could now look like. We have later dealt at some length with the TAGUP (Technology Advisory Group on Unique Projects) Report published two months ago, under the chairmanship of Nandan Nilekani. Intended to 'find ways to rapidly roll out these complex systems, to achieve project objectives and sustain high levels of reliable performance', with a focus on a tax information network, a new pension scheme, a national treasury management agency, an expenditure information network and the goods and service tax (GST), TAGUP proposes a major new solution pivoted on National Information Utilities (NIU), a class of institutions that is meant to handle all aspects of IT for complex governmental projects.

As we will see later, what distinguishes the NIU, as had already distinguished the Prasar Bharati Board in the 1990s, is the new role attributed to public self-interest, and to the possibility of there being a *technological representation for that self-interest*. The system, it is claimed, would have a 'self-cleaning' mechanism that is directly linked to citizen self-interest: the system would be self-cleaning because it

was *in the resident's interest to ensure that the system has correct data, in absence of which he cannot authenticate his own identity.* Additional to self-cleansing are also several 'self-corrective forces' derived from society itself a transparency portal that can work as a positive feedback loop. Such a portal would also generate analytics about the performance of the project. Arising from public participation in the self-correcting process, a remarkable new dependency exists on crowd-sourcing as a direct feature of e-democracy.

On the one side, the NIU has the standard checklist of virtues, defined entirely through negation. So it will not be the former state; it will therefore, not have the negatives associated with state sloth. The new form of benevolent governance will directly radiate from the technology itself. The NIU will no longer be riddled by an absence of leadership, outdated recruitment processes, or an inability to pay market salaries for specialised skills. It will no longer lack opportunities and variety in assignments, or avenues of continued enhancement of professional skills and career growth opportunities. It will no longer produce a non-conducive work environment, outdated performance evaluation systems preferring seniority over merit, or untimely transfers of officers posted to handle certain project functions.

As I have suggested, in itself such techno-utopia is not new. What could be indeed new is the capacity of the concept to accommodate a democratic dimension of citizen self-interest, and, arising from that, to find a technological solution for the expression of that self-interest.

CLOUD NEOLIBERALISM

> A political economy perspective is necessary to understand the triumph of markets over governments. Governments themselves called for such a victory, in a historic death-wish. They did so to preserve/enhance the interests of their states, within the context of the emergence of a new economy, and in the new ideological environment that resulted from the collapse of statism, the crisis

of welfarism and the contradictions of the developmental state. – Manuel Castells (ibid, 1996, 147)

A key point of change that will shadow this book is a particular, elusive change in the state that coincides with the onset of what has come to be called neoliberalism. **Let us for the moment concede that what the Indian State is assembling are fairly classic neoliberal conditions of which we will see more of with the contiguity of the TAGUP report to a clutch of related documents put out by the Finance Ministry, including on Market Infrastructure Institutions (MIIs), the IT Strategy for Goods and Services Tax, and on how to make Mumbai into an international financial centre.** It is important to note that such a State bears considerable resemblance to the earlier welfare state — or at least in most cases continues to swear by the same Constitution — so it is not that easy to mark, or to calibrate, the point of change I am trying to identify. *One way to mark it is to differentiate the agendas of an older pro-market right seeking to bring down the 'license-raj' and thus roll back the State from a newer social right that sees the state as integral to its functioning, even if not solely responsible for it. According to David Harvey (2005), the classic theory of neoliberalism proposes that the State does three things: (1) the State is redefined as accountable to the same forces of market rationality as any other social agency. At the same time, (2) Neoliberalism requires* the state to develop an additional, strictly limited feature, namely as a *facilitation agency* of a certain

http://www.sebi.gov.in/commreport/ownershipreport.pdf

http://finmin.nic.in/GST/IT_Strategy_for_GST_vero.85.pdf

http://finmin.nic.in/the ministry/dept eco affairs/capital market div/mifc/fullreport/execsummary.pdf

> kind: such facilitation has to be limited to guaranteeing the *quality and integrity of money*, secure the *proper functioning of markets* through military, defence, police, and legal structures and functions required to secure private property rights and to guarantee, by force if need be, and where markets do not exist (in areas such as land, water, education, health care, social security, or environmental pollution), to create them. And finally, (3) to develop out of the process of its own redefinition a new definition of the public good. Beyond these tasks, says Harvey, it is required that *the state should not venture*. State interventions in markets, once created, must be kept to a bare minimum because, according to the theory, the State cannot possibly possess enough information to second-guess market signals (prices) and because powerful interest groups will inevitably distort and bias state interventions (particularly in democracies) for their own benefit.

My own point of difference with Harvey is that, although he adequately distinguishes the all-important neoliberal turn from the older pro-privatization right, several of his examples tend to blur that essential distinction. Harvey proposes that both the curtailment of the State's powers and the need for its accountability to market forces originate with the phenomenon of *State disinvestment, the classic example for which is for him in Thatcher's England. Thatcher, says Harvey, had set out to privatize all those sectors of the economy that were in public ownership, expecting those sales to boost the public treasury and rid the government of burdensome future obligations towards losing enterprises. Such enterprises needed* to cut down their debt and improve their efficiency and cost structures, typically through shedding labour. The aim of such disinvestment, says Harvey, was mainly to

change the political culture by extending the field of personal and corporate responsibility and encouraging greater efficiency, individual/corporate initiative, and innovation. British Aerospace, British Telecom, British Airways, steel, electricity and gas, oil, coal, water, bus services, railways, and a host of smaller state enterprises were sold off in a massive wave of privatizations. Britain pioneered the way in showing how to do this in a reasonably orderly and, for capital, profitable way. Thatcher was convinced that once these changes had been made they would become irreversible: hence the haste.

To me all of these are more strictly neoconservative moves, calling for state rollback, and would perhaps be best evidenced in India by positions such as Ailawadi's at the top of this chapter *asking that the State hive off its assets to the private sector* — or **Arun Shourie's efforts, long after relinquishing his position as India's Disinvestment Minister, to list BSNL shares and taking on BSNL unions, rather than the moves being advocated by TAGUP.**

http://www.moneycontrol.com/news/economy/bsnl-listinggood-idea-says-arun-shourie_425142.html

This brings me to my second criterion for signalling the change in the character of the State: namely, the very different role that technology — more precisely informational technology — *now plays within both the function of the State and the market. Unlike both Shourie and Ailawadi, no good neoliberal would today call for State rollback (it would be the ultimate hara-kiri* to do so!), but would rather call for a radically different *nature of State intervention. I suggest that one critical way this shift can be characterized is through shifting the very terms of political science, in their relationship to technology.*

Manuel Castells calibrates one aspect of the shift as a move from an industrial to an informational society. A hyper-industrial society is often unable to make the shift, as the former USSR couldn't, and can sink in the process. Castells says that while the informational economy is distinct from the industrial, it does not oppose its logic but rather subsumes that logic through technological deepening — which is why perhaps the subtle, if foundational, shifts in the character of the neoliberal state

can sometimes be missed, as by Harvey for instance. *This new technological process embodies knowledge and information in all processes of material production and distribution. The industrial economy has to become the informational economy or collapse, says Castells.* ***The new informational economy requires 'fundamental social, cultural and institutional transformations', the core of which includes 'financial markets, international trade, transnational production and, to some extent, science and technology, and specialty labour'.***

Manuel Castells, The Information Age: Economy, Society and Culture: V 1 The Rise of the Network Society, Malden, MA: Bachwell Publishing, 1996, pg 99-100.

My question, central to this book, is why India did not sink. Was it simply because India was not a 'hyper-industrialized' society? **More, why did India's business classes, who have historically never supported India's state development initiatives — and who, Vivek Chibber's recent history of industrial capitalism says, virtually launched a 'concerted offensive' against the idea of disciplinary planning in the immediate years after independence?** Why, when they didn't support the Indian State in the heyday of Indian nationalism, are they doing it now?

Vivek Chibber, Locked in Place: State-Building and Late Industrialization in India, Delhi: Tulika Books, 2003, pgs 3-29.

V
ABOUT THE MONOGRAPH

For approximately a year now, indeed ever since the project of the Last Cultural Mile was first dreamed up, Nishant Shah, Director-Research (Centre for Internet and Society) and I have worked on a series of research and implementation projects that would directly test the key hypotheses of this argument. Specifically, we have been interested in exploring the spaces of undergraduate education, peer-to-peer learning processes, the role of intermediate technologies, distributive mechanisms, and the processes of redefining recipients of benefit into producers of knowledge. We have together explored key concepts in projects such as the Digital Classroom, the Networked Higher Education Initiative and are about to embark with other colleagues in CSCS and CIS on a major new initiative exploring the properties of the Government of India's Unique Identity Initiative (its Aadhaar programme). All these projects have been extensively detailed in this monograph, and provide details of

much of the argument I intend to explore.

As these projects began shaping up, I started suspecting the easy hypotheses with which I had originally mounted my argument. This was not some autobiographical course-correction: the objective situation has, I am starting to think, changed in India. Indeed, in ways that could not have been anticipated a scant decade ago, the Indian State appears all set to precisely bridge the exact Last Mile through a clutch of governance and technology initiatives that I personally would have considered impossible just a few years ago. It is not, I now suspect, any more making the tired old attempt. The State seems to have restructured itself in basic ways, so that *this is no longer the old Last Mile*. Or, more precisely, there has come to be a redefinition of the Last Mile: and the new self-identity of a new *State apparatus has been moulded primarily on its claim to bridge that divide*.

As always with such change, such a redefinition has allowed us to retrospectively rethink the roles both technology and State have played even before the change came about. The purpose of this monograph now has become an effort is to try and track what I want to suggest was the pre-history of this change, although I am acutely aware that I am putting this monograph down at a time when the last word is still a long way away from being said. My major earlier preconditions have broken down, but it is yet too early to tell whether they have been replaced with anything significantly different. Is the hype surrounding what we might broadly call digital distribution systems based on anything substantial, or will this new moment too be consigned to the same fate as its major predecessors, such as the transistor-radio at the height of the welfare state, the early history of satellite communications immortalized in the Indian State's Satellite Instructional Television Experiment (SITE) of the 1970s, or the tele-visual networking across the country of the 1980s that announced the first round of economic globalization?

In the rest of this monograph, I will propose that something is indeed new, that something new is in the definitional domain, and more importantly, that newness

may well allow us a retrospective return to the key landmarks of technological change in communications in the past two decades. My newness proposition therefore is not premised upon a futuristic claim, but rather at identifying a break, from where to re-view recent Indian history and perhaps understand better what may have happened, the better to also identify what may happen in the future.

This monograph provides a set of four case studies of the Indian State. It is my contention that this set of moves constituted a salvation of the Indian State, nothing less, for failure to do so might well have led to its demise. The case studies address four technologies, television, telecommunications, networked higher education and, most recently, the Unique Identity project. Each is associated with a specific legal strategy with which the State literally redefined itself and its purpose.

In brief, I attempt to track a gradual shift of the Indian State from a narrowly geopolitical definition into one couched within a new kind of techno-legal apparatus. In this short monograph I shall focus on the period that I think constitutes the transition: one that began with the early 1980s and continued into the present. I plan to look at four moments in this time, when technology was deployed to address a specific problem of the State, and in the process defined the State just as the State defines its technology along ways that were characteristic of neither category. We will look at the Wireless-in-Local Loop (or WLL) technology that constituted the first revolution in telecommunications in the early 1990s, the arrival of satellite television also in the 1990s, the low-end IT 'device' with which the Ministry of Human Resource Development plans to use digitized distance education to increase enrolment of Indian students by five per cent of *the overall population, and lastly, the celebrated Aadhaar or Unique Identity project of the present. On all these occasions, the technology arrived at odds with the way the state functioned*, and on each of them it appeared that *the State was able, for reasons that I hope to explore, to mediate the contradictions through various often unprecedented techno-legal strategies. Two of these technologies, the MHRD's device, and the Aadhaar database, are very new, and so this will have to be very much a work-in-progress argument rather than anything*

remotely resembling a finished argument. The legal issues I expect to look at are among the early debates around telecom licensing (a very current issue, at the time of writing!), and most specifically the way the Universal Service Obligation translated a model of State subsidy into a very different market-friendly and profitable enterprise for the State. The second argument, on television, will take us back to the 1995 Supreme Court judgment on the Broadcast Bill. The third, on education, will explore some of the synergies between the draft National Council for Higher Education and Research (NCHER) Act of 2010 and the national Mission on Education using Information & Communication Technology announced in late 2008. The legality of the Aadhaar project is, at the time of writing, very much an evolving issue, and I will engage with some of the debates in relation to conventional Last Mile perceptions of what the technology is believed to be doing.

The first move, with telecommunications, shows what we may call the first Leap of Rhodes – a kind of messianic use of technology to cut through a crisis of its definition as a territorially bound geographical entity. The second move, with television, constitutes also the first step into the virtualization of the State: its identification with processes that are seemingly uncontaminated by human frailty. The third move, with the national mission for education through ICT, is also the first time that the State foundationally redraws the Last Mile. And the fourth, as the State effectively merges into the Cloud, is also one where national boundaries completely disappear.

With these changes, we also gradually see the erosion of the Last Mile, from something that constituted the 'people, the elusive silent majority to whom the State had to reach out, and into something rendered far more elusive than ever before. It remains entirely unclear as to whether, and even now, the 'people' may now be reached, or whether techno-citizenship would on its own be capable of handling these new challenges.

CHAPTER TWO: *THE WLL-M MIRACLE*

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I
SPECTRUM AND THE SCAM

As we watch the unfolding of the Rs. 1,76,000 crore 2G Spectrum Scam, by far the largest financial scandal in the history of India on our television sets, I want to rewind to a foundational conceptual problem that India is currently facing. Let us start with four seemingly autonomous facts:

Fact 1: The scale of teledensity in India is globally unprecedented. Since 2001, the number of telephones went up more than a hundredfold in less than a decade. Over the past year alone, 19 million new subscribers were added each month, and from December 2008 to now, the number of mobile phones increased from 300 million to 620 million. **The number of phones for every 100 citizens, which stood at around 48 per cent till as recently as December 2009, is currently 70 per cent, or seven phones for every 10 Indians.**

Paranjoy Guha-Thakurta and Akshat Kaushal, 'Underbelly of the Great Indian Telecom Revolution', Economic & Political Weekly, v xlv n 49, December 2010, pg 51.

Fact 2: In this same time, call tariffs roughly halved every three years, making India not only the best-connected but also perhaps the cheapest place on earth from where to make a phone call. Mobile phone tariffs, which were Rs. 17 per second in the mid-1990s, a few years after when the industry was de-regulated, came down to 25 paise per minute.

Fact 3: The scale of financial investment in this sector is again unprecedented. **Between 2003 and 2007, foreign direct investment grew from US$ 116 million to $ 920 million.** The simple fact that the current 2G scam covers an amount that could be two per cent of India's overall GDP may make the point more forcefully than any other. What is significant however is not this fact *but a related one: that this scale of private investment has not forced any financial milking of the sector. Contrary to what would have been imagined about the pressure for returns on investment being passed*

R.U.S. Prasad, Resolving Disputes in Telecommunications: Global Practices and Challenges, New Delhi: OUP, 2011, pg 164.

on to the customer; it is not becoming more expensive to make a phone call. What it has led to is, firstly, the unprecedented spread, and secondly, to major technological breakthroughs towards convergence of various resources. On the other hand, it has put enormous pressure on the one commodity that cannot be increased or diversified: spectrum.

Fact 4: Perhaps the reason for this may well be that the true value of telecommunications may only be evident now, and the revenue from phone calls may be only a tiny fraction of the overall revenue. India's banking sector is gradually readying itself for the phenomenon of mobile banking, and a number of other financial and other services are likely to expand through the country entirely on the back of rural teledensity. **As a White Paper on Financial Inclusion and Digital Payments (Indicus Analytics for IAMAI, September 1, 2008) has it, universal financial inclusion — the mantra of India's banking sector — can only happen if delivery costs of financial/transactional services, and costs of access by the poor, can be massively reduced.** This in turn could only happen if the profit motive was combined with an open entry ecosystem that could lead various players to provide services for the masses. Such services, on their part, could only take place if various forms of digital payments could be put in place through, for instance, electronic end nodes (Internet points, mobiles, telephone instruments), electronic communication (wireless or wireline), all combined with a digital stored value system. Electronic funds transfer, credit card, prepaid card, mobile banking, prepaid cards, debit cards, etc., are only some examples of the kinds of electronic money that could be used for digital payments. Human interface in digital payments would be minimal: given that the physical store of value, automatic recordkeeping and collating all require no human intervention, the cost of transactions would be extremely low — both for the provider as well as user. Therefore, even minimal of transaction fees has the potential to generate surpluses for the service provider, given of course that the scale is sufficiently large.

www.iamai.in/Upload/policy/IStdFile_12.doc.

For Guha-Thakurta, this mix of facts provides the direct backdrop to the 2G scam. The fall in call rates has expanded the market, he says, but at the same time, the rise in the number of mobile phones coupled with the intensification of competition had an important fallout on market conditions — electromagnetic spectrum or radio frequencies in airwaves that carry mobile telecommunication signals have become scarce and thus, expensive, with demand far exceeding supply. This fact, he says, is crucial in understanding the scandal that took place.

Why, we may ask, is there no easy *market* solution to this? Why, if spectrum is becoming scarce, is it proving so hard to ascribe a financial value to it? This is where matters in India get complicated. This is also where our Last Mile too kicks in. Much of this essay addresses perhaps the most significant technological crisis ever faced by the independent Indian State, and how, with what twists and turns, it was able to survive this crisis. This story may also throw more light on the question with which we ended the previous chapter: why India, unlike several industrialized socialist states, did not sink in the process of transforming into an informational economy.

Through the entire process of reconciling private economic interests with those of state development, India followed a particular, sometimes unfathomable strategy in fixing spectrum prices, as Rohit Prasad shows, and it may be worth taking a moment to detail the evolution of the process. India's mobile market is divided into 22 licensed service areas (or LSAs), categorised as either metros or A, B, or C cities depending on their revenue potential. Licenses for each 'area' are issued upon payment of a one-time fee. The two questions that such a strategy immediately asks are: first, how do 'areas' translate into an economic territory. For example, what happens when subscribers move from one area to another, or call across areas? And second, within an 'area', what does a license precisely include?

Rohit Prasad, 'Value of 2G Spectrum in India', Economic & Political Weekly, v xlv n 4, Jan 23, 2010, pg 25.

Initially, for the first two licenses in 1995, and again for the fourth license in 2001, the license fee was determined through an auction. On the other hand, the third license was uniquely given in 2001 with a very different premise: it went to government

operators for a fee that was to be reimbursed by the government.

Under the license, operators could provide cellular mobile service using either the global system for mobile (GSM) or the code division multiple access (CDMA). Licensees who provide services using either of these two technologies had to pay the fixed fee again to become eligible for offering dual technology services in their respective areas. **Each licensee was eligible for an initial spectrum assignment, but they could get additional spectrum without any upfront charge as and when their subscriber base crossed certain thresholds.** This came to be known as the subscriber linked criterion (SLC) for spectrum assignment. The SLC would vary by area and by GSM and CDMA.

Of 4.4 + 4.4 MHz (paired frequency division duplex spectrum assignment) for GSM technology in the 890-915 MHz band paired with 935-960 MHz, or 1710-1785 MHz paired with 1805-1880 MHz band; or 2.5 MHz + 2.5 MHz for CDMA technology in the 824-844 MHz band paired with 869-889 MHz band. Actual assignment of start-up spectrum was based on availability and is on a first-come first-served basis for all licensees. Prasad, ibid, pg 25.

In 2003, for reasons central to this chapter, the government further modified the terms of the area license to create a new category called the Unified Access Services License (UASL). UASL operators were free to introduce, in their selected areas, services covering collection, carriage, transmission and delivery of voice and/or non-voice messages network by deploying circuit and/or packet switched equipment.

http://india.gov.in/outerwin.php?id=http://www.dot.gov.in/uas/uasindex.htm.

Licensees could also provide voice mail, audiotex services, video conferencing, videotex, e-mail, or closed user group (CUG) as value added services over its network to the subscribers falling within its service area on non-discriminatory basis.

While the UASL was clearly a step in the direction of integration, this was also where the fee business got really complicated. The entry fee for UASL services as, Prasad shows, equated to the price that had been paid by the fourth cellular mobile licensee in the respective area. Such a process was meant mainly to determine something like an 'entry fee' for newcomers. However, as Prasad points out, a benchmarked price is appropriate only if the object being sold (in this case, a license) is the same as what everyone has, and the market conditions are similar for all. Here, in fact, the

fee paid by the fourth operator in the auction process was specifically for a cellular mobile telephone service (CMTS) licence along with start-up spectrum.

Such a method was a significant departure from methods followed in other countries, as Prasad shows, where conventionally a sizeable spectrum block would be given to the operators as start-up spectrum. Until 2007, India had about seven to eight operators per circle. In early 2008, another seven to eight licences on average per LSA were given out, doubling the number of operators in each LSA. The stated objective of the government in giving out so many licences was increasing competition in the market, and promoting the diffusion of telephony to rural areas. India's rationale for adopting a different approach was therefore, a means by which scarcity of spectrum for commercial use, with spectrum being in the possession of the department of defence, could be squared with the priority of encouraging rural teledensity.

Something else was to also happen in 2003, a historic event that has perhaps been relegated to the sidelines in the recent spectrum scam: a major Telecom Disputes Settlement & Appellate Tribunal (TDSAT) judgment in a landmark dispute. This dispute, between the Cellular Operators Association of India and the government, came to be known in popular shorthand as the WLL case, and it specifically drew attention to a curious technological development— that of a fixed telephone service that found it could move. The technology was that of Wireless-Local Loop, which came under a fixed license category. It became the WLL (M), attaching the suffix 'mobile' to its name. The capacity of a fixed service to turn mobile was originally explained away in legalese as a requirement of fixed providers in remote areas: a means of providing *connectivity*, not *mobility*. In providing mobility, the WLL not only did something for which the prevailing law of the land had no answer, but may have changed the very character of the Indian State for evermore.

In a remarkable case study of the WLL controversy, former TDSAT member R.U.S. Prasad unambiguously associates with the case the moment when telecom changed

in India, providing a globally unprecedented revolution in telecommunications. He writes:

> The ruling in the landmark WLL case led to important policy and regulatory decisions that significantly contributed to building up a business environment...This is reflected in the exponential growth in subscriber bases for both wireline and wireless services since 2003. In March 2003 the aggregate wireless and wireline subscriber base was 54.63 million. **By March 2009, the total subscriber base reached 429.72 million, reflecting a tele-density of 36.98 per hundred persons...**

R.U.S. Prasad, Resolving Disputes in Telecommunications: Global Practices and Challenges, New Delhi: OUP, 2011, pg 164.

The rest of this chapter deals with what was perhaps modern India's most classic last-mile problem, and we will work out through this chapter how the Indian State, represented here by the Department of Telecom, was able to reinvent itself to crack the problem. For many, the telecommunications revolution in India between 1994 and the early 2000s, coming on the heels of the STD-phone revolution associated with Sam Pitroda's telecom missions, constitutes the quintessential example of India's successful bridging of the last mile. I will propose that this transition was anything but easy. It was indeed a larger and more complex transition of the Indian State than communication theory usually admits.

HOW TELECOMMUNICATIONS OPENED UP

Let's start this by returning to a particular instance of what we will continue to call the Ailawadi Paradox, i.e., the curious stand-off in telecom between the irresistible force of *mobile corporate technologies* and the immovable object of *fixed state assets*. I have already proposed that there was more to the bizarre and inexplicable refusal of BSNL and MTNL to unbundle their local loop in 2007, or to make it available to mobile users, than either mere governmental pig-headedness or Ailawadi's neocon 'privatize all' anti-statism.

Through the late 1990s, India was gradually reinventing itself. In doing so it was also putting in place a new model of communication theory upon which to mount its self-redefinition. The historic role of communication theory in underpinning the self-identity of the modern state is a larger issue that I deal with in more detail in Chapter 3. **Suffice it now to say that Ailawadi's problem is perhaps best situated in the aftermath of a major development in telecom: the new telecom policies of 1994 and 1999 (hereafter NTP 94 and NTP 99), in direct conversation with major new bills and policy moves like the National Task Force on IT and Software Development (1998) and the Communication Convergence Bill (2001)`, to effectively transform the communications landscape of the country.** All the above policy documents can be seen to have addressed more or less the same problem: to put it in a sentence, how to ensure that static conflicts between the *market* and the *state* get resolved, in a new formula by which to simultaneously overcome the *Last Mile* as well. So to kill three birds with one stone, one needs to:

http://www.dot.gov.in/ntp/ntp1994.htm and http://www.dot.gov.in/ntp/ntp1999.htm.

http://it-taskforce.nic.in/govtnot.htm#annexe.

http://www.dot.gov.in/Acts/CCBill_of_pages_41.doc.

- Find a common solution by which corporate and State interests could be merged,
- Define a strategy of convergence that could bring these interests together, and thus
- Repurpose technological delivery in a way as could include its critical benchmark: India's six lakh villages, and especially those in its remote, hilly, and tribal regions.

Not easy, we would say. How they went about this may well be a bit of a case-study of what was in fact going on at this critical moment in the reinvention of both the State and the Last Mile.

We start with the NTP 99. It begins by recognizing that 'provision of world class telecommunications infrastructure and information was the key to rapid economic and social development of the country' and that, in the immediate future, 'a major part of the GDP of the country would be contributed by this sector'. So this wasn't a mere aid to a marginal issue of development. NTP 99 then reviews the somewhat chequered process of the earlier and even more significant policy of 1994 that – overcoming the astounded disbelief of many – permitted the entry of private players into telecommunications for the first time in India. The 1994 policy's objectives were to ensure the *availability of telephone on demand*, provision of *world class services at reasonable prices*, ensuring India's emergence as *major manufacturing and export base of telecom equipment* and *universal availability of basic telecom services to all villages* — all new conditions, to say the least, to the primarily welfare purpose of such policies since at least independence. What were the crucial perhaps was not the delivery mechanism, but how the finances would be raised for it. The 1994 version recognised that this would have to happen mainly through market mechanisms and that private investment would have to provide a major component of the resource gap. How it went about doing this is what we need to closely track.

In 1994, then, the government in a historic development invited, for the first time, phased private sector participation, initially for value-added services such as paging services and cellular mobile telephone services and thereafter, for fixed telephone services. After a competitive bidding process, licenses were awarded to eight cellular operators in the four metros, 14 cellular operators in 18 state circles, six basic telecom services operators in six state circles and to paging operators in 27 cities and 18 state circles. VSAT services were liberalized for providing data services to closed user groups.

Crucially, all of these licensees were to achieve a series of specific social targets within a very short deadline of three years. By 1997 (the privatization move had effectively only kicked off in 1995), one public call office (PCO) had to be set up per 500 urban population and coverage completed of all six lakh villages in the country. In its 1999 review, the Department of Telecommunications claimed that India had achieved an urban PCO penetration of 1 per 522 and provided telephone coverage to only 3.1 lakh villages. While NTP 99 worried about this shortfall, I would imagine it was not bad going. They seemed to have exceeded their PCO target and while 3.1 lakh villages were well short of six lakh, it was at least something. The real worry was arguably elsewhere. Of the 14 cellular licenses issued, only nine had gone operational. By 1999, basic telecom services by private operators had only just commenced in a limited way in two of the six circles where licenses had been awarded. While there was a rapid rollout of cellular mobile networks in the metros and states with over 1 million subscribers by 1999, most projects were facing problems. The main reason, according to both the cellular and basic operators (as NTP 99 has it), has been that the actual revenues were short of projections and the operators were unable to arrange financing.

How then, were they to find financial remuneration in bridging the Last Mile? The problem recurs again and again. As the Communication Convergence Bill of 2001 shows, the Last Mile was now three bridges rolled into one: you had to *reach the villages*, the 'rural, remote, hilly and tribal areas', you had to do this through *technological convergence*, and such convergence had also to facilitate *convergence of the market with the state*. The 2001 Bill states the objectives of the proposed Communications Commission of India as:

- the Commission shall see that the communication sector is 'developed in a competitive environment and in consumer interest',
- that communication services are 'made available at affordable cost to all, especially uncovered areas including the rural, remote, hilly and tribal areas',
- further that 'there is increasing access to information for greater empowerment of

citizens and towards economic development', that 'quality, plurality, diversity and choice of services are promoted',
- and that a 'modern and effective communication infrastructure is established taking into account the convergence of information technology, media, telecommunication and consumer electronics'.

This would require that 'introduction of new technologies, investment in services and infrastructure and maximization of communication facilities and services (including telephone density) are encouraged'.

The Convergence Bill now officially declared 'that an *open licensing policy allowing any number of new entrants*... is promoted' and with it was also promoted 'the principle of a level playing field for all operators, including existing operators... so as to serve consumer interest'. Furthering pretty similar causes, as an analyst points out, the Internet Policy of 1998 too on its sidewas ideal as a consumer-oriented and company-unfriendly license. No entry fee, no revenue share; any number of licenses, licensing to provide service in a city, any cities, in one state, many states, entire country; licensee can set up his own satellite earth stations to connect to global Internet backbones; he can deploy wireless to connect customers to his point of presence (PoP) and can even build up his own intercity infrastructure to connect the PoPs... (T.H. Chowdary, 'Telecom: Migration to Unified Multiple-Service Licenses', *Economic & Political Weekly*, September 23, 2003).

This was the backdrop for NTP 99, and its mediation between two components — the state, represented by BSNL and MTNL, and the private cellular players. NTP 99's objectives were therefore, to first, provide access to telecommunications, and make affordable and effective communications available for the citizens, and, second, provide a way that would *balance the provision of universal service to all uncovered areas, including rural areas*, with high-level services capable of meeting the needs of the country's economy.

Such privatization, which made the NTP 99 not only the fellow-traveller of the 1998 IT Task Force and the 2001 Convergence Bill but also synergized with the infamous Birla-Ambani Report or the Policy Framework for Reforms in Education of 2000, would have a complicated career on the ground, and it was to be a complex negotiation.

Let us start with the Indian State represented here by the Department of Telecommunications (DoT). T.H. Chowdary comments that the DoT may well have had a position that was globally unique: the 'liberalisation of Indian telecom has no precedent or parallel anywhere in the entire world', run as it is by a DoT that is 'policy-maker, licensor, arbitrator and operator all combined into one'. 'This composite player in the field of telecommunications was to bring into being its own competitors; it laid down the conditions of license; it decided which sectors of telecoms were to be opened to competition. In other words, the player became the rule-maker and referee' ('Telecom: Migration to Unified Multiple-Service Licenses', *EPW*, September 30, 2003).

In short, the old DoT was a classic representative of the old leaking-sieve model. This DoT was now to ensure that private telecom bodies had to meet the extraordinarily stiff demands that the government was putting on all private networks: private telephone licensees (P-Telcos) were required to put up village public telephones (VPTs), and to give 10 per cent of their connections in rural areas. In doing so, they were being supervised by the very DoT that, despite far superior infrastructure, had been unable to meet any of its own deadlines in overcoming the Last Mile. Chowdary, who has commented on this entire saga in pithy detail in the pages of *EPW* (see his 'Sense and Nonsense on Village Public Telephones', *EPW* April 6, 2002, 'Rural and Village Public Telephones: A Sensible Solution', *EPW* Sept 28, 2002, and 'Rural Teledensity', *EPW* Feb 24, 2006), asks whether it is at all possible or even financially advisable that the P-Telco could give rural telephones and VPT over such distances, given that an average distance of an un-telephoned village to the nearest BSNL exchange is approximately 25 kilometres while it is almost certainly several

hundred kilometres away from the nearest private exchange.

> And this, when the DoT itself was defaulting, year after year to the extent of thousands of VPTs on numbers solemnly committed by the DoT and the government to Parliament. *The P-Telcos were to compete not with even a government-owned company but the government department itself*. If there are any delays or disabilities encountered by the P-Telcos (for example, in securing interconnection), the P-Telcos were to appeal to the very DoT which was causing the delay and the difficulty ('Telecom: Migration to Unified Multiple-Service Licenses', *EPW*, September 30, 2003).

Adding to the problem was a curious set of issues, all of which are of vital interest to my argument, as I track the shift of the Indian State's self-definition. The licenses, we have seen, were split up state-wise, again something that Chowdary says was unique to India. This prevented private operators (P-Telcos) from economies of scale, so that, writes Chowdary, 'a P-Telco may have cellular mobile service licenses in two adjacent states. However, it was not allowed to interconnect its networks. The traffic has to be routed through the DoT, thus causing extra expenditure to the cell Telcos and to that extent making the service costlier for consumers'. And so, says Chowdary,

An STD call in Visakhapatnam to Chennai has to be handed over by the P-Telco to the DoT's TAX (Trunk Automatic Exchange) in Visakhapatnam; the DoT will carry it over 600 kms to Chennai, charging the P-Telco for 600 kms and this is happening while the P-Telco has its own long distance network up to the border of Tamil Nadu all over the 600 long kilometre distance. It could have handed over the Visakhapatnam to Chennai call to the TAX in Nellore and pay for only 100 kms instead of 600 kms.

The problem, I think, was not just that the private operators — the new messiahs of the Last Mile — had to go *physically* all the way round the blockage: they had to make something of a *discursive* detour as well, around a gigantic barrier in the shape of the Department of Telecommunications. I don't think we can understand

it as anything but a discursive detour since, as Chowdary again shows, the cheapest and best solution for overcoming the last mile was precisely to get the government to do it but, according to me, the government — more precisely, an older avatar of government — was the one agency that had disqualified itself, being resolutely committed to the idea that government was a part of the problem and not part of the solution.

> The least subsidy and least capital would be involved if the VPT obligation is placed only on the BSNL. It does not mean that the private telephone companies are to be compulsorily excluded from the provision of VPTs. They can provide VPTs at their choice. (The way forward is to) not obligate the incumbent to provide the VPTs. We may make a list of the VPTs to be provided district-wise... That means the provision of the customer premises equipment (CPE), the PT or a Public Tele-Information Centre (PTIC) comprising a PC, a telephone, a scanner and a fax machine and the connection of the CPE to the nearest network point, maybe an exchange or the point of presence (POP) of an Internet service provider. *This connection could be by radio (that is, wireless), by optical fibre or copper conductor cables or satellite. It is for the access provider to choose the least costly system and invite bids for the provision of the CPE and the access link to the nearest network or POP and their maintenance for, say, a 10-year period* ('Sense and Nonsense of Village Public Telephones', *EPW* April 6, 2002).

In a sense Chowdary's solution was close to what the NTP 99 had already proposed. The problem was not the idea but how it could be implemented, given strange and unexpected hurdles. Pradeep Baijal ('Telecommunications: Regulatory Wild West?' *Economic & Political Weekly*, February 21, 2004) takes us usefully through what we may already see as the pre-history of telecom, the regulatory moves determining the earliest history of the mobile phone in India. Following the 1994 Policy, we have seen, India liberalised its telecom network and for the first time permitted private players to enter. At that time, the license fee for private mobile operators was so high that they had introduced initial peak tariffs at more than Rs. 16 per minute for both

incoming and outgoing calls. Very soon, says Baijal, it was realised that such tariffs would lead to no growth and so, after considerable debate, the government decided to reduce the mobile operator's licence fee from Rs 20,000 crore to Rs 5,000 crore and converted the regime into revenue sharing.

II
THE WLL-M REVOLUTION

This was understandable and to that extent, implementable. What happened next — and how the government pulled itself up from becoming the hurdle to be overcome, and produced its own solution — was a totally unexpected interruption to the stable assumption that only the private cellular players with their mobile phones could solve the Last Mile problem. This was the technology of the Mobile Wireless-in-Local-Loop (WLL-M). WLL-M was an astonishing innovation in deploying Code Division Multiple Access (CDMA) capability. Baijal says that it was first introduced by BSNL when it began connecting its customers to their landline services using radio frequency signals instead of conventional copper wires and examines the compulsions before the government at the time of introduction of WLL-M. Around 1995, he says, there was a broad recognition within government circles that the Last Mile, even if it was of 25 kilometres (Chowdary's average distance to a BSNL exchange in India), the costly digging requirements and so forth made it much more convenient and cheaper to connect the Last Mile to fixed telephones through wireless.

It may be simple enough to comprehend, but this kind of technological leapfrogging has remained a characteristic of modern India functioning for decades, a move that really needs independent discussion and analysis as a typical game-changer strategy that the India has used more than once. WLL-M was for example a worthy successor to the legendary use of chicken-mesh antennae originally invented during the Kheda Communications Project in Gujarat, a field laboratory that ran between 1975 and 1990 with hardware that consisted of one low-power transmitter located

in the Pij village, about 50 kilometres south of Ahmedabad, which was connected to a local studio, the local Doordarshan station, and to a satellite earth station in Ahmedabad. At Kheda, the Space Application Centre (SAC) had experimented with cheap aluminium antennae and primary TV sets in 2,400 villages receiving direct television signals from the ATS-6 satellite. The antennae had a three-metre diameter and costs Rs. 1,500, could be installed in a village in a few hours, and the mesh allowed strong winds to pass through, thus eliminating the need to build a strong support structure for the antenna. This went alongside ruggedised television sets that could withstand wide variations in voltage, vibration during transportation, and extreme conditions of heat, dust, and moisture. The SAC would use these for some years under the Satellite Instructional Television Experiment (SITE) before discontinuing the system for similar reasons that WLL-M would now face, such as the tension with market forces as represented, in SITE's case, by commercial television and with WLL-M by the private mobile phone licensees.

It may be worth a small detour to understand WLL-M technology a little, the better to comprehend why it played such a key role in marking a discursive shift in the very definition of India. **By the mid-1990s, as Mugo Kibati and Donyaprueth Krairit show in their work on Kenya and Thailand, a global consensus had been arrived on the role of WLL as a leapfrogging device: wireless was the only really feasible solution to the severe dearth of communications infrastructure in developing countries, and that in the short term wireless networks were the only means by which the information infrastructure gap in developing countries could be overcome.** A 'loose formula' had been arrived at, of employing fixed cellular networks for local loops (in the form of wireless local loop) and satellite transmission for long distance and international

http://dspace.mit.edu/bitstream/handle/1721.1/1486/kibati_krairit.pdf;jsessionid=9B1396FE1FB25D8E92513C824FC39975?sequence=1. The purpose of the authors was primarily to show that 'holding out for poor economies to grow before installing data infrastructure is a sub-optimal solution which is dominated by the superior economic strategy of incorporating

communications. It is the purpose of Kibati and Krairit to show how, even with this technology, the dominance of voice-centric networks was systematically marginalizing data communications. **Xia Gao et al's work at the Docomo Labs draw attention to the challenges before telecom technology in reaching the 'bottom of the pyramid'.** Their work showcases the Grameen Telecom (GTC), which has succeeded in providing wireless telecommunication services to 100 million rural inhabitants in 68,000 villages in Bangladesh, and works through strategic partnership with local banks that provide loans to, and collect payment from, village phone operators (VP). Each VP runs its own public call office in a village and derives its profit from the difference between the air time charges paid by villagers and the billing amount from GTC.

Xia Gao, Xiaohong Quan, Ravi Jain, Toshiro Kawahara and Ged Powell 'Wireless Local Loop at the Bottom of the Pyramid', Docomo Communications Lab USA, http://www.docomolabs-usa.com/pdf/PS2003-129.pdf.

data communications as an integral part of the growth policies', and showed that 'data communications should be just as pressing a concern as voice communications and should inform the legal, regulatory, market and spectrum policies of developing countries'. Note that our argument has not even arrived at data processing so far.

The Indian equivalent of the GTC was in Tamil Nadu, the pioneering and under-discussed SARI (Sustainable Access in Rural India) project of Ashok Jhunjhunwala at IIT Chennai, initiated in early 2001 with support from Harvard and MIT, and managed since November 2001 by n-Logue Communications. SARI, sometimes claimed as the moment when WLL took root in India, set up kiosks in Tamil Nadu villages providing telephone, Internet and other stand-alone computer services to villagers. **Self-employed local entrepreneurs were supported to run kiosks in a manner similar to the *Grameen* model.**

For more on the n-logue model developed in partnership with IIT, Chennai, see Nirvikar Singh, 'Information Technology and Rural Development in India, 2004. (http://www.idfresearch.org/pdf/singh.pdf). For a short statement by Ashok Jhunjhunwala on n-logue see http://www.tenet.res.in/News/NewsIndex/Press/digi_partners.php.

The DoT's own adoption of the WLL, or why and how it came to enable limited mobility to WLL, has not been researched yet: M.F. Ansari's brief report for the Asia Pacific Telecommunity studies on rural telecommunications says that the first revolution began with technologies used for rural coverage. He says it all began in the early 1980s when DoT imported Multi-Access Rural Radio (MARR) systems from Japan and Italy to provide public telephones in villages. **By the early 1990s, the DoT was looking for a combination of underground cable, satellite and fixed WLL.**

http://www.itu.int/ITU-D/pdf/fg7/apt004.doc

By 2000-01, DoT was reporting that they planned to provide over one million telephone connections based on wireless local loop (WLL) technology, and that of the target of 5.3 million connections for the year (including MTNL targets), as many as a fifth would be provided through WLL systems. **By this time private operators were opposing the launch of both this service and MTNL's October 1999 low-cost CDMA service mainly on the grounds of cross-subsidization.**

See the International Telecommunications Union's India case study, 'The Fixed-Mobile Interconnection: The Case of India', http://www.itu.int/osg/spu/ni/fmi/casestudies/indiaFMI_final.pdf

Was the technology violating the nature of the license? For the same reason that cellular operators working in two neighbouring networks had to use DoT to connect them when it could have been both cheaper and easier to have consolidated their own assets, WLL-M too now had a contractual problem: they had a fixed telephone that suddenly found that it could move. The telephone could move, but the *fixed licence norms said that it could not move*. Suddenly, also, evolving technology had gradually increased the Last Mile to become the last several miles, and the fixed instrument to become that much smaller, neither of which had been envisaged either by the licenses, or by the already beleaguered private mobile operators.

Recognizing that all the telephones could not be monitored for not being moved, and since there was a demand for limited mobility, and also as some kind of strengthening of fixed services was needed, the government allowed limited mobility in 2001. However, how limited was limited mobility to be, asks Baijal. Some countries have allowed limited mobility within a tower. But, he writes, 'everyone is aware that a tower of CDMA technology breathes, meaning that at times of

maximum traffic the coverage radius is very small whereas at times of low traffic the radius is very large. Thus, the telephone moves for a variable distance — not a very practical proposition'. And so in India, it was decided that the telephone should only move within a short distance charging area (or SDCA) or, which was a local call area. This too was easier said than done. Operators, through call forwarding (basically allowed for fixed telephones and also through multiple registrations) converted this limited mobility to almost full mobility. Although technically not a violation of the license, it was widely perceived as a violation of its spirit, whatever that may be— the ironic situation of the government being the major breaker of its own law. The issue now was, should the regulator recommend that the service be banned, leading again to endless litigation, or should a full-scale cellular service be recovered permitting the licensee as good a cellular mobility as possible? Our Ailawadi paradox was all set to grow into a full scale war.

The government chose to give WLL-M operators virtually full cellular status, not only says Baijal because it reduced litigation and also because it increased income to the government. Obviously, the cellular service providers were not liking this sudden development one bit, and to add to the WLL-M problem, several independent licensed services issued under NTP 1994 had stopped making sense due to other technological developments such as radio paging, auto text and video text, voice mail, etc. The result, says Baijal, was that even before a service licensee could fully realise his investment, his activity was threatened or made redundant due to technological development in another area. The blurring of technologies led to further disputes and often to litigation with claims on government for providing compensation. Time was being wasted on litigation, he says, rather than on promoting growth in the sector. An *Economic & Political Weekly* editorial ('At the Root: Defective Policy', Jan 18, 2003) notes the unprecedented spectacle of 'an entire segment of any industry launching a public campaign against its regulator, accusing it of being partial to another segment'. The cellular industry formally held that WLL was an unfair transgression into their licensed realm of mobility. Their complaint to the Telecom Dispute Settlement and Appellate Tribunal (TDSAT)

was first turned down on the ground that WLL-based mobility was a function of technological progress and could not be stopped. When the cellular industry appealed to the Supreme Court, the Supreme Court asked the TDSAT to review their decision. Meanwhile, TRAI issued a directive to Bharti Telecom, the largest cellular player, and to the cellular industry in general, to stop blocking calls from WLL-based players routed through state-owned telecom companies BSNL and MTNL. The cellular industry refused to comply with this directive, accusing TRAI of favouring the basic service licensees who also offer limited mobility. The problem by this time had come down to tariffs. Calls between cellular and fixed line phones had to bear an additional charge called the access charge, over and above the charge for use of the wireless network (airtime cost) that calls between WLL-M phones and fixed line phones did not need to pay. This made cellular phones appear expensive, whereas the difference in tariff structure was entirely a creation of the telecom regulator.

As the January 18, 2003 *EPW* editorial published:

> The government and the regulator may well bludgeon the cellular industry into quiescence, if the courts do not come to the industry's rescue. This will not solve the problem. *At the root of the controversy is the telecom policy's failure to appreciate that telecom services are now a seamless whole, thanks to technological and commercial changes, and that its segmentation into mobile, basic, Internet access, long distance, short distance, etc, is artificial.* The government's telecom policy segments the industry into separate services and awards licenses for the different segments under different terms and conditions. This is what pits the cellular industry against the WLL-mobility industry, each with its own pricing regime that makes sense in itself but creates asymmetry between the two segments.

THE UNIFIED ACCESS SERVICE LICENSE AND UNIVERSAL SERVICE OBLIGATION

The only way out of the current mess, said *EPW*, was to change the policy to *accept the reality of convergence in communications and grant a unified communications license to all those who ask for it*, subject to the availability of the frequency spectrum, the only finite resource in telecom. Parallelly, the criterion for allocation/revocation of the spectrum **can be fixed as fulfilment of a commitment to extend networks to rural areas**. Repeating the very language of the 2001 Convergence Bill, *EPW* says that licensing, pricing and operating terms for all players must be the same and the regulator must ensure that interconnect agreements are fair, provided the above commitments are met.

The purpose of this argument, or my present understanding of the Ailawadi paradox, was not how the government mediated between two components of the telecom industry and arranged for a compromise. In fact, perhaps the most useful aspect of the Ailawadi paradox would be the way an older definition of government, despite having the capacity, *disqualifies itself* on various *other* grounds: one all too familiar, that older pre-convergence communications model has by now been politically discredited, but a second a brand new one: *that the state could not function if it were both a player and a referee* – a collector of license fee, and therefore, with a direct interest in revenue generation (in a sector it has already described as capable of generating a 'major part of India's GDP'), at once a licensee as well as an adjudicator of licenses, in some hazy concept of the public good.

And so I come to what I consider perhaps the most significant move that WLL-M facilitated: the arrival of the concept of the Unified Access Service License. With NTP 99, Cellular Mobile Service Providers (CMSPs) were already able to provide mobile telephony services including permission to carry their own long distance traffic within their service area without seeking an additional license. Direct

interconnectivity between licensed cellular service providers and any other type of service provider, including sharing of infrastructure with any other type of service provider, was supposed to have become official. CMSPs were, apparently, free to provide, in their service area of operation, *all types of mobile services including voice and non-voice messages, data services and PCOs utilizing any type of network equipment, including circuit and/or packet switches*, that met relevant International Telecommunication Union (ITU)/ Telecommunication Engineering Center (TEC) standards. Such licenses, it was said, would be valid for 20 years, incorporating any future changes in technology in this time.

What changed? Let us remember that all the controversy, and the war between the cellular companies and the DoT took place in the early 2000s *after* the Unified Access Service License had been announced in 1999, and may well be seen — as the *EPW* editorial suggests — as a different and perhaps much more complex negotiation than merely a war over tariffs. My contention is that any credible solution could only arise if, under the aegis of the Unified Access License, a considerably older set of antagonisms were first resolved, and the stated antagonists, the state and the private corporate players, or we might say state and market, were able to abolish their historical discord and sit on the same side of the table, the better to be able to address the Last Mile Problem. However, I further propose, this was an impossibility *unless the public good was itself redefined*, and with it was transformed the character of the citizen-recipient as someone other than a unidirectional beneficiary of state aid.

One way out was a further innovation: the equating of the Unified Access Service License with a new definition of the public good to which all would be equally committed: a new concept of the Universal Service Obligation (USO). All licenses under the USO would be subject to a new kind of tax, or rather the creation of a market subsidy, which would then be used then to pay for the costs of all fixed service providers supplying services to rural and remote areas *regardless of whether they were private or government*. All service providers were encouraged to provide projects for remote, hilly and tribal areas under the USO, for which they would be reimbursed from

the funds from the universal access levy. This now was the way by which the NTP 99 promised that by 2002 the remaining 2.9 lakh uncovered villages in the country would receive voice and low speed data service, and Internet access would be provided to all district head quarters by the year 2000 and telephone on demand in all urban and rural areas by 2002 – and the Last Mile finally bridged.

The USO levy is today a major source in funding the Last Mile in telecommunications. Ch. Sambasiva Rao ('Universalisation of Telecom Services: The Way Forward', *EPW* October 27, 2007) says that as on February 2007, the government had collected Rs 14,276 crore till the end of February 2007 through the UASL, of which amount, the USO fund has spent Rs 4,556 crore. So what qualifies under the concept of a Universal Service Obligation? **A useful study on the USO and its issues by students of IIM-Ahmedabad (*Universal Service Obligation: A Critique of the Consultation Paper by the Telecom Regulatory Authority of India*, 2001) points to the issues.**

Universal Service Obligation: A Critique of the Consultation Paper by the Telecom Regulatory Authority of India (Arunima Patel, Bhavya Sharma, Ritu Khandelia, Roshan PF, Sandhya Chandrasekhar, 24th August 2001), http://www.iitk.ac.in/3inetwork/html/reports/IIMStudReport2001/A4.pdf.

Firstly, the obligation benefits from a specific telecom variant of the 'all-together-now' definition of the community: because it is a technical fact that the larger the number of users in a telecom network, and the larger the extent of usage, the better for all. So the first shift was to encourage overall usage of telecom, especially in rural areas. The second, more complex, was to get users to pay: a politically contentious issue that needed to overcome the very definition of subsidy into something else — into a catalyst for capability. The IIM recommendations therefore, go as follows: firstly, subsidies would need to be built into the nature of usage, and eventually paid for by subscribers. However, since usage tends to vary from person to person and from region to region, in the absence of any obligations imposed for providing universal service, an operator could on purely commercial considerations deny service to lower-revenue yielding customers even in urban areas, giving rise to cream skimming behaviour. Since the universal service provision has been based on cross-subsidies from long distance to local service and from urban to rural areas, it becomes vital that licensees find *internal* ways to subsidise their less-paying sectors rather than be subsidized by an external agency. And so it was vital that new

private players exist in both the basic service as well as long distance service, and further that a relatively simple procedure be found where all fixed access providers should have to tie in their universal service contribution (USC) to the interconnection charge. Anyone who buys interconnection services should have to pay the USC.

More complicatedly, since the cost of operation of a village public telephone (VPT) includes a fixed cost associated with running the telephone, the amount incurred in training the individual to operate the VPT, maintenance of the systems for regular billing, etc., and a variable cost associated with a telephone call alone, it was necessary, according to the IIM group, that fixed or wireless lines be offered to specific villages after taking into consideration the fixed costs of setting up each of them as well as the operational costs that would be incurred, which would be dependent on the distance of the village from the nearest service provider as well as on the expected caller revenue. This in turn would depend on the extent of affluence of the village. The group recommends that the USO subsidy should vary based on the mode of communication offered (fixed line or wireless) and the prosperity of the village. They recommend the introduction of a slab rate system of payment where, whenever the number of calls exceeds the stipulated amount, *all* the calls would be charged at a higher rate. This would ensure that only those people who can pay are charged higher.

III

THE MARKET THAT MAY NOT HAVE FAILED

> The suffusion of both the state and the subject with economic rationality has the effect of radically transforming and narrowing the criteria for good social policy *vis a vis* classical liberal democracy. Not only must social policy meet profitability tests, incite and unblock competition, and produce rational subjects, it obeys the entrepreneurial principle of "equal inequality for all" as it "multiplies and expands entrepreneurial forms within the body social"... This is the principle that links the neo-liberal governmentalization of the state

with the development of a neo-liberal social sphere and neo-liberal subjects – Wendy Brown, 'Neoliberalism and the End of Liberal Democracy' (2003)

Let me now come to my main contention on the Ailawadi paradox. I am suggesting that the telecom policies of the 2000s realized much of what he had wanted, but on a rationale quite different from what he had in mind. His position was more or less that of the old-time neocon: the state cannot deliver benefits, and is becoming an obstacle to private delivery, therefore, roll back the state and *disinvest*. Disinvestment of major state enterprises was, of course, one of the great mantras of India's first pass at globalization: the era of Arun Shourie and the privatization of steel, automobiles and natural gas. And my point *was* going to be that such disinvestment — requiring private players to take over and better deliver state welfare through the market — would never work, because the problem was not the *State* but the uni-linear hyper-centralized sender-receiver model of delivery that the state had derived from an older form of communications theory.

The Great Divide: A First Definition: We have arrived, finally, at the first of several moments when we will look across the great chasm of modern India: the divide that it was apparently the business of the last mile to overcome. Put one way, and refracted through a particular kind of developmental lens, the Last Mile is almost always a 'problem': an unbridgeable gap, a chasm between India and Bharat, with solutions only found either through going round the problem or sneaking through some kind of cavity. In its most conventional definition, this has been seen as an urban-rural problem; less conventionally, perhaps, as a class divide between the tired categories of 'haves' and 'have-nots'.

By the mid-1990s, however, the nature of the economic divide was gradually becoming more complex, as also the role that communications theory could play in overcoming such a divide. C.P. Chandrasekhar and Jayati Ghosh's classic *The Market That Failed: Neoliberal Economic Reforms in India* (2002) proposes that the real divide was not so much a divide as an economic contradiction: between two very different

roles that India was playing, which were in the long run incompatible. These were, on one side, that historically the primary means by which India has kept its domestic markets going was through state expenditure: 'continuous growth in state spending was essential for the growth of the market since it was a key element in whatever overall dynamism that the state displayed'. On the other hand, the state was also playing the historic role of being the conduit by which large scale transfers of capital could be made to proto-capitalist groups which included 'corruption, cronyism and arbitrariness', and doing so effectively at the cost of the market's ability to develop. While the state wasn't the only means to make this happen, it was nevertheless true that the state exchequer was the most significant via media for such transfer of capital into private hands through tolerance of tax evasion, subsidies and contracts and procurement policies. The financial boom of the 1980s, say Chandrasekhar and Ghosh, in fact facilitated several developing governments that wanted to be integrated into the world economy without necessarily destabilizing their entrenched landed and industrial interests (such as India). The period of the 1980s saw in many developing countries soaring budget deficits financed by international borrowing, aided and abetted by the new lending policies of the international banking system. Chandrasekhar and Ghosh therefore, see the divide that was emerging in India as follows: on the one side, a market that can only survive through direct government expenditure. On this side, such stimulus, financed through borrowing, was leading to a surge of demand in the system — including a demand for imported goods — that was not being matched by any rise of export productivity, and could only lead to inflation and the soaring of current account deficit.

The great divide here is not any simple urban-rural or have-have-not divide: it is a divide between two *conflicting responsibilities of the State*. On the one hand, the State is more or less singlehandedly propping up domestic markets, and on the other hand, its other purpose, of facilitating transfers of capital for a political class prevents such markets from ever developing into a truly effective means of disciplining economic activity. What they would have liked India to do was to widen its domestic market through structural change, use land reform and direct taxation

to control revenue deficits, and implement stringent import controls. What the government did in fact do was, firstly, to significantly reduce controls on capacity creation, production and prices, and let market forces influence all operational decisions by domestic and international agencies. Secondly, to reduce the presence of state agencies in production and trade except where market failure necessitated State intervention, and finally of course by liberalizing the financial sector and allowing the entry of global financial institutions into the country.

We need to note that the market isn't by itself the problem here, but that it has morphed into something more subtle: and this addresses the capacity of the market to become something more than itself. Neoliberalism, the communication systems for which I think we are seeing telecom assemble in India today, has been a confusing concept for many, and I further suspect that India may have its own take on neoliberal functioning somewhat different from its West European or American model. Most historians of the concept speak of the rise of economic rationality as the dominating principle for everything: as Wendy Brown has it, a moment when *homo oeconomicus* would reduce, or elevate perhaps, all aspects of human life to market rationality. **This may well not be old-time anti-statism but rather the difference between what Prabhat Patnaik has called a 'transcendental marketism' as against a 'contextual marketism'.** If the old idea was to roll back the state, the new seems to involve, Brown says, a normative rather than ontological claim about the pervasiveness of economic rationality. What the new state needs to do is to build institutions, policies, and discourses around development appropriate

Patnaik defines 'transcendental marketism as one that makes its case 'on general principles... One can distinguish at least three separate strands (in the argument): the standard neoclassical argument of efficiency of resource-use, from which follows the prescription that 'prices should be got right' (and carries the) implicit assumption that the economic universe is characterised by all-round linearities. State intervention distorts prices and causes inefficiency of resource-use, from which it follows that 'liberalisation', both external and internal, is essential for

to such a claim. Neoliberalism is therefore, a 'constructivist project', one that takes as its task the development, dissemination, and institutionalization of such rationality.

The question before us is what this new formulation does to our leaky sieve theory. It is probably too early to tell, but I think that both the Unified Access License and the Universal Service Obligation were probably game-changers, the consequences of which we can only now understand and explore. I think that the telecommunications imbroglio gives us a ringside seat on a somewhat foundational change that seems to be going on in India, where the very concept of the last mile got transformed. The gun that would shoot the 'message' has a very different target now. It doesn't of course mean it can deliver any better.

Clearly such a rationality was being attempted in my telecom example, most directly in the way the Unified Access Service License made State PSUs tow the same economic line as their corporate cousins: downgrading the DoT into being a player rather than the referee and at the same time upscaling it into becoming a full-scale cellular player. It was also evident in the way both state and private operators were being asked to adjust their subsidies within their overall revenue model and receive subsidies under the USO only for specific activities under their delivery mechanism to Indian villages. Sambasiva Rao (2007) points out that a major service listed under the USO is provision of broadband facilities

promoting efficiency and making economic growth viable... The second strand emphasises the intrinsic limitations of the state as an agency for economic intervention. As a fiscal authority the state tends to appease different interest groups through lower taxes and larger implicit or explicit transfers. As a producing authority the state, i.e., the state sector, is itself subject to no discipline and therefore, feels no need for imposing any internal discipline. This lack of discipline in turn is bound up with the absence of accountability: there is no agent that can be held accountable in state enterprises; there are no criteria of accountability; and there is no impersonal entity that enforces accountability. The result of all this inter alia is a growing fiscal deficit, i. e., the economy is forced to live beyond its means because a major segment of it experiences a perpetual and growing deficit. The market by contrast is essentially a disciplining device. It not only gives signals on the basis of which appropriate choices can be made, but ensures that participants who flout its discipline fall by the wayside. The third strand emphasizes... the stifling of enterprise and innovativeness that an economy with pervasive state intervention and ownership entails. The market, on this view, apart from being a purveyor of appropriate signals, and a disciplining device, is also a mechanism for unleashing enterprise, in the absence of which there is bound to be economic atrophy'. The 'contextual marketists' on the other hand recognize that 'there is no alternative to a market regime based on external and internal 'liberalisation' (since) the scope for any autonomous national economic policy has been attenuated because of the tremendous internationalisation of capital' (Prabhat Patnaik, 'International Capital and National Economic Policy: A Critique of India's Economic Reforms', Economic and Political Weekly, Vol. 29, No. 12, Mar. 19, 1994, pp. 683-689).

in rural areas. However, he says, mere provision of broadband connectivity does not enable people to obtain full potential benefits through the USO, since such benefits require that *applications*, especially income-generating ones, and *services* that lead to empowerment of rural people are provided over broadband, and these are still missing or only minimally there. The play of market forces in this aspect is limited owing to the projected limited business opportunity initially offered by rural areas, as compared to urban areas. Since the USO only pays for infrastructure costs in the areas where traffic is low, the strategy would be to pay for specific infrastructural support that would deliver the most recent technologies (3G being the current flavour) to remote areas, and then leave it to operators spilling over the saturating urban market to meet the growing rural demand with specific kinds of applications and services.

Among the most important changes in all this was the conversion of the poor rural beneficiary into a now not-so-poor *homo oeconomicus*. The single consolidated revenue model, within the cellular operator's own financial commitment as well as within the USO fund as a whole, was now coupled with the government for the very first time in independent India no longer spending money to bridge the Last Mile but *making money,* significant money, out of the process.

CHAPTER THREE: *THE TELEVISION REVOLUTION AND THE BULLET THEORY*

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'The model in their minds was that of the 'bullet' theory' – have a message, fire it, and expect the target to be hit' – Robin Jeffery ('The Mahatma Didn't Like the Movies and Why it Matters', in Arvind Rajagopal ed. The *Indian Public Sphere: Readings in Media History*, New Delhi: OUP, 2009, pg 177-8).

I

TECHNOLOGY, INFORMATION PROCESSING AND GOVERNMENTALITY: THE BROADCASTING DEBATE

In February 1995, a scant few months after the first 1994 National Telecom Policy was announced, India's Supreme Court passed a judgment in the case of the *Cricket Association of Bengal versus Ministry of Information & Broadcasting and Doordarshan*. The issue, some may recall, was around the CAB'S sale of telecast rights of the Hero Cup to TWI Sports, when Videsh Sanchar Nigam Ltd (not yet acquired by the Tatas but nevertheless considered to be purely a commercial organization with services available to anyone willing to pay for them) suddenly took on a further, national-protectionist identity. There was some similarity to this role and the one we saw the Department of Telecommunications play in previous chapter at the very beginning of the cellular revolution.

Petitioner: the Secretary, Ministry of Information & Broadcasting Vs. Respondent: Cricket Association of Bengal & anr. Date of judgment 09/02/1995. Bench: Sawant, P.B., Mohan, S. (J), Jeevan Reddy,B.P. (J). CITATION: 1995 AIR 1236 1995 SCC (2) 161 JT 1995 (2) 110 1995 SCALE (1)539.

The licensing mess: The story probably merits a detailed telling. In March 1993, the CAB first wrote to the Director General of Doordarshan saying that a six-nation international cricket tournament would be held in November 1993 as a part of its diamond jubilee celebrations, and asked how they would like to be involved. They proposed two ways: one, where Doordarshan would create 'Host Broadcaster Signal' and also undertake live telecast of all the matches in the tournament, or, two, where someone else could be commissioned to be the host broadcaster and Doordarshan

The following account has been summarized from Siddharth Narrain's very useful account of the judgment: http://www.nwmindia.org/resources/Online/pdf/The_airwaves_as_a_public_good_Review_

would only purchase non-exclusive rights to telecast in India. In either case, CAB emphasized, they would retain world rights for the telecasts. If Doordarshan wanted to host, they would have to pay US $800,000 for non-exclusive Indian rights. DD offered a maximum counter-bid of Rs. one crore, but demanded exclusive domestic rights for this amount. Some say this was done covertly, others that Doordarshan was fully aware that the CAB entered into talks with the World Production Establishment (WPE), representing the interests of Trans World International (TWI Sports), and in June announced that they had sold telecast rights to all the matches to them. This was before they had even acquired permission to telecast at all from the government, usually a formality with DD involved but which acquired new significance given the sale of uplinking rights to a private agency that was not even based in India.

of_a_landmark_judgement.pdf accessed September 10, 2010.

The CAB's deal with WPE was basically that they would grant sole and exclusive rights to them to sell/licence or otherwise exploit throughout the world the exhibition rights in the tournament. CAB only retained radio rights for the territory of India. Under the agreement CAB would receive not less than US $5, 50,000 as a guaranteed sum. If income from the rights fee exceeded the guaranteed amount, it could be wholly retained by WPE until it was eventually split 70:30 as per the agreement. If the rights fee/income received was less than guaranteed sum, WPE was to pay the difference to CAB. Importantly, WPE would pay the television license fee in advance of the start of the tournament.

Shortly after they came to know about this (by one account, Doordarshan only came to know of this deal in the newspapers), Doordarshan sent a fax to CAB stating that they had decided after all not to telecast the tournament, since India's national broadcaster considered it seriously *infra dig* to be a sub-licensee of a non-Indian commercial organization for a cricket tournament happening in India. This of course had some validity: imagine BBC being a sub-contractee for a cricket match played in England. Nevertheless, despite this snub, the government gave their no-objection to the tournament. This brought in a second state biggie into the picture,

the Videsh Sanchar Nigam Limited (VSNL), at the time the sole uplinking facility in the country and considered to be something of a purely commercial new-generation government institution. When CAB applied for VSNL participation to uplink the broadcasts they had sold to WPE, they were given an in-principle okay but told to approach the respective ministries, as well as the Telecom Commission, for (a) approval of import of earth station and transmission equipment, and (b) frequency clearance from the Telecom Commission. VSNL on its side even asked CAB which satellite they planned to use (it was to be INTELSAT) so they could go ahead and book it. It was also generally agreed that VSNL would extend to TWI-Sports the necessary coordination channels and Doordarshan the phone facility covering each location.

Meanwhile, CAB was continuing its efforts to bring Doordarshan back to the table, to get them to telecast the tournament as a sub-licensee and to negotiate some kind of shared arrangement with TWI-Sports. It appeared that some kind of compromise had been reached along the following lines: TWI-Sports and Doordarshan would split the tournament in half, cover nine matches each with their own independent equipment, crew and commentators. Each could use the other's feed but also have own commentators for matches produced by the other. TWI would not charge Doordarshan anything to pick up the signal and telecast live within India, and Doordarshan on its side would permit TWI to have a free signal for live/recorded/ highlights telecast abroad. Lastly, Doordarshan would not pay access fees to CAB, but would allow four minutes advertising time per hour (i.e., 28 minutes in seven hours) which CAB could sell to advertisers.

Just when the deal appeared all signed, the Last Mile watchdog kicked in. Doordarshan suddenly told the Cricket Board that they would not take signals from TWI, a foreign organization, or do any joint production with TWI. *Indeed, far from paying Doordarshan or paying CAB anything, if the CAB wanted Doordarshan to telecast the matches live, CAB would now have to pay Doordarshan technical charges/production fee at Rs.five lakh per match.* In such a case Doordarshan would automatically get exclusive rights for the signal generated and the parties interested

in taking the signals would have to negotiate directly with Doordarshan , a classic case of state puts barrier on Last Mile stuff.

Since no broadcasting was possible without the Last Mile problem being overcome, and since Doordarshan owned this mile, they were lowering the boom.

We return to VSNL. In October 1993 TWI wrote to VSNL seeking frequency clearance from the Ministry of Communications, and was soon given permission by the Ministry of Home Affairs both for filming the cricket matches and for using walkie-talkie sets on the grounds. Shortly thereafter, VSNL wrote to INTELSAT at Washington seeking information on uplinking timings for the TV transmission requested by CAB/TWI. Also that October, the Telecommunications Department sent a letter to the Central Board of Excise and Customs on the question of temporarily importing electronic production equipment required for transmission of one-day matches. On 2 November TWI paid US $29,640 to VSNL as fees for INTELSAT charges. On the same day, the Finance Ministry permitted TWI's equipment to be imported on certain conditions by waiving the customs and additional duties of customs.

Meanwhile on the Doordarshan front, a flabbergasted CAB wanted to know if, having asked for fees for the production and telecast of matches, Doordarshan would at least agree to let CAB keep all revenue generated from the matches, and the entire time slot for advertisements, and whether they would have the right to charge access fees, including other charges from parties abroad, if Doordarshan did indeed telecast those matches for which CAB would be paying these technical/production fees. Doordarshan summarily rejected these terms.

Three days later, the CAB filed a writ petition in the Calcutta High Court. They said that their deal with Doordarshan had fallen though, but in order to telecast at all they needed key Doordarshan facilities. They asked the court to direct Doordarshan to provide arrangements and facilities for telecasting and broadcasting of the matches by TWI. What was finally decided by the high court's interim order was

this: Doordarshan would be host broadcaster, and CAB would pay a sum of Rs five lakh per match for these facilities. The contentious revenue being collected by Doordarshan from sponsorships would be kept in a separate account until the question of how it should be divided up could be decided. Meanwhile, the court asked the Ministry of Telecommunication to decide within three days whether it should issue a license to TWI under the Telegraphs Act.

It didn't take three days. The very next day, the momentous day of November 12, the Film Facilities Officer of the Ministry of Information and Broadcasting informed the Customs Department at New Delhi, Bombay and Calcutta airports that, since TWI had not obtained the required clearances from the government for coverage of the tournament, they should not be permitted to take exposed film out of India till it was cleared by the government. That very day, Doordarshan asked CAB to provide various facilities at each match venue as this was a prerequisite for creating host broadcaster signals in India. CAB sent an immediate reply calling upon Doordarshan to telecast matches within India pursuant to the high court's order. Also on the same day the Collector of Customs, Bombay called upon CAB to pay customs duty on the equipment as there was a breach in the terms of the exemption order.

As though that was not enough for one day, the committee of secretaries met and took the epic decision that henceforth *the telecast of all sporting events in India would be within the exclusive purview of Doordarshan and the MIB*. They also decided that for the purposes of obtaining necessary clearances for telecasting different types of events for the country, a single window service would be followed where the concerned administrative ministry would be the 'nodal' ministry (NM) to which the application would be submitted. It would thereafter be the function of the 'nodal' ministry to obtain permissions from all the concerned ministry/agencies.

On November 14, the high court, clarifying its order of November 12, directed that in case the signal is required to be generated by TWI separately, necessary permission should be given by Doordarshan and/or other competent authorities. If

both Doordarshan and TWI were simultaneously telecasting the same match, and differences arose with regard to the placement of cameras, etc., such differences should be mutually worked out or, at worst, the head of the police in the place where the match was being played should decide the dispute. TWI's equipment, which had been seized by the customs authorities, should be released upon an undertaking that the same would not be used for any other purpose. VSNL should take proper steps for uplinking, and should not take any steps to defeat the orders of the court. For its part, TWI should comply with all financial commitments to VSNL.

On November 15, CAB filed the present Writ Petition No. 836 of 1993. And on that very day the Supreme Court passed an order directing the Secretary, Ministry of Communications, to hold a meeting by 4.30 p.m. that day itself and to communicate their decision by 7.30 p.m. The customs authorities were directed to release the equipment. Later that night another order was passed partly staying the orders of the Chairman, Telecommunications and Secretary, DoT. TWI was permitted to generate its own signals and the customs authorities were directed to release the goods forthwith. Also on the same day Doordarshan filed a contempt petition in the high court against CAB and another, for non-compliance with the orders of the high court. It also filed the present special leave petitions in the Supreme Court on the same day.

Overturning the 'Act': This, then, is the background to the 'landmark' Supreme Court judgment to which we shall now turn.

Sounds a little like gory pre-history? It is inconceivable today. In adhering to its gatekeeping self-image as the only agency that can bridge the Last Mile, the Indian State was taking a position consistent with its welfarist legacy. Historically, the state has been the only agency that has had the capability of enabling nationwide communications access, and with the *special plan for expansion of television* of the early 1980s, Doordarshan had reiterated its central role in being the only agency for delivering audio-visual terrestrial signals. But the stakes here were clearly different.

Other agencies were now challenging this role, claiming that they could do this better than Doordarshan and that the barrier it was posing was in fact a barrier to the growth of the market. I think the judgment now allows us to enter, more precisely than any other recent event in India's rapidly changing communications landscape, the embattled category of the recipient of the Last Mile. It certainly helps us explain why a dispute over contractual obligations could become the basis for overturning an Act that had been in existence for over 110 years in India.

The issues have direct similarity to those that faced telecom during the WLL brouhaha, but the broadcasting debate would, even more than with WLL, be directed on normative grounds: around the term 'public', the intended beneficiaries (the people of India) on whose behalf the battle was being fought out in court. Interestingly, the aggrieved party here was not the TWI whose equipment was confiscated, whose contract torn up. It was Bengal Cricket Association, and the issue was whether they had the right to sell cricket telecast rights to anyone they chose or whether Doordarshan had something of a mandatory right of first refusal, as national broadcaster, on anything uplinked from India. The CAB, backed by the Cricket Board, filed a legal suit that had they won it – would have finally released them from the tyrannical hold of Doordarshan (and VSNL) of both broadcasting and uplinking rights.

A relatively limited issue featuring sponsorship arrangements (and reported predominantly in the sports pages of newspapers) thus took on an entire new dimension when the Supreme Court chose this of all issues to deliver a judgment that opened up a new era in the definition of Indian citizenship. Abbreviated in most popular reportage into its operative five words, 'Air waves are public property', that judgment overturned an Act that had been written in 1885. The Indian Telegraph Act, modelled as the name suggests on the new technology of telegraphy, had given the Central Government 'exclusive privilege' with regard to licenses over 'any appliance, instrument, material or apparatus used or capable of use for transmission or reception of signs, signals, writing, images and sounds or intelligence of any nature

by wire, visual or other electro-magnetic emissions, radio waves or Hertzian waves, galvanic, electric or magnetic means'.

Further Definitions for the Great 'Divide': Overturning such an Act must require us to see it as overturning the foundational assumptions of the Act as well: these assumptions being that communications constituted the movement of a message from a centralized sender (sitting, let us say, in New Delhi) to a receiver in remote India. This therefore, also meant overturning the basic assumption of a technology foundational to a key model of the democratic state. I want to track the nature of change in these categories through a close reading of some key commentaries on just what public opinion thought the problem was.

As with the telecom issue, part of the debate was entirely to do with licensing norms. Most other debates however, deliberated over concerns that have been around since independence, on how the 'other' public could be accessed by centralized states through centralized communications media. **As far back as in 1966, the Chanda Committee had criticized India's policies on radio.** As Victoria Farmer (2003) outlines it, Chanda's assessments arose mainly out of concerns over the adequacy of coverage for India's plural society. The Chanda report forcefully argued that local level-program production and broadcasting was a necessary condition for developmental or educational messages to be effective. It recommended that linguistic minorities and special audiences would be better served if each region was given at least two channels, and that single-channel national programming would not close the airwaves to regional broadcasting. It contended that consumerism-driven strategies

Radio and Television: Report of the Committee on Broadcasting and Information Media. New Delhi: Ministry of Information and Broadcasting. A.K. Chanda (Chair), 1966.

When in May 1997 the judgment was transformed into a draft Bill, the proposed Broadcast Bill of May 1997, key sections included 12/3 that 'no person shall be granted license for more than one category of service', dividing terrestrial cable from DTH, and again opening a major can of worms as to whether Indian policy was ever going to comprehend convergence. 15/2 insisted that 'the licensee shall carry out the uplinking of satellite broadcast services ... from India only', a major issue at the time when such uplinking was happening mainly from Hong Kong. Part

would inevitably fail, since they would overlook the importance of providing development programming to local audiences, something only the Government was both willing and able to do. The main problem was that the existing nature of developmental programming was compromising All India Radio into a 'psychology of conformity'. There has been, said the report

> the failure to realize that human resources are decisive in all progress and that without an *informed and cooperative people*, plans for social and economic development cannot be sustained and implemented. Today 82 per cent of our people live in villages and 76 per cent of them are illiterate. Any worthwhile planning effort should inevitably be directed to bring progress and prosperity to the rural community, but the effort cannot succeed until we have established effective communion with them...

III prevented existing print news services from applying for licenses, some said mainly with the effort to target the Times of India's TV ambitions, 1/d of the restrictions list disqualified foreign equity from exceeding 49%. All of these issues opened up divides that had been absent in the debate around the judgment itself.

Twenty years later, and a decade before the Supreme Court judgment, the P.C. Joshi report commissioned by the Ministry of Information & Broadcasting and titled *An Indian Personality for Television* (1985) reprised many of Chanda's criticisms, savaging the MIB for a 'Delhi-centric' hyper-centralized broadcasting. It additionally however highlighted the role that *technology* may have in overcoming India's Last Mile that:

> Having drawn attention to the vast potential of *new technologies* as *humanizing, integrating* and *activizing* agents, we must draw attention to the vast gap between the potentialities and the actual results. *While new technologies are potentially capable of vastly reducing the rural-urban cleavage, the hiatus between the elite and the masses*, and the disparity between ethnic groups and regions, their actual utilization *is often in the opposite direction*

P.C. Joshi, An Indian Personality for Television: Report of the Working Group on Software for Doordarshan (New Delhi: Ministry of Information and Broadcasting, Government of India, 1985) Vol. 1.

> *of widening and accentuating the class, regional and rural-urban disparities.* While new technologies are potentially capable of building up national cohesion and identity, *their actual utilization is quite often in the opposite direction* of opening up Indian society to the forces of neo-colonialism and of erosion of national identity (emphases mine).

So unless we read the technology afresh, however, many last miles we bridged we would almost certainly be reinforcing old divides. Overcoming the *technological divide* didn't necessarily mean overcoming the *social divide*.

II
ABOLISHING THE DIVIDE: RESPONSES TO THE JUDGMENT

Let us with this background now revisit the Supreme Court judgment in its key paragraphs. The first, iconic, much quoted line was that:

> Monopoly over broadcasting, whether by government, or by anybody else, is inconsistent with the free speech-right of citizens.

This is perhaps simple enough. To that was a second attachment:

> State control really means governmental control, which, in turn, means control of the political party or parties in power for the time being. Such control is bound to colour the views, information and opinions conveyed by the media.

Once again, there is nothing here that is not already implicit in either Chanda or Joshi. But then comes the key turn:

> The Broadcasting media should be *under the control of the public* as distinct from *the government*. It should be operated by a public statutory corporation or corporations, as the case may be, whose constitution and composition must be such as to ensure its/ their impartiality in political, economic and social matters and on all

> other public issues. It/they must be required by law to present news, views and opinions in a balanced way, ensuring pluralism and diversity of opinions and views. It/they must provide equal access to all the citizens and groups to avail of this medium (emphases mine).

This was decisive. It was, I think, decisive in a way that the court itself may not have intended. While the Supreme Court was itself perhaps no more than envisaging the creation what came to be known as the Broadcasting Association of India, the ethical issue of how a *public as distinct from the government* could demand a public interest that separated it from market forces — was foundational. As debate grew around how to translate that judgment into a Parliamentary Act, both concepts, 'state control' and 'public' were mobilized by different commentators to mean very different things.

A brand new concept of newly energized 'public' capable of various kinds of action far more complex than merely listening to radio broadcasts was being put in place. This public, a 'property-owning public', was different from the old 'citizen' of independent India. The issue was at once both technological and political: we were getting a broadcast policy that would consider new ways of incarnating the addressee of its public policy, and everyone was now wondering how to introduce both new political attributions as well as new transmission systems at the service of *this* public, along with the new contractual arrangements by which this public could access services being geared for to address its new self-identity.

What interests me in the furore that followed was not so much the fury of the argument re-enacting the various ends of the standard ideological political spectrum, but rather how opponents, while vehemently opposed on what such a new public could stand for, were nevertheless curiously agreed on *how* this public could be accessed. A general consensus emerged on how such people should be reached that was, curiously, not all that different from the Telegraph Act's

imagination or Robin Jeffery's 'bullet' model of state: find a target, fire at it. There was little comprehension of the possibilities of technological convergence that were causing the debate to take place at all. Let us do a quick sampling.

Pro-Left constitutional authority and columnist Rajeev Dhawan, while welcoming the judgment, clearly set down what he understood by these categories:

> If regulation is not an invitation to censorship and control, commercialisation of TV is not a substitute for democracy. Selling space or channels to TV companies and regulating what they do did not quite meet the Supreme Court's declaration that the 'air waves are public property'. Institutionally this means that control must be with a truly independent body, with government intervention limited to extreme situations of national necessity. Juristically this distinction gets back to *shastric* notions that all property (other than that which is privately owned or specifically delineated for some purpose) belongs to the people. Democratically, the 'public' does not mean powerful allowing media companies - still less a 49% foreign-owned media. It means the people ('Whose TV Is It Anyway?', *The Hindu*, Bangalore, 14 February 1997)

On the other hand, and equally persuasively perhaps in its adspeak, the pro-market National Workshop on the Broadcast Bill, 1997 hosted earlier in the year by the Advertising Club, Bombay, also welcomed the judgment, but assumed that the Bill was a straightforward attempt at privatizing television in India. Like Dhawan, this document too advocated indigenism, quoting from a UNESCO Commission on communication that 'a nation whose mass media is under foreign domination cannot claim to be a nation'. It then went on to say,

> **In the ruthless, aggressive, highly competitive and cut-throat environment of the knowledge-led integrated world marketplaces, a people's very survival will be qualified by a global and fast, an efficient and accessible-to-all at low cost-to-consumer, communications/ information infrastructure.**

National Workshop on the Broadcast Bill, 1997, RAPA, IDPA, Advertising Club, Bombay, IAA (Indian Chapter), Background paper prepared by Ashok Vaishnavi, Amit Dev and Kavitha Kumar.

There was occasional recognition of the fact that future battles would not be *political* as much as over *technology*. The Radio & Television Advertising Professionals Association (RAPA) drew the National Workshop's attention to the fact that in the coming years the 'beyond-the-access-of-competition' limited supply of frequencies could fuel intense battles for the control of airwaves. This will also lead to amazing technology developments allowing the pumping through of more and more 'bytes' in increasingly narrow band-width.

Yet a third and very different interpretation was proposed by the Bangalore-based NGO journal *Voices*, that 'the public' should be seen, and addressed, as a community. This was to be through exploiting a specific provision in the Broadcast Bill for 'terrestrial radio licenses to be granted for developmental purposes'. At the moment proposed for radio, but also extendable, as the declaration made clear, to local LPT television, the proposal envisaged the active participation of the community in the process of creating news, information, entertainment and culturally relevant material, with an emphasis on local issues and concerns. With training, local producers can create local programmes using local voices. The community can also actively participate in the management of the station and have a say in the scheduling and content of programmes.

Voices For Change, Bangalore, 1:2 (1997). The statement follows the 'Bangalore Declaration on Radio', a collective statement signed by 60 NGOs during the Bangalore Consultation on Community Radio, Sept 11-14, 1996. See Voices 4:3 (1996) for the earlier statement.

The **people**, the **consumer**, and the **community** – three very different interpretations of 'the public' and, either directly or by implication, of 'the state': each radical in itself. The first, making a democratic argument for the people, attempting to ensure that the rights of the actual people are not hijacked by some mediating agency speaking in their name. The second, making a technological argument that the real challenge was to explore the properties of the bandwidth channel since the needs of the people would be fundamentally linked to the disseminative properties of the communication systems at hand. And third, a communitarian argument: translating the physical community into a broadcasting network. All three, despite their seeming differences across the left-right political spectrum, appeared strangely agreed that the judgment's assertion that 'broadcasting media should be under the

Workshop on "Equity, Diversity, and Information Technology", held at the National Institute of Advanced Studies, 1999. Kenniston and Deepak Kumar ed., The Four Digital Divides (forthcoming), http://www.mit.edu/people/kken/PAPERS/Intro_Sage.html.

control of the public as distinct from the government' – 'government' really meaning 'state' since 'state control is really government control' – and such an assumption would be both comprehensible and locally translatable.

At one level, the judgment was widely comprehended as a privatization argument, where 'control of the public' was seen as no more than a euphemism for 'corporate control of the market'. **The judgment was also widely understood in classic bourgeois public-sphere terms: as a civil society 'governed by the laws of the free market' with the new 'human being' now normalized by virtue of having access to television broadcasting.** But what would this category of 'moral human being' do to the process of communication? **Just two years after these debates, speaking not in Mumbai (where the television debate was largely centralized) but in Bangalore where the Information Technology debate was all set to take off, Kenneth Kenniston proposed that the divide was not only increasing but in fact *proliferating*: it was now not one but four divides (*The Four Digital Divides*, forthcoming).** What we may be seeing were divides — in the plural — between the rich, educated, and powerful, and those who are not; the linguistic divide mapped onto class one, between those who know English and those who don't, given that all widely-used operating systems require some knowledge of English or one of the 'Northern' languages, those who had access to tele-connectivity (for 80 per cent of the world, telephone connectivity was less than 3 per cent, home computer ownership between 1-2 per cent and Internet connectivity less

Such a public sphere 'presented itself not only as a sphere free from domination but as one free from any kind of coercion.... Such a society remained subordinate to the market's non-violent decisions, being the anonymous and, in a certain way, autonomous outcome of the exchange process'. However, it assumes, importantly for our judgment, that 'the public that might be considered the subject of the bourgeois constitutional state ... anticipate [i]n principle that all human beings belong to it', that each member of this public is, individually, a 'human being, that is, a moral person': in our instance symbolically enacted by the members of the BAI and clearly an important criterion for appointing people to that body, and lastly that such human beings had basically a 'private existence' which they by no means have to abandon in order to 'exercise their public role. For the private person, there was no break between homme and citoyen, as long as the homme was simultaneously an owner of private property who as citoyen was simultaneously to protect the stability of the property order as a private one'. Jurgen Habermas, The Structural Transformation of the Public Sphere: An Inquiry into the Category of Bourgeois Society, Mass: MIT (1991), pp. 79-87.

than half of that). To these was added the emergence of a new elite group, the 'digerati', beneficiaries of the enormous successful information technology industry and the other knowledge-based sectors of the economy such as biotechnology and pharmacology.

Among the key lessons Kenniston now required us to learn was that ICT best worked to overcome the digital divide only when it's capacity to effectively deliver basic human needs and fulfilling fundamental human rights was actually established. It was not prima facie self-evident that ICT was in every instance the best way of overcoming a social divide. In fact, introducing complex, expensive ICT equipment and infrastructure could reproduce at irrational bias that ICT possessed a magic not otherwise available. Further, says Kenniston, the most creative uses of ICT's in development may not entail computers, e-mail, or Internet access, but rather the use of other computer-based technologies, including embedded chips, satellite based information, etc., fashioned to address local needs. What was first required was an understanding of local needs, as assessed by local people, and whether ICT could at all address them. There was a frequent tendency of well-wishing government officials, officers of international aid agencies, and workers in NGOs to assume that they knew what was needed at the grassroots. Kenniston proposed that a flourishing IT sector *does not necessarily trickle down to the rest of the people*, and that the connection between a flourishing IT industry and bridging a digital divide was *complex* and *problematic*.

III
THE PUBLIC

Let me assume for purposes of argument that a change in the definition of the 'public' was happening, and let me further assume that this change was as epochal as the one in the late nineteenth century that saw the first birth of the public sphere. So who then is *this* new public, in whose name the battle was being waged? If this

was not the same old recipient of state aid but something *new*, a category capable of action – then what were its new properties and its new rights?

The term, I suggest, was being used in at least four usually independent and even conflicting ways like:

- **Being 'in the public interest':** In contrast to relatively more familiar legal definitions of the term, such as those surrounding the debates on public interest litigation, here the concept split up into two further categories. One invoked the language of classical democracy: the then I&B Minister S. **Jaipal Reddy's preface to the Bill argued that it is 'our great democratic traditions' which make it 'imperative that our citizens are well informed and given wider choice in matters of information, education and entertainment', or by the Asian Media & Communication Centre's (AMIC) suggested basic guidelines for transnational programming and advertising, which went further in equating 'concepts of democracy, peace and cooperation' with 'recognising and projecting the *family* as the basic unit of society'**. A second use, in bureaucratic shorthand, seemed to imply that the term 'public interest' simply meant 'non-commercial', for which the best example at that time was the UGC-sponsored educational TV service in the afternoons on Doordarshan. The question, non-commercial for whom?, extended the logic to suggest that anything that was not explicitly pay-TV – anything that the *public* didn't have to actually pay for, anything that did not make them homo oeconomicus – could well be characterised as non-commercial, i.e., state-subsidized. Inevitably, democracy clashed with commerce on just how suppliers of 'public interest' material could reap financial benefits, or at least incentives, from this service.

'Suggested Basic Guidelines for Programming and Advertising Content of Transnational Broadcasts', formulated at a Seminar on Legal and Regulatory Aspects of Satellite Broadcasting (New Delhi Oct 1993), AMIC/Broadcast Engineering Society of India. Repr. in V.S. Gupta/Vir Bala Aggarwal, Media Policy and Nation Building: Select Issues and Themes. New Delhi: Concept Publishing (1996), pp 126-127.

- **Having 'access to the public':** In terms of providing a representation for the public, translated into Indian conditions, this meant all political parties having access to television. But having access meant what? Having access to television to express their views, as they can on readers' pages and letters

An important legal intervention in this is Indira Jaising's writ petition at the Bombay High Court (Writ petition No. 1980 of 1986, Indira Jaising Petitioner v/s The Union of India & Ors. Respondents), where she had argued that the censoring of her statements on the Doordarshan programme Sach Ki Parchaiyan on the Muslim Women's (Protection of Rights on Divorce) Bill 1986

to the editor in newspapers, or having the right to *receive* television? **Although explicitly stated as an important function of broadcast media by the Supreme Court judgment and touted by most commentators as an important criterion of all future broadcasting law, just how and in what form the public will have access to television was simply never raised as an issue.** More commonly, therefore (but in an important category shift) this concept came to mean the rights to receive electronic media, like the one in which the special plan for expansion of television envisaged in the Seventh Five Year Plan promised to make television available to 70 per cent of the Indian population within five years.

violated her Constitutional right to freedom of speech. According to the petition, 'the purpose of television is to serve public good. The government therefore, runs and holds the television on behalf of the public and as a trustee of the public. It is the medium which provides the maximum access to views for the public at large. In order to effectively exercise the right under Article 19(1)(a) of the Constitution, i.e., freedom of speech and expression it is necessary for members of the public to free access to at least government controlled media subject only to the Constitutional safeguards of public order decency or morality. This right to express one's views is all the more important when the topic on which views are sought to be expressed a contemporary and widely debated topic and the person desirous of having such access is known to be closely connected with the subject.'

- **'Public property', and therefore 'in the service of what the public wants':** Given the virtual impossibility by now of even assuming, as homo oeconomicus began to take root, that 'the public' could ever want anything from television but entertainment, this definition clearly clashed with the first: if we shall restrict software to what the public actually wants, then why on earth should it remain non-commercial? This issue would be further mired with the following slippage:
- **A 'public service', meaning 'not necessarily what the public wants but what the state thinks the public has to have in its own interest'.** By this time it was fundamentally assumed that what the public actually wants and what the state thinks is good for the public had — as posed in the debate of the time — no choice but to be foundationally in conflict. There was no way that public good could ethically synergize with private desire, and so inevitably both in the judgment and in the Bill, the concept of 'public service' clashed with that of 'public property'. **While Jaipal Reddy's preface acknowledged that 'It is felt that the public service broadcaster alone will not be able to meet the needs and urges of the people in terms of variety and plurality', the Bill nevertheless explicitly exempted a 'public service broadcaster' from being subject to the licensing process — a major**

concession while offering no new clarification as to what such a service should do in these times given its acknowledged limitations. This issue of course has a long history in broadcasting policy itself, within the concept of public service broadcasting originating with a British concept attributed to Lord Reith, the first Director General of the BBC and enshrined in the BBC's Royal Charter.

Section 35/zc of the Bill defines a public service broadcaster as simply 'any "body" created by an Act of Parliament for the purpose of public service broadcasting'.

In India's broadcasting controversy at this time, the ethical question of public service, and whether Doordarshan was solely capable of fulfilling such a service, extended into economics as the very process of licensing that the Broadcast Bill had sought to introduce would not only grant licenses but confer certain rights to the recipients of these licenses: the rights of these private channels to be considered as public services. Further, the question of whether Doordarshan, as India's sole 'public service broadcaster', was exempted from licensing requirements (Section 9, Clause 3 of the Bill) was a problematic issue in itself. **In fact, through the debate it remained unclear as to just what the status of Doordarshan could now be in the eyes of the proposed Broadcast Authority of India (BAI), and the already-existing Telecom Regulatory Authority of India (TRAI) if the Prasar Bharati Bill had been rushed through Parliament as the then government wanted.** If Doordarshan were corporatized as an autonomous entity the question of whether it could validly claim a status significantly different from any of the other competing channels was not one that had been adequately raised and has turned out since then as a considerably more negotiable issue than one might have thought.

The Act set in place the Prasar Bharati Corporation as an autonomous corporation, to whom the assets of both Doordarshan and All India Radio were to be leased in perpetuity. This corporation would now look after 'public service broadcasting', while the BAI would become a regulator of the rest of the media environment. See the Economic & Political Weekly editorial, 'Hurdles to Cross' (32:44/45, Nov 8-14 1997, p. 2840), which points out that the charter of the Prasar Bharati makes it the

To add to the social complexities rarely evidenced in the debate on whether new technology was going to forge new approaches to communication theory itself, was the question of whether any nation-state was capable of bridging the divide. What would it mean, really, to say that control of the media should be *in the hands of the public as distinct from the government* in a situation where, as Prabhat Patnaik would argue, there was almost no possibility – whether on the right or left – of the 'emergence of an agency beyond the nation state (for intervention in the interests of

the people... at least in the 'Third World', and where the proposed BAI would itself be appointed by the government, and where its 'functions of authority' would be clearly constrained, especially by the system of licensing that was fully laid out in Chapter 3 of the Bill itself.

'custodian of all the air waves' and asks where that leaves the BAI as licensing authority of those very waves.

What was nevertheless evident however, in all the debate around creating a new public, was the need felt across the political spectrum for creating such a 'moral human being', at the service of a privatisation governed by 'the laws of the free market' – even if symbolically to represent the true face of public interest. **If the judgment was read as a straightforward privatisation argument, then the manufacture of a largely fictitious 'public' was clearly required mainly to autonomize commercial institutions from governmental control in the name of this public – as representing, in some ways, an alternate concept of the State to which private institutions could declare their allegiance.**

Conceptually this shift is very much present in what Habermas calls the 'contradictory institutionalization of the public sphere in the bourgeois constitutional state', where eventually the 'public' equates with the private, the home with the citizen. Habermas, already cited, p. 87.

IV

THE JUDGMENT AND INFORMATION THEORY: THE RIGHT TO SPEAK AS THE RIGHT TO KNOW

The Cricket Judgment and the Right to Information Movement: Curiously, the Supreme Court judgment does not often feature in the one space where it perhaps made the greatest impact: the Right to Information movement that grew in India through the 1990s, to become an Act in 2005. Harsh Mander, who provides one of the authoritative accounts of the origin of this movement, in the Mazdoor Kisan Shakti Sangathan (MKSS) and their legendary *Jan Sunwais* in Rajasthan, lists this specific judgment along with several others as seminal for the establishment of an RTI mechanism across the country. As I track some of that legal history, I propose to locate 'information' in the civil rights RTI sense to a theory of the technology of information that I outline in later in this chapter.

Mander clearly locates RTI, or the public's right to know, within Article 19, as related to the freedom of speech. He lists as an important precedent judgment, the *Bennett Coleman & Co. vs. Union of India* case of 1973, in which the petitioners challenged, on the grounds of the freedom speech, a government policy that placed restrictions on acquisition, sale and consumption of newsprint. The link between the right to speak as directly stemming from the right to know was further forged in the *Indian Express Newspapers (Bombay) Pvt. Ltd. vs India (1985)* where Mander quotes the court as saying, 'The basic purpose of freedom of speech and expression is that all members should be able to form their beliefs and communicate them freely to others. In sum, the fundamental principle involved here is the people's right to know'. A third development (*Manubhai D. Shah vs Life Insurance Corporation, 1981*) held that if an official media or channel was made available to one party to express its views or criticism, the same should also be made available to another contradictory view.

The State's repeated violation of civil rights, both by the police and by other law enforcement agencies, have compelled courts to repeatedly give directions to concerned agencies to ensure transparency in order to avoid illegal arrests and detention, and torture in custody. Mander also here invokes Article 21 in situations where courts have stressed the need for free legal aid to the poor and needy who are either not aware of the procedures or not in a position to afford lawyers.

Further strengthening this right were several developments in administrative law, writes Mander. In *State of U.P vs. Raj Narain* (1975), the respondent had summoned documents pertaining to the security arrangements and the expenses thereof of the then Prime Minister. The Supreme Court, in examining a claim for privilege of certain documents, said,

> While there are overwhelming arguments for giving to the executive the power to determine what matters may prejudice public security, those arguments give no sanction to giving the executive exclusive power to determine what matters may prejudice the public interest. Once considerations of national security are left out there are few matters of public interest which cannot be safely discussed in public.

Harsh Mander and Abha Joshi, 'The Movement For Right To Information In India: People's Power for the Control of Corruption', http://www.humanrightsinitiative.org/programs/ai/rti/india/articles/The%20Movement%20for%20RTI%20in%20India.pdf.

Mander also quotes Justice K.K.Mathew as saying:

> In a government of responsibility like ours, where all the agents of the public must be responsible for their conduct, there can be but few secrets. The people of this country have a right to know every public act, everything that is done in a public way, by their public functionaries. They are entitled to know the particulars of every public transaction in all its bearing. The right to know which is derived from the concept of freedom of speech, though not absolute, is a factor which should make one wary, when secrecy is claimed for transactions which can, at any rate, have no repercussion on public security. To cover with veil of secrecy, the common routine business is not in the interest of the public. Such secrecy can seldom be legitimately desired. It is generally desired for the purpose of parties and politics or personal self-interest or bureaucratic routine. The responsibility of officials to explain or to justify their acts is the chief safeguard against oppression and corruption.

Mander shows that the battle for appropriate legislation for the right to information has been fought primarily on two planks: the first, a demand for the amendment of the draconian colonial Official Secrets Act, 1923, and the second, the campaign for an early and effective law on the right to information. The 1923 Act has been used repeatedly by the Indian State, in notorious instances such as when journalists were forbidden access to spaces when hundreds of thousands of people were being displaced during the Sardar Sarovar Project, or when the Bhopal Gas Tragedy saw the government refuse to make public details of the monetary settlements between the government and the Union Carbide and arrested participants taking notes at a workshop on the medical aspects of the victims under the Official Secrets Act. Both these instances have been used by activists to further the need for RTI with the Sardar Sarovar Dam, activists discovering that potential oustees had no knowledge of how their lives would be affected, or of the extent of displacement, nor any idea of the plans for re-location and rehabilitation.

Through the 1990s, then, there took place a spate of judgments that would speak on behalf of – and seek to curtail – a new, refurbished 'public interest', even as new rights were being attributed to an increasingly bloated Article 19. In 1996, in the first version of an RTI legislation, the Press Council had proposed that RTI already effectively existed as the natural corollary to Article 19(1), and that the legislation should do no more that flesh out, make more explicit, the process of securing such a Right to citizens. We have already seen (in the introduction) that RTI was the first of a series of new economic, social and cultural rights which needed to be defined differently from civil and political rights. The Press Council's legislation pivoted the Right to Information around a new definition of a **public body**, from whom any **citizen** could validly demand **information**. A public body would now be not only the State as defined in Article 12 of the Constitution of India for the purposes of enforcing fundamental rights, but would incorporate all undertakings and non-statutory authorities, and even a company, corporation, society, trust, firm or a co-operative society, owned or controlled by private individuals and institutions whose activities affect the public interest. In effect, both the corporate sector and NGOs were sought to be brought under the purview of this proposed legislation. The **information** that could be demanded from such a public body included any of the records relating to its affairs. The right to information included inspection, taking notes and extracts and receiving certified copies of the documents. The key position was that any information which cannot be denied to the Parliament or the state legislature cannot therefore, be denied to a citizen.

In 1997, a working group chaired by consumer activist H.D. Shourie advanced on the Press Council Legislation in one respect, by explicitly bringing the judiciary and legislatures under the purview of the proposed legislation. It also however, diluted the recommendations by permitting public bodies to withhold `information, the disclosure of which would not subserve any public interest'. This single clause, says Mander, broke the back of the entire legislation, because in effect public authorities would then be empowered to withhold disclosure of incriminating information in the name of public interest. We can also parallelly see a second problem that, if it

did not exactly break the back of Article 19(1), certainly burdened the beast very, very heavily. We have already seen Indira Jaisingh, in 1989, invoke Article 19 to demand that her freedom of speech expand into her right to speak on Doordarshan, in her complaint that her interview on Doordarshan had been edited so as to misrepresent her views, to which Judge Sujata Manohar said:

> Under Art 19(1)(a) of the Constitution all citizens have a right to freedom of speech and expression. This right protects freedom of speech on television as much as anywhere else. It was contended by Nilkanth, learned advocate for the respondents that there is no right of free speech on TV. He said that Art. 19 does not apply to television programmes. Nilkanth has not cited any authority of law in support of this somewhat alarming proposition. (*Indira Jaisingh, Petitioner, vs. Union of India and Ors,* Respondents, 1989, para 13)

While Jaisingh's position was clearly defensible, this could not be necessarily said for several arguments that barely differed from Jaisingh: as several 'citizens' argued that they had a constitutional right to show their films on Doordarshan. When Cinemart Foundation, makers of the documentary *Bhopal: Beyond Genocide* (Tapan Bose, 1986), had their film rejected by Doordarshan on the grounds that the film (i) had lost its relevance, (ii) lacked moderation and restraint, (iii) dealt with sub-judice issues, (iv) criticized the state government, etc., Cinemart filed and won a case under the freedom of speech doctrine. It was inevitable, therefore, that when the Cricket Association of Bengal (CAB) filed a case claiming *their* right and that of the Board of Control for Cricket in India (BCCI) to sell telecast rights to multinational telecasting outfits, demanding that they be allowed to use Intelsat and to import uplinking equipment, CAB/BCCI too argued that if they could not do all of these things, *their* citizens' right to freedom of expression would be violated. Justice P.B. Sawant, in the most extensive summary of the history of Article 19(1) available, quoted all of the above precedents, including those of the independent documentary cinema, in presenting his conclusions that, like all such forms of expression, sport too is 'an expression of self', and that, in constructing such a self, it too adheres to the basic

canons of speech production with its attendant rights:

> [T]he right of freedom of speech and expression also includes the right to educate, to inform and to entertain and also the right to be educated, informed and entertained. The former is the right of the telecaster and the latter that of the viewers. The right to telecast a sporting event will therefore include the right to educate and inform the present and prospective sportsmen interested in the particular game. . . . An organizer such as the BCCI or CAB which are indisputably devoted to the promotion of the game of cricket cannot be placed in the same scale as the business organizations whose only intention is to make as large a profit as can be made. . . .

Keeping aside the irony of India's biggest and avowedly most commercial sports organization pretending to be an independent filmmaker who in turn pretends to be an ordinary citizen, let us address instead the more abstract notion of what kind of speaker- as-'public' such a judgment puts in place. Its historic declaration that 'air waves are public property' deployed the term 'public' in an unprecedentedly wide-ranging way:

> The airwaves or frequencies are a public property. Their use has to be controlled and regulated by a public authority in the interests of the public and to prevent the invasion of their rights. . . . The right to impart and receive information is a species of the right of freedom of speech and expression guaranteed by Art. 19(1)(a) of the Constitution. A citizen has a fundamental right to use the best means of imparting and receiving information and as such to have an access to telecasting for the purpose.

By the late 1990s, as the term 'public' more or less blew apart in terms of the sheer number of legal rights being sucked out from the speaking subject, a new location was gradually emerging upon which to work out the limits of Article 19(1). The short lived 1997 Broadcast Bill, which was the first effort to put the cricket judgment into

legislative effect, accepted this new locus that would best describe the new citizen as a member of the new public, as the viewer of broadcast media. The new rights of this public were to be defined *primarily by the circumstances of their spectatorial access to, and ability to use, such media*.

V
THE 'MESSAGE' THEORY OF COMMUNICATION: GOVERNANCE, TECHNOLOGY, SOCIAL SCIENCE

In many ways, the rights of this new public were being framed within the mandate of Article 19(1) first put together during the Universal Declaration of Human Rights of 1948. Let us take a small detour here, and focus on the technology of communications and how, it relates to the theory of both *rights* and of *government*. For many histories, the origins of the term, the 'Last Mile', go back to when information processing became a key concept of communication, and it was mainly derived from the telegraph. In 1927, Harry Nyquist provided perhaps the earliest use of the term, when he showed that the independent pulses that could be put through a telegraph channel per unit time was limited by bandwidth, to which Ralph Hartley would show in the same year, that the information so passed could be quantified by the number of distinct pulses that can be transmitted and received reliably over a particular communications channel, given that that number is limited both by the range of amplitude and the precision with which the receiver can distinguish amplitude levels.

The model of information however received its key definition in the year 1948, when specific breakthroughs took place in the theory of information processing, and were thence fused into new theories of the social sciences. That year, Claude Shannon published his landmark essay, *A Mathematical Theory of Communication*, in the July-October issue of *The Bell System Technical Journal*, proposing that the signal disturbances that impede the efficient communication of messages were not a handicap, since 'noise' itself produced significant, decodable data. The year also

saw Harold Lasswell's epochal definition of communication research as providing answers to the five questions: '*Who*, says *what*, in *which channel*, to *whom*, and with what *effects*', a definition furthered by Berelson and Lazarsfeld's (also 1948) re-description of content analysis as an 'objective, systematic, and quantitative description of the manifest content of communication' promising scientific accounts of what messages carry to everyone capable of accessing them.

It may be useful for us to also bring in the Universal Declaration of Human Rights as the fourth, less obvious but for us equally crucial, text to this. The Declaration was also announced in that same year by the General Assembly of the United Nations, in fact only a scant few months after Shannon published his seminal essay. Reading these documents together is useful for a number of reasons: for one, it gives a much-needed historical perspective to our own present-day effort to bring together technology and governmental theory. Yet more importantly perhaps, it provides us with the beginnings of a methodology to overcome a shifting divide that, we have seen, could well be otherwise unbridgeable. The Universal Declaration famously announced that 'everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, *receive and impart information and ideas* through any media and regardless of frontiers' (Article 19). The assumption also follows that there must be a link between such reception and the imparting of information and ideas within the democratic process itself, and that it must also follow, as night follows day, that if people have the right of information they must also have 'the right to freedom of peaceful assembly and association', where 'no one may be compelled to belong to an association, everyone has the right to take part in the government of his country, directly or through freely chosen representatives', and everyone have the right of equal access to public service in his country', and lastly, that the 'will of the people shall be the basis of the authority of government'. What remains crucial to our broadcasting example above is this key link: how does the first right, the right to information, enable the second, the right to a governance of your choice? *Does* it? Are the two rights autonomous, or is one a consequence of the other?

The Universal Declaration's emphasis on the right to information was primarily defined in the context of the history of communication propaganda through the Second World War, for which of course Goebbels' Ministry of Public Enlightenment and Propaganda remains the best example, but Britain's own Wartime Ministry of Information was probably not all that far behind. The 1948 Declaration has as direct background the 1936 League of Nations Convention titled *Modern Means of Spreading Information Utilized in the Cause of Peace*, with specific reference to both cinema and broadcasting, and the more specific *Convention on the Use of Broadcasting in the Cause of Peace* that same year. By the late 1940s, the discipline primarily in the USA firmly linked the technology of communication to a virulently anti-Communist theory of development and freedom (e.g. Wilbur Schramm's *Communications in Modern Society*, 1948), with a specific branch even dealing with the role of communication in traditional societies (Schramm's *Mass Media and National Development: The Role of Information in the Developing Countries*, 1964, and Daniel Lerner's landmark work *The Passing of Traditional Society: Modernizing the Middle East*, 1958).

See Philip M. Taylor's classic The Projection of Britain: British Overseas Publicity and Propaganda 1919-1939 (Cambridge/New York/ Melbourne, CUP, 1981)

Before we bring this debate to India, however, let me continue my technological detour with a further exploration of what the original model of information could and could not do. **Through the 1920s, the communications model had drawn attention to what came to be known as the 'mass mind', and with it the 'hypodermic needle theory' of communications: the fact that the mass mind was easy prey to propaganda.** Supposing a set of new *state* functions as having emerged primarily from their communication origins, it was inevitable that an entirely new democratic strategy would be hinged on a new communications strategy that Shannon heralded in the second paragraph of his seminal essay:

Jeffery L. Bineham ('A Historical Account of the Hypodermic Model in Mass Communication') defines it as a widespread agreement through the 1920s and 30s, that "that the mass media exercised a powerful and persuasive influence." This agreement was premised on four related concepts. First, early researchers thought that technological innovations, coupled with "the mass production of communications," had created a "mass audience": a conglomerate of millions who could now attend to the same message. This audience, secondly, was believed to exist in an urbanized and industrialized society "that was

volatile, unstable, rootless, alienated and inherently susceptible to manipulation." These first two concepts were conflated to form the third: The susceptible mass audience was viewed as "easy prey to mass communication." Finally, the idea that people had been "brainwashed" by mass mediated messages during World War I served to validate the first three tenets. This view of the media as an all-powerful and direct influence is commonly titled the hypodermic model of mass communication. (http://web.stcloudstate.edu/jbineham/publications/Hypodermic_Model.pdf).

The fundamental problem of communication is that of reproducing at one point either exactly or approximately a message selected at another point. Frequently, the messages have *meaning*; that is they refer to or are correlated according to some system with certain physical or conceptual entities. These semantic aspects of communication are irrelevant to the engineering problem. The significant aspect is that the actual message is one *selected from a set* of possible messages. The system must be designed to operate for each possible selection, not just the one which will actually be chosen since this is unknown at the time of design. **If the number of messages in the set is finite then this number or any monotonic function of this number can be regarded as a measure of the information produced when one message is chosen from the set, all choices being equally likely.**

Claude Shannon, A Mathematical Theory of Communication in the July-October issue of the Bell System Technical Journal.

Shannon's intervention is considered the breakthrough upon which information technology has since been based. Let us now revisit it as the basis of democracy theory as well. Messages, he suggests, have *meaning*, not merely data. The recipient interprets and makes sense of the message by selecting from a set of interpretations: in the process, the meaning also selects its recipient. Since the sender cannot be sure that the receiver will select only the message that makes sense, the sending process should function without assuming that the receiver will either *choose* the right message, which means receive it in already-interpreted form, or perform the actual state's task of interpreting the message correctly.

Now, on the one side, a measure of information was the capacity of computing, first, the number of messages the receiver has available for choice and second, the receiver's capacity to choose the right one. This would immediately raise, in the Shannon theory, the parallel question: what happens to the plethora of messages provided, if only one of them is 'right'? Do the others carry no value at all, or if they do, how can *they* be interpreted, and to what end?

As Erico Marui Guizzo (1999) describes it, Shannon showed for the first time that 'every channel has a maximum rate for transmitting electronic data reliably, which he called the channel capacity. Try to send information at a rate greater than this threshold and you will always lose part of your message. This ultimate limit, measured in bits per second, became an essential benchmark for communication engineers. Before, they developed systems without knowing the physical limitations. Now they were not working in the dark anymore; with the channel capacity they knew where they could go – and where they couldn't'. *First principle, the capacity of a channel could be measured: send more information than that and you start losing something of value.*

But, says Guizzo, the paper contained a further astounding revelation.

> Shannon demonstrated, contrary to what was commonly believed that engineers could beat their worst enemy ever: transmission errors – or in their technical jargon, 'noise'. Noise is anything that disturbs communication. It can be an electric signal in a telephone wire that causes crosstalk in an adjacent wire, a thunderstorm static that perturbs TV signals distorting the image on the screen, or a failure in network equipment that corrupts Internet data. At that time, the usual way to overcome noise was to increase the energy of the transmission signals or send the same message repeatedly – much as when, in a crowded pub, you have to shout for a beer several times. Shannon showed a better way to avoid errors without wasting so much energy and time: coding.

Shannon's theory of coding, Guizzo shows, is premised upon his radical contention that noise in communication is not wasteful, mainly because *noise contains potentially interpretable meaning*. The trick in coding is, firstly, to reduce the redundancy in the message. Secondly, to use the transmittable energy available to open up multiple interpretative possibilities, rather than to send the same message over and over again. So, instead of trying to overcome the noisy pub by shouting louder and louder for a beer, the customer holds up three fingers and communicates to the waiter that s/he wants three items of something, three beers and three glasses of water.—*useless energy from shouting gets translated into multiple interpretative possibilities, and thirdly, perhaps most innovatively, to recognize the difference between useless and useful redundancy*. Useless when you keep repeating the same message again and again hoping that it would go through (like Englishmen who often think that foreigners will understand them only if they spoke louder or more slowly). Useful redundancy is one that *signals which one of the many interpretations is the right one* without eliminating the 'wrong' signals as useless or redundant.

William F. Harms (2006) indicates how this works: if, for instance, someone raises a brick over my head, the question of what this means to me is inclusive of the physical knowledge – that energy has changed in the brick from chemical to kinetic to potential, that there is information in the brick's new altitude – alongside the question of whether my characterization of the situation is consistent with physics. Does physics already have a vocabulary adequate to the situation I am confronted with, or do I need some explanation other than physics? If information can be given a precise characterization in physical terms, then we can proceed to determine whether or not there is any important or necessary relationship between this sort of information and statistical and semantic/conventional information. Such redundant information is, he says, crucial in working out *probability,* since it 'grounds' other kinds of information. *Less likely events typically generate more information*, or are intuitively more informative than more common events. The tools of information theory allow one to quantify such notions.

Shannon, says Guizzo, estimated the standard redundancy of English to be roughly 50 per cent: 'The redundancy of English', Shannon wrote in an article for the *Encyclopaedia Britannica*, 'is... exhibited by the fact that many letters can be deleted without making it impossible for a reader to fill the gaps and determine the original meaning. For example, in the following sentence the vowels have been deleted: MST PPL HV LTTL DFFCLTY N RDNG THS SNTNC'. What needed to be done was to replace this redundancy with 'error-correcting code', replacing useless data with information most likely to allow the end-user to fill in gaps and errors. And so it was that a theory that, apparently, started with World War II concerns like, how probability would allow you to shoot down zigzagging enemy aircraft, and was the ancestor to the technology that can today allow a 50-mb music file to be reduced to a 5-mb MP3 file. Both function on how errors can be overcome through providing significance to interpretation.

What was of course crucial was that communication theory, in technologically resolving one issue — of efficient transmission — had only moved from the frying pan of technology into the fire of social theory. Who decides what interpretation is correct? And that is only the beginning of the problem as communication theory struggles to define something like S/N (signal-to-noise ratio) in democratic terms. Human society clearly produces enormous amounts of noise. Despite such noise (or perhaps because of it), society is also an incredibly efficient transmitter of signals, as we see with rumours, or cataclysmic news, which can travel through society's jungle telegraph with astonishing speed and rapidity. How much of the noise is useless redundancy? Mapping these concerns onto the Universal Declaration, the first question: if the 'right to freedom of opinion and expression' arises from our *capacity* to '*receive and impart information and ideas* through any media and regardless of frontiers', then despite their evident redundancy (do we really need 50 television news channels telling us the same thing?), are democratic media in fact realizing this very aim in a different way with their proliferation? Media functioning democratically under, say, totalitarian regimes susceptible to censorship would have a distinctly different signal-to-noise ratio than, for example, a surfeit of media

generating enormous amounts of information redundancy. Or is there something similar to the two conditions, in terms of the way both situations converge upon the citizen-recipients, forcing them to develop several covert interpretative abilities to interpret what they receive? If, as the Universal Declaration seems to suggest, the only way to assess whether citizens have correctly interpreted what they receive in the way they put this, the information into the right government to choose, or the right association to belong, in what way would communication theory possibly interpret the bewildering, and irrational, choices that people often make in democracies?

Examining the Recipient

In an important critique of communication theory from a democracy perspective, titled 'The Past of Communication's Hoped-For Future', Klaus Krippendorff (1993) acknowledges the importance of Shannon's mathematically founded concept of communication, including the mass media. However, he says, Shannon's statistical and relativist measure of information quickly became equated with news and other stuff of the kind that messages 'objectively' contain. The dominance of all communication as message-driven meant an increasing focus on 'studies correlating message variables and effects, inquiries into the effectiveness of different message designs, use of mathematical theories to predict attitude changes from media exposure, and so forth'. None of these, he says, 'regard the human participants in the progress as capable of making up their own meanings, negotiating relationships among themselves, and reflecting on their own realities'.

Where message-driven conceptions of communication entered serious empirical tests, they turned out to be of limited explanatory value. For example, the ineffectual replacement of the 'hypodermic needle conception of mass media effects' with a two-step flow model: first step, exposure to the media, the second, an informal opinion-creating process mediated by opinion leaders. Subsequently, the equally ineffectual 'uses and gratifications' approach traceable to propaganda effects studies

during World War II, which also had trouble with the basic problem of message-determinism: why people who may have received the same message tend to put the same information to use in ways that are far from uniform. Its further modification, the *information-seeking paradigm*, has explored the idea that 'objective' contents of any message are largely irrelevant, since individuals are actively engaged in diverse forms of information-seeking, avoiding, and processing strategies, which turn out to be explainable in terms of their 'image of reality', their 'goals, beliefs, and knowledge', and so forth, *as information becomes no longer explainable from the properties of the message alone, and senders or producers no longer play the central role that message-driven explanations had assigned to them.* Krippendorff explores two further variations, the *interpretive approach* which has become increasingly appealing to organizational communication research, which centres on the way individuals make sense of their world through communicative behaviours, and attempts to explain choices in terms of prevailing 'organizational cultures' or working climates to which members of an organization come to be committed.

The systematic failure of all these options is for him the resolute blind spot in all message-driven theories of communication: *the refusal to recognize that communicated meanings are created and negotiated, neither objectively given nor assignable by a scientific authority.* For Krippendorff, this can happen when we become aware of the reality in telling our story of communication: produce what he calls a 'new constructionism' that can challenge the privileged role of disembodied knowledge and reveals its complicity in the emergence of hierarchical forms of social and political authority and its attendant requirement of submission.

He wants a radically new synthesis, seeing humans first as cognitively autonomous beings; second, as reflexive practitioners of communication with others and third, as morally responsible interveners in, if not creators of, the very social realities in which they end up living. Respecting this autonomy, he says, prevents abstract and disembodied communication theory constructions and encourages explanations of communication phenomena (and of other social constructions) from the bottom up,

from the knowledge and practices embodied in its participants. This contrasts with top-down explanations that attribute determining forces to someone else's (usually the observing scientists') super-individual constructions – for example, ideologies, hegemonic forces, cultural determinisms, rules, or objective meanings. Respecting this autonomy would now mean *abandoning the idea of creating general theories without obtaining, as far as possible, the consent of those theorized*.

If we can pull this off, he says, we could be in a revolution of a Copernican magnitude. In fact, even more significant than that, for a while Copernicus's theory challenged only the location of the centre of the then known astronomical universe while leaving the hierarchical organization of social and religious life and the objectivist construction of the universe intact, the epistemology of this new constructivism could challenge the privileged role of disembodied knowledge and thus *reveal its complicity in the emergence of hierarchical forms of social and political authority* and its attendant requirement of submission. For him, the first step is for communication research to first acknowledge the breakdown in the message-driven explanation that most other disciplines have already dismissed. The next step is for communications to learn from anthropology, and to focus on how anthropology – in historically explaining the encounters of people with others from different cultures – has forced analysts to invent and interlocutors to co-construct *their own culture*.

THE RECIPIENT AND GOVERNANCE

Was the Supreme Court judgment's construction of a new public capable of accommodating such a radical shift? It is evident that, through the 1990s, we have seen in India an opening up of the kind of multidisciplinary space that Krippendorff gestures to, one converging natural language philosophy, ethnography and cognitivism in linguistics together with second-order cybernetics and reflexive sociology, along with efforts to understand new interactive media (computer interfaces, hyper-media, virtual reality). Can the judgment be seen as a landmark in this area as well? Specifically, can we define a **political legacy** for the shift in the

modern citizen-subject as the no-longer silent recipient of media, but as someone else, someone capable of action?

We may need to first contextualize the social sciences' frenzied search for new disciplinary approaches within the crisis that the failure of the 'message' – or 'hypodermic needle' or 'bullet' theory of communications, take your pick – creates for state structures, given its capacity to destabilize the hierarchies of social and political authority. The question of whether the consent of those being theorized has been obtained or not is politically more complicated than Krippendorff acknowledges: the *complicity* of citizen-subjects in the process that makes them recipients of the state's message is perhaps the most complicated grey-area there is in state totalitarianism. The further question that, when aid to Tsunami victims is hived off by middlemen, the message is, scientifically speaking, *not* distorted. Middlemen may have always meant to have been the recipients — says something more devious about state investment into intentionality than Krippendorff realizes.

What we may need to do here is then to track a prior route: the link between the message theory of communication and strategies of governance. **In fact, it is the Wikipedia entry on the Last Mile that makes this point most effectively.** Today, last mile conduit theory has a precise set of widely-accepted criteria: it should (1) deliver adequate signal power capacity, (2) do so and ensure *as low a loss as possible into unusable energy forms*, (3) be able to support as wide a transmission bandwidth as possible, (4) and through all the above deliver high signal-to-noise ratio. Beyond this, to paraphrase David Harvey on the limits of neoliberal intervention, *the state should not go*.

http://en.wikipedia.org/wiki/Last_mile.

Availability, reliability, capacity for nomadic use (known now as roaming), low latency, high per-use capacity and affordability have been some recent additions to the list of requirements of the conduit. Again, on the connections between effective conduits of this kind, and systems of *governance*, the Wiki entry is interesting: it starts by drawing analogies from nature, such as blood distribution to a large

number of cells over a system of veins, arteries and capillaries, or nourishment to a plants leaves through roots, trunks and branches. From these, it suggests that the *best conduits are the ones that carry a relatively small amount of a resource a short distance to a very large number of physically separated endpoints*. Shorter, lower-volume conduits, which individually serves only one or a small fraction of endpoints, may have far greater combined length than larger capacity ones. On the other hand, conduits that are located closer to the endpoint, or end-user, do not individually have as many users supporting them. Even though they are smaller, each has the overhead of an installation, the need to first acquire and then maintain a suitable path over which the resource could flow. While localization has its obvious benefits, the downside is often a lower operating efficiency and relatively greater installation expenses, compared with the transfer capacities, which can cause smaller conduits, as a whole, to be the most expensive and difficult-to-maintain part of the distribution system: issues we have already encountered in our telecom example.

It is evident that in speaking of all these issues, we are already speaking governance: of efficient 'small-government' structures where the management and resources for conduits is provided by local entities and therefore, can be optimized to achieve the best solutions in the immediate environment and also to make best use of local resources, as against the 'big-government' alternatives of masterminding distribution conduits with some kind of national grid.

VI
NOISE AND DEMOCRACY

> The state (and so, the ruling party) has become the arbiter of expression through an increasingly technologically sophisticated and omnipresent forum. Laws regarding broadcasting are constitutionally reserved for the Centre. Despite the expansion of Indian television to larger and more regionally diverse audiences, policy, administration and programming decisions remain centralized in Delhi, and 'all attempts at control at the state

level have been stoutly resisted' (P.C. Chatterji). The prime-time National Programme emanating from Delhi (begun in 1982) is received throughout the national television system. Other hours are given to regional broadcasting in those areas with the technical capability to do so, but again programming and administrative decisions are subject to directives from Delhi. *Early development communications theories not only underestimated difficulties posed by state centralization; they also underestimated the burgeoning of media devoted to entertainment and advertising*. The Indian case is also fruitful for examination of these trends, because its reliance on the rhetoric of development and resistance to Western consumerist media messages was coupled with the advent of commercial sponsorship of Doordarshan programming. (Victoria Farmer, 2003).

We come to India. I begin with reading Partha Chatterjee's theory of the purpose that big government originally defined for itself in India as, also, a potential theory of communications. **In his classic essay, 'Beyond The Nation? Or Within?' (1997), Chatterjee says that in India, even as 'the associational principles of secular bourgeois civil institutions were adopted in the new civil society of the nationalist elite', a very different possibility of mediation had already been imagined between the population and the state, 'one that would not ground itself on a modernized civil society'.** It was, in his argument, part of the cultural politics of nationalism to provide an 'adequate strategic response' to prevent its restriction to 'the confines of the 'properly constituted' civil society of the urban elites'. This response was effectively found in the way the nation itself was characterized as one that could 'mediate politically between the population and the nation-state of the future':

Partha Chattejee, 'Beyond the Nation? Or within?', Economic & Political Weekly, 32:1/2 Jan 4-11 1997, pp. 30-34

> The aim is to form a politically independent nation-state. The means involve creation of a series of alliances, within the organizational structure of a national movement... The project is a reorganization of the political order, but it is moderated in two quite fundamental ways. *On the one hand it does not attempt to break up or transform in any radical way the institutional structures of 'rational' authority* set up in the period of colonial rule, whether in the domain

> of administration and law or in the realm of economic institutions or in the structure of education, scientific research and cultural organization. ***On the other hand, it also does not undertake a full-scale assault*** **on all pre-capitalist dominant classes: rather, it seeks to limit their former power, neutralize them when necessary, attack them only selectively and in general to bring them round to a position of subsidiary allies within a reformed state structure**.

Partha Chatterjee, Nationalist Thought and the Colonial World, London: Zed Books, 1986, pg 49.

Chatterjee characterizes the 'nation state of the future' as one where newly formed states would set themselves up as a 'precondition for further capitalist development', and would represent themselves as the 'national-popular', sharing their work with other governing groups and limiting their specific role to *reformist and molecular changes*.

Such 'gradualism', to use the phrase with which B.D. Dhawan characterized the All India Radio's work, had become very much a part of India's communications strategy. **By the mid-1960s, molecular transformations through creating a national grid of multiple regional circuits were part of the All India Radio's 'master plan' for the country.** By this time, the main issue faced by AIR was how to adhere to its national mandate and at the same time accommodate new technology in the shape of television.

Radio & Television report of the Committee on Broadcasting and Information Media (Ministry of Information & Broadcasting, 1966).

It shows how communication theories determines development strategy in this time, in the forms of educational radio or as television for maximizing agricultural benefit through new seed strains. For her such moves towards developmental communications should be distinguished between two disparate types of development, although the standard paradigm often collapses the two. She defines the two as *material* versus *national*. The former includes 'those indicators of development which, through the exigencies of implementation and ease of empirical validation, became the substance of specific development projects, including programs for *agricultural extension, public health,* and *local-level literacy* and *educational campaigns*. On the other hand, national development refers to the

'supersession of supposedly primordial social relations on the part of individuals to identification with a broader notion of the 'modern', as represented by a conflation of the nation, the state, and the *civitas*, with attendant assumptions of secularization, individuation, and democratic processes'.

Let us further the divide of 'material' and 'national' as follows: 'material' constitutes functional technology – health, telecommunications, literacy, meteorology and the like. Despite, or perhaps because of, this functionality, it also has the possibility of accommodating new technology. On the other hand, the 'national' component – which takes on Chatterjee's contention of the 'mediation' between the soon-to-be nation-state and its intended population — is therefore, negotiated through acts of limiting, neutralization and transformation into subsidiary allies and has very different technological needs. What was crucial here, as we would go through the 1960s, was that television would play the former, the *material* role and, as we will see, have an unlikely champion in the Department of Atomic Energy (DAE), and India's new space programme — while the latter role, of *national* responsibility, would be played by a far more cautious All India Radio. AIR's work here was to see how centralized communication signals could be sent out by the state-to-be and how these could be received by its citizenry. Such a communication would, we have seen, need the negotiation to have achieved at least the following: it would *firstly* have addressed the ways by which signal power capacity is delivered adequately – in state terms, we may say, where the state's governance capacity was being adequately spread on the ground. *Secondly*, it would have found ways to limit, and eventually to eliminate, loss into unusable energy forms, not so much by cutting down signals but as by *harvesting noise for meaning*: perhaps through ensuring how the political needs of the state apparatus could mediate the needs of capital, such as transparency, rationality and efficiency. *Thirdly*, and perhaps most significantly of all, how a high signal-to-noise ratio could be *delivered*: which, again in state terms, might mean how the raucous babble of an inefficient, but nevertheless free democratic state could offer sites for both generating information and for political negotiation.

As we turn to television's extraordinary and impatient capacity to 'leapfrog' over these limits, we need to remind ourselves of what was at stake: the manner in which India had defined itself till then. India existed as authentic because of its capacity to *authenticate*: in the end its self-existence lay in its ability to arbitrate on which interpretation of the signal was the 'correct' one. This did not necessarily mean sending out the right signals: it meant becoming gatekeeper for their interpretation. Such authentication can be easily comprehended as a primary requirement of sovereignty, but also in the Shannon mode as the primary means by which signals are correctly selected from *a plethora of possibilities*. The right to define an interpretation as correct is patterned onto the premier production of such an exercise in correct interpretation: the production, firstly, of national authenticity, and secondly the enunciation of the standpoint of the *one who can rightfully speak for the state*. This authentication has conventionally extended in India in the way the state further disseminates this right to independent agencies to enable them to make authorized representations in the name of the people, or be valid constituents of public interest. This has been the central mode by which the state has been able to disburse to other governing groups the right to their own systems of self-representation.

The question now was, how would television reproduce these facilities? It has been the concern of this argument to see the possible role that technological change may have in enabling complex political change. In the rest of this argument, I am going to locate the judgment onto two trajectories: a political change in the character of the Indian State, and a technological change brought about mainly by satellite television.

TELEVISION AND SIGNAL-TO-NOISE, OR, THE SURFEIT OF INFORMATION AND WHAT IT COULD MEAN

As we have seen, the 1995 Supreme Court judgment on broadcasting overturned the 1885 Indian Telegraph Act. If nothing else, this alone should make it a landmark

in communications history. Television would clearly update, and perhaps radically, a communication model that the Indian State effectively suggests had only been preceded by the telegraph.

Let us start with the technology itself: and rewind to the late 1960s and 1970s, when television was first revealing glimpses of what the future could hold. The period to which I refer is of course the mid-1970s technological experiment, the Satellite Instructional Television Experiment (SITE), that I think played the kind of technological role here that Wireless-in-Local Loop would later play in the career of telecommunications. This would be the culmination of moves inaugurated a decade earlier by the Department of Atomic Energy (DAE), which was forcefully pushing for a communications satellite for television, and the Ministry of Information & Broadcasting, which did not see the need for one.

We may ponder for a moment: why would *atomic energy* want television, and Information & Broadcasting argue *against it*? It appears that significant issues hang on this point. The conventional answer given is that Vikram Sarabhai, then India's leading advocate for a communications satellite, was with the DAE and was pushing for the argument that India's peaceful exploration of outer space for its 'next generation' turn had to accommodate educational television. He was glimpsing the technological possibilities, the ones that B.D. Dhawan says were gripping the imagination of 'upcoming young scientists and engineers who are by nature an impatient segment of any society', and wanted to eliminate the global gap between rich and poor through 'leapfrogging', that is, 'taking recourse to the latest world'. 'Under the aegis of the prestigious and power-wielding DAE', these scientists 'swung into action' to 'scuttle the AIR's plan'. They did this through 'enlisting support from foreign experts to vanquish foes at home': ISRO did joint studies with Hughes Aircraft and General Electric, and the DAE-NASA study which would give birth to SITE was accompanied by agreements between ISRO and Lincoln Labs of MIT 'for further studies on satellite TV in India'. **'The triumph of the modernists over the conventionalists appeared total, and it was a moment of glory within the short annals of ISRO'.**

B.D. Dhawan, Economics of Television in India (New Delhi: S. Chand & Co, 1974), pg 166-167, quoted in Sanjay, 1989, pg 57.

And so was delivered the most landmark of television programmes India has ever seen: *Krishi Darshan*. The programme itself, started in 1967, targeted farmers around Delhi, and was commissioned mainly as a study with an accompanying pilot project. The project required 80 community sets to be installed in villages around Delhi, at the time India's sole television station, and broadcast news, information and interviews with farmers once a week.

The relatively modest study would nevertheless provide a rationale for a far more significant link: between the DAE and NASA, who would sign, on the basis of the *Krishi Darshan* experiment, a memorandum of understanding to use NASA's ATS-F satellite for direct broadcasts to rural community receivers and 'limited re-diffusion through VHF transmitters of Indian-developed instructional television programme material'. The programme, to be shortly named the Satellite Instructional Television Experiment, was a direct outcome of NASA's Application Technology Satellites (ATS), as was the first INSAT. The ATS was inaugurated in 1965, at a particularly critical moment in NASA's own career straddling commercial interests, and the increasing role of private industry in the development of communication satellites on the one hand, and the American government's need, as represented by the Federal Communications Commission (FCC), to globalize American state dominance over satellite communications on the other. **Such an internal tension, within the USA, between state and corporate interests both looking to the technology to globalize, would affect several decisions: among them, whether private international communications carriers could participate in a satellite system on an 'equitable and non-discriminatory basis', the disputes between terrestrial communications versus satellite communications, etc.**

Sanjay points to the tensions within the response to a 1961 FCC initiative asking for how 'international communications carriers could participate in a satellite system on an equitable and non-discriminatory basis': AT&T wanted to limit ownership in the system to international common carriers, while Lockheed, GT&E and Western Union all preferred broader-based ownership by common carriers, manufacturers and possibly the public at large.

The key medium reflecting this tension was television. Interestingly, even NASA which was viewed at the time as being largely on the corporate-friendly side of the equation – did not in the early days of SAC view television as especially central to its plans. NASA's own vision for multipurpose advanced satellite systems, realized as in the seven ATS systems that were operationalized, was to emphasize 'social service

applications' and the 'participation of the end user in the design, implementation and evaluation of individual satellite demonstrations within the ATS programme'. Initially, ATS 1, 3 and 5 were used for scientific and technical developments sponsored by the US Federal Government and various American Universities. In 1969, after completing those experiments, NASA announced that the still operational satellites could be made available to 'public and private sector users who could fund the cost of their ground segment and software requirements'. It was in this climate, says Sanjay, that ATS-6 was launched 1974, and after a year of experiments, was moved to a convenient location for the Indian government to start SITE.

The career of the SITE experiment, inaugurated in 1974, also includes the Green Revolution, the UP Agricultural University, and India's iconic public sector company, Hindustan Machine Tools. Sanjay advocates a direct comparison of the Green Revolution problem with that of satellite communications, and especially the assumption that 'the extension of new agricultural practices and technologies should be implemented first by rich farmers and that it would subsequently 'trickle-down' to the subsistence farmers': something that 'did not occur'. He proposes that since technologies rise as an 'outcome of institutional relationships at all stages of technology design, development and deployment', it was necessary that we study along with the transfer of the technology itself — the way a transfer took place in the 'accompanying institutional arrangement for the production and dissemination of information... that makes the full use of the satellite system possible' (Sanjay, 1989, pg 19-23).

How *Sarabhai* came to be such an advocate for television, and how the DAE set up a communications satellite, is beyond the scope of this monograph, but it does include, among other factors, the impact that Daniel Lerner's thinking may have had on Sarabhai. This led Lerner, to be, for a while, a consultant on the ATS-6 programme which would be the launch pad for the SITE experiment. Lerner would later describe SITE as a 'brilliant example of the leapfrogging process which communications technology makes possible. **Given the problems raised by India's acceleration of**

history and its instant mobilization of the periphery, this type of leapfrogging over the long Western experience is what India needs most'.

Quoted in Sanjay, B.P., The Role of Institutional Relationships in Communication Technology Transfer: A Case Study of the Indian National Satellite System (INSAT), Ph.D. Dissertation, Simon Fraser University, 1989, pg 54.

In many ways ATS-6 would become a globally quintessential example of technological leapfrogging. The purpose of the rest of our argument is to now see how, having made the material leap, the *nation* would redefine its purpose to make the corresponding *narrative* leap, use the 'air waves' now to produce the new 'public'. If I am right, the technology would be in place by the 1970s, but the narrative would happen only two decades later. Although both radio and cinema provide important precedents to television, it is perhaps the telegraph that constitutes the key precedent technology: both can, in their ability to deliver their 'message' to people at their doorstep, enable a diverse symbolic siting of citizen-audiences. **Both are diffuse and concrete, an amalgam of all previous technologies of communication.**

Given the formally unprecedented nature of single telecast-infinitely multiplied reception systems that classical television puts in place, the 'viewer' – as a diffuse, amorphous amalgam – requires, in a very technical sense, first, a prior assembly of a set of enumerative categories of 'who the viewer is', usually seen as what sort of empirically investigable behavioural practices the viewer answers to (for instance in questions like 'when do members of the public sleep at night?' and other questions, eternally striving for greater methodological sophistication,

As Raymond Williams, in his remarkable book on television, was one of the first to point out, just as quantifying an evening's entertainment on television was difficult for viewers to assemble in the sense in which pay-per-view systems (as in cinema or theatre) allow – for it would then be equivalent to reading a few magazines, attending the theatre, going to a film and a soccer match all in one evening – so it was also difficult, from the other end, to quantify who 'saw' television in the sense of the imagined audience of any specific product. Over the years, this difficulty has called for innovative solutions, some of the more familiar ones rendering the viewer of television concrete within the diegetic image itself – in things like canned laughter, or the diegetic audiences of reality television – precisely to overcome the extreme ambiguity involved in signalling to actual viewers that something has been made, so to say, explicitly for them. Raymond Williams, Television: Technology and Cultural Form, London: Routledge (1990). See also Raymond Williams on Television, Selected Writings, London: Routledge (1989).

of who watches/does what at what hour of day). And second, once these categories are in place, to get television to adapt itself to such attributes of the public: to make the individual members of a diffusely defined but nevertheless 'actual' audience transform themselves to actually approximate to their market-research taxonomy. Elsewhere, speaking more specifically about the cinema but in a way that seems to me relevant to this argument about TV audiences, I have suggested that film narratives concretely work out, what Partha Chatterjee called a two-fold move of State functioning: one, 'naming' people as citizens in the way they are 'classified, described, enumerated', paralleled by a second move where people are invited, sometimes coerced, to transform themselves and gradually, over time, made to approximate to the codes of the abstract 'national' subject.

This interminable dilemma between the textually sited viewer and-the 'actual' viewer described in terms like the 'uses and gratifications model' almost never addresses the crucial issue of how television actually transforms habits, converts people into 'ideal viewers'. The problem is inevitably perceived, as for instance by David Morley, as 'an empirical question', and the challenge one of developing appropriate methods of empirical investigation. The 'Nationwide' Audience: Structure and Decoding, London: BFI (1980).

Without getting into the technicalities of this issue, it is possible now to see, as Geoffrey Nowell-Smith shows, a defining category of public service television as being one where 'the audience is defined as the nation, bounded territorially by national frontiers and then subdivided regionally or by other recognized forms of difference'. As built into the very concept of a 'public service', the audience of television can only be arrived at via the nation and, with surprising consistency thereafter, the dominant television audience steadfastly remains what Balibar once called the *homo nationalis*. T**his is in part demonstrable with the evidence of television programming itself:**

Geoffrey Nowell-Smith, 'Broadcasting: National Cultures/ International Business', New Formations 13 (1991).

This became a particularly contentious issue when Star TV aggressively sought a position as India's official channel, taking on Doordarshan in its very bastion, so to say. Its bid to be the official broadcaster of the 1997 Republic Day parade, its hiring of former Information & Broadcasting Ministry Secretary Rathikant Basu as its Chief Executive Officer, and most directly

in India, for instance, none of the channels putting out programming, especially for Indian audiences (excluding material that we receive but which is not explicitly made for us) can be said to have carved out for itself an alternate audience profile from that of 'the national' (Hindi/English) or 'regional' (as with Sun, Udaya, Eenadu etc) either with niche marketing alternatives or with the kinds of closed groups recently being served, for instance, by 'special-interest' websites. Indeed, once these categories of viewership are in place, rarely can television seriously deviate from them, as has been debated extensively in Britain around the possibilities of regional television. For once, this conduit is in place, television itself becomes a major carrier of the very category/categories of citizenship.

perhaps, its anniversary celebration on the lawns of the (former) Prime Minister I.K. Gujral's official residence clearly threatened Doordarshan's very existence. The divide between a public service and commercial broadcaster has now gravitated, by default, to 'terrestrial versus satellite' broadcasting which is again contentious but at least a more straightforward battle for control over the market. Similar battles are in evidence in the Southern states between Sun and Eenadu versus local DD channels for national or sub-national authority.

See Sylvia Harvey and Kevin Robins eds. The Regions, The Nations and the BBC, London: BFI (1993).

In its turn, the State further underscores this perception of the 'audience as nation' with its own claims to be the valid representative of the public gaze, and further translates this into cultural terms of determining what is shown and how it is read. **What Prasad has called, in a different context, the prohibition placed upon the invention of the zone of the private, or in other words the public gaze in its sanctioned fullness, clearly dominates not only the more conventional modes of public service broadcasting but also, and as one of the major entities that justify such a representation, precisely the concept of the 'local' as mobilised by the model of community broadcasting that *Voices* advocates. While one could feasibly extend what the Broadcast Bill calls 'education, community service**

Madhava Prasad has argued how, in certain film genres, 'the private is only invented in and through (the) relationship of family to State ... whereas in the old family, which is at once a family and an authoritarian regime, the private does not exist. As such, the unspoken ... alliance between the State (which is only formally in place) and the numerous pre-modern points of power and authority ... prohibits the invention of the private'. Prasad, 'Cinema and the Desire for Modernity', Journal of Arts & Ideas 25-26 (1993). http://dsal.uchicago.edu/books/artsandideas/pager.html?issue=25-26&objectid=HN681.S597_25-26_075.gif.

environment protection or health awareness' to actually include what Voices terms 'local issues and concerns', or even to 'culturally relevant material' assembled by 'local producers' using 'local voices', which can 'influence public opinion, create consensus, strengthen democracy', one only needs to imagine what would happen if these local voices were to so shift their named sites as to include programming that could, if made truly local in the sense in which print media can often become, deal with proscribed, censored, politically inflammatory, or even simply pornographic issues – all presumably 'local concerns' in one sense at least – to recognise how strong the State-endorsed public gaze, literally the nation as audience, could dominate so avowedly local a process of dissemination/reception.

In the words of the Broadcasting Bill to which Voices draws attention, 'the Authority may grant licenses to ... institutions ... for terrestrial broadcasting services ... provided ... the object of such institution is to provide education, community service, environment protection or health awareness' (section 16/2).

Let us, with this argument, return to the categories of 'public' and 'State', to the career of television 20 years after the initial SITE experiment. I want to revisit my contention that the judgment's declaration that 'State control is really government control' (to be represented through a 'public statutory corporation') was epochal. All the commentators quoted recognize, I suggest, that at stake are predominantly symbolic categories, which have to do with:

(A) The siting of a new category of the public which is not, let us say, the 'governmentalized' version of the 'audience as nation', but one that represents something new: an updated authority;

(B) The recognition that this category can most palpably be assembled in its symbolic fullness through the devising of a mode of address that could site it as the possessor of authority and as capable of acting upon that authority. (How actual people will respond to such interpellation is not directly the issue at this moment: what is at issue is how people should be trained to 'look' as they incarnate a public gaze that is 'independent of State control').

I have already suggested that in this newly refurbished concept of the 'public' is an entity to which a (symbolic) capacity can be attributed: the capacity for taking certain kinds of *action*. If it is to be capable of action, it also now must possess an *a priori* gaze that is seemingly independent of the State, a seminal new faculty crucial for liberalisation-era TV.

What sort of *action* was this public capable of? was now the real question that the judgment asks and the Broadcast Bill sees to elaborate. With the conduit audience/ nation/ government/public charted out above, a new category of 'government' emerges which, as the lowest and most degraded version of 'audience as nation', extended to State-domination over the public gaze, and finally to governmental committees like the proposed BAI which are supposed to incarnate these virtues and responsibilities, was now presented as something of an agent acting on behalf of the public, who in turn had to be presented as pre-existing it, and who could invent it on their terms. It appears possible therefore, in the judgment itself and in all three propositions presented in its context above, to indict the State-as-government as a poor agent, a bad mediator, and to suggest that 'the public' possesses the possibility of hiring alternative agents who could perform the same functions better, just as one would fire an unsatisfactory service and hire another (or perhaps simply zap a channel). In a direct inversion of what Partha Chatterjee calls the democratic activity of State functioning, where people living in a nation are 'named' as citizens in the way they are 'classified, described, enumerated' as a 'population', here the public could in their turn, reverse this entire relationship and enumerate on their own a set of responsibilities, or at least a list of adjectives, that this mediating agent should answer to. According to the Supreme Court, therefore, a 'public statutory corporation' should be 'impartial' in 'political, economic and social matters', 'balanced' in its presentation of views and opinions, ensure 'pluralism' and 'diversity', provide 'equal access to all citizens ... to avail of this medium'.

To qualify as a proper representative of this 'public', then, requires an agency that is

- Impartial
- Balanced
- Pluralistic
- Diverse
- Equally accessible

and we could perhaps add:

- Efficient
- Incorruptible

For Rajeev Dhawan, for instance, the 'government by stealth' — a government making secret deals with 'grasping Indian and foreign interests in ways that belie the importance of the freedom of speech and expression' — is contrasted with a 'publicly funded public channel which will give the commercial have-nots an effective say'. How it will do that is really not so much the issue for him: the *symbolic demonstrability of public-ness seems clearly for him a more important issue than its practicability*. The National Workshop, in contrast, but also more pragmatically perhaps, designates this 'public' straightforwardly as the consumer: in order to keep, at all times, the 'interest of the consumer' at heart it wants a 'fair and level playing field', a 'most friendly business environment for accelerated national and international participation and investment'.

To categorise *this* public it was necessary on the one hand to speak of them as specific sets of people, with specific problems, 'local issues and concerns', as *Voices* puts it. On the other hand, however, this specificity could only be realized – actualized – in the way it was translated into representation in the new public domain (the right of all 'citizens and groups to avail of this medium' as the judgment states), within what is otherwise a 'global and fast, efficient and accessible-to-all at low cost-to-consumer, communications/information infrastructure' on which 'a people's very survival depends' (in the conclusion of the Ad., Club Workshop).

***This* public is no longer an 'emergent bourgeoisie (lacking) the social conditions for establishing complete hegemony over the nation ... and (attempting) a 'molecular transformation' of the old dominant classes into partners' (Chatterjee), but rather a newer entity seemingly capable of installing powerful agents equipped to look after its interests, such as Dhawan's 'public trust', the Ad. Club's 'newly independent autonomous public authority', or *Voices*' techno-savvy 'community'**. The government, the most obvious agent on hire, is, by definition, incapable of playing that role: indeed, the government's declared incapacity in playing that role is a definitive factor in identifying the role itself. The government, precisely, is the one agency excluded from the 'public statutory corporation'; hence the judgment's explicit 'control of the public as distinct from the government'.

Nationalist Thought and the Colonial World: A Derivative Discourse, OUP/Zed Books, 1986, p. 30.

By the mid-1990s, the damsel-in-distress Indian state was once again on the lookout of a utopian technology: a technology that not only carried no stains of past failures, but could arrive, as if on a white charger, and rescue the damsel with its impeccable, 'impartial, balanced, pluralistic, diverse, equally accessible, efficient, incorruptible' manners.

Let us now make our final pass at that statement, 'Air waves are public property'. What 'air waves' usually mean are electromagnetic wave spectra, discovered in the late nineteenth century as a new 'natural' resource by which information could be converted into units and transmitted either terrestrially, through the sky (and get 'bent' in the ionosphere), or in space where they are bounced off either natural or man-made satellites. Air waves have not been public property in any of the above categories for the last 60 years. Initially the property of defense establishments, they have been strictly controlled by international and national agencies and allocated for different functions, initially for radar and radio, and later for television alongside a host of other technologies. Necessarily, when they were discovered, their very system of transmission (air/sky/space) transcended national boundaries, but for several decades there was no real problem over this. The International Telecommunications Union, established in 1932, later set in place the International

The following information is drawn mainly from G.N. Sharma's Satellite Communications and Outer Space: Regulatory Aspects, Ahmedabad: Academic Book Centre (1988).

Frequency Regulation Board (in 1947) where it was agreed that certain 'global' frequencies be reserved for global activity, such as telephone systems, while other bands be reserved for specifically national priorities, usually to do with defense, transport, the police, weather forecasting, etc.

Despite major, and celebrated, differences between 'first' and 'third' world nations over frequency allocation, overall national dominance over this area was not really contested until commercial satellite systems came up. It was the INTELSAT-1, put up in 1964 by a consortium of nations and commercial organizations that led throughout the decade to disputes over boundary rights, extending to copyright disputes that often emerged from the problems involved in making the national boundary compatible with the satellite 'footprint'. To this day, private corporations are not eligible for allocation of 'parking slots' for satellites in Geo-Stationary Orbit, leading to extraordinary situations where major 1990s companies like the Hughes Corporation, Motorola or Hutchison-Whampoa, or indeed even some nations, were forced to work with some pliable government or other (for instance the AsiaSat, which made STAR-TV possible, was put up by Hutchison with the Chinese government), and Tonga had exploited its position on the equator to co-sponsor the RIMSAT-1 (130-degrees east of GSO) and another one jointly with Indonesia (134-degrees east), and, in addition, 'booked' ten more parking slots in GSO with obviously commercial intentions.

Two changes in recent times would affect the traditional national dominance over wave spectra: 1. The spread, indeed the explosion, of the technologies that used airwaves to precisely local function: in satellite technology itself with the arrival of 'Smallsats' weighing less than 450 kg, and then with cellular phones, pagers, local-area networks, neighbourhood cable systems which were already by the mid-1990s giving the telephone department a run for its money on their capacity to carry the Internet. In tandem with each other, these developments effectively transformed the very way broadband technologies that the judgment refers to by the term 'air waves' could present their possibilities and enter local 'public' discourses, while also

transforming the relationship between the technologies themselves, the resources they could demand, and the extent to which governments could retain control over these resources. Among the claims being made were:

First: the claim that digitalized transmission is efficient, and capable of truly servicing the 'greatest good': the maximum number of users. **Efficiency here means something rather particular: there is no loss of generation, every end-result of any kind of information transmission is like an original and therefore, not corrupted in the way that something 'analogous', already mediated, as analogue systems produce, would be.** Here the 'original' defines itself as such in its capacity for both endless duplication and endless distribution of original material, whatever it might be.

Second, the claim of compatibility of such transmission with all forms of language, whether visual, verbal or any other kind of abstraction. **Originating, as a textbook on digital electronics writes, 'with man using his fingers - digits - as counting devices', the technology repeatedly presents both its diversity and plurality in the following claim: whatever your information, we can encode it for you better than anyone.**

Third, the claim of being a purely natural resource, as explicitly therefore is not the product of human labour. **As one ideologue claimed, the airwaves have been present from the beginning of time, and although they remain every day a finite natural resource, it is endlessly regenerable: 'Spectrum not used today is gone forever'.** Natural, therefore accessible to all, 'allocatable for the greatest good'.

31. See, in a related area, Prabhat Patnaik's 'On the Concept of Efficiency', where he mentions a possible and far more practically relevant form of 'efficiency' arising from the 'forced idleness, or involuntary unemployment, of resources', a category not recognized by neo-classical economics in its policy prescriptions. Economic & Political Weekly, 32:43 (Oct 25-31, 1997), p. 2808.

See Timothy Binkley, 'Refiguring Culture', in Philip Hayward/ Tana Wollen ed. Future Visions: New Technologies of the Screen, London: BFI (1993).

Maj. Gen. Pran Nath, 'Radio Frequency Spectrum: Securing their Rights', The Economic Times, Bombay, Sept 7, 1994.

Fourth, the most ubiquitous of all, the claim of interactivity: you can decide what to receive, and you can transform what you receive to your choice. This concept really is the only one that brings any sort of coherence to the otherwise hopelessly dispersed demand for what the judgment calls 'access to all citizens and groups', and to the otherwise entirely incompatible categories of access to representation as against access to the media itself that Dhawan, for instance, so unproblematically brings together in his 'publicly funded channel which will give the commercial have-nots an effective say'.

Clearly much of the rhetoric of Utopian virtue evidently springs from perceptions that do not concern specific technologies (which can and cannot do certain things) as much as they do 'technology' in its broad amalgam – as the term 'air waves' would indicate – which is presented mainly in terms of a set of future possibilities into which we, the public, can invest for the purposes of our self-actualization. This entity, amorphous, but both labour- and ideology-free, is what the 'public statutory corporation' is expected to stand in for, and to represent in all its efficiency, balance, plurality and incorruptibility. The conduit characterizing the television viewer is now complete. The state that defines the 'amorphous' viewer is reduced to the government of the day: viewers, correspondingly elevated to a kind of supervisory 'public', demand that this new entity — the new representative of his/her gaze — now mediate on their behalf. But mediate between whom? Mediate, once again, not simply between the conditions of local existence and transnational media, but rather mediate the way a politically signified specificity, the symbolic 'local' of people apparently possessing a 'cultural voice' that has to be imagined as still intact, would demand mediation with a transnationalism that ought to be subordinate to the local, and more, at its service.

What if the hiving off of food and clothing for Tsunami victims by middlemen, and all the other instances where intended beneficiaries do not receive the message, constitutes a *true* interpretation of the message? More complicatedly, can *mis*interpretations also be correct?

CHAPTER FOUR: *THE EDUCATION MIRACLE AND THE DEVICE*

CHAPTER FOUR: *THE EXPANSION OF HIGHER EDUCATION AND THE DEVICE*

I

THE GER, OR GROSS ENROLMENT RATIO: BRINGING ICT TO HIGHER EDUCATION

In February 2009, the Ministry of Human Resource Development, Government of India, announced a major initiative, the National Mission on Education through Information & Communication Technology (NME-ICT). The purpose of the mission was to use digital resources to arrive at the 11th Five Year Plan target of enhancing the Gross Enrolment Ratio, or GER, in Higher Education by 5 per cent, i.e., from 11 per cent to 16 per cent. What this meant was that by the end of this programme, 16 per cent of the total Indian population qualifying to be in university would be in university.

Before we move to the IT-fication of the higher education sector, I want to spend a little time on the GER itself, since it was a relatively new indicator for the Government of India. As Veerappa Moily, Union Law Minister, had it in a speech in early 2010 in Bangalore, despite the fact that India had over 500 universities and 25,000 colleges, we are 'far behind the developed countries' average of 45 per cent and even countries like China (22 per cent),' and the GER for Dalits, educationally backward minorities and other socially and educationally backward minorities and other socially backward classes was even lower than the national GER.

The problem of low enrolment was itself not new. The MHRD's chart indicating the steady dropping out of students as a whole, and especially among India's Scheduled Castes cannot surprise too many people.

Gross Enrolment Ratio (GER) Among Total Population and SC Population

(In % age)

Age Group	Total			SC		
	Boys	Girls	Total	Boys	Girls	Total
6-11 (Classes I-V)	112.6	105.8	109.4	126.1	110.0	118.4
11-14 (Classes VI-VII)	75.4	66.5	71.1	81.0	64.9	73.4
6-14 (Classes I-VIII)	98.5	91.0	94.9	109.3	93.6	101.8
14-16 (Classes IX-X)	57.7	46.2	52.2	54.8	40.3	48.1
16-18 (Classes XI-XII)	31.5	25.1	28.5	27.9	20.7	24.6
14-16 (Classes IX-XII)	44.7	35.8	40.4	41.7	30.8	36.6
6-18 (Classes I-XII)	80.6	73.1	77.0	87.8	74.5	81.5
18-24 (Higher Edn.)	13.6	9.3	11.6	10.1	6.4	8.3

Source: Abstract of Selected Educational Statistics -2005-2006
Dept. of Higher Education, Ministry of Human Resource Development, March 2008

What *was* perhaps new was the heavy emphasis on *ICT* as the means by which to address the problem. Was this techno-utopia? Was it a phantasy of new technologies miraculously performing existing tasks better than they could? Or was there any likelihood of awareness that new technologies could pose new problems, or at least cause new situations to arise that were not always comprehensible to older definitions? Even by Indian standards of technological delivery – even with the radio miracle, the special plan for television and the telecom revolution – nothing came bigger than this giant claim. As with the UID project, it is perhaps too early to say what will happen – and like all colossal initiatives this one too runs the risk of being a colossal disaster. Yet, an initiative of such a scale needs attention because, succeed or fail, its ramifications cannot but be massive. What was widely acknowledged was that if the Government of India's target of reaching a GER of 30 per cent by 2020 had to be reached, a number of things needs to be done. The number of universities and colleges would have to increase manifold, and trained faculty had to be produced somehow to man these new institutions. In March 2010, D. D. Purandeswari, Minister of State for Human Resource Development, while noting that the prime limitation the government faced was the adequacy of teachers, and that 'failure to redress the

faculty shortage would hamper the achievement of the targets for increase in GER set out by Government', remained nevertheless optimistic that the GER in higher education could reach 15 per cent of the population in the age group of 18-24 years by as soon as 2011-12.

So what is the salience of Gross Enrolment Ratio? **The concept is sometimes attributed to American sociologist Martin Trow, who tried to analyze the progression of higher education from elite to mass and finally to universal access.** Recognizing that historically higher education was by definition an elite occupation, and that universal access to such a thing was a new development to the very concept of higher education, Trow proposed a simple arithmetic: that higher education systems that enrolled up to 15 per cent of the relevant age group should be described as elite systems, those who enrolled between 15 per cent and 50 per cent of the age group were mass systems; and those that enrolled more than 50 per cent were universal systems. The key to higher education reform and development was precisely one of how to negotiate the increase the gross enrolment rate (GER) of the higher education age group, i.e., negotiate elite requirements with 'massification'.

Trow, Martin, 'From Mass Higher Education to Universal Access: The American Advantage', in Philip G. Altbach, Patricia J. Gumport and Donald Bruce Johnstone (ed.) In Defense of American Higher Education, Baltimore: The Johns Hopkins University Press, 2001, pg 110-143.

Let us now define our Ailawadi Paradox as it pertains to higher education as follows: (1) Making higher education available to all people of society is ideally a good thing, but this is difficult to achieve under present conditions. (2) The problems as they present themselves to State structures are twofold: (i) As states have trouble making access to higher education (as against primary education) into a *right*, and (ii) Since making higher available to all is sure to make *quality*, higher education should go down the tube, (3) and finally, quality higher education can only be delivered by private, or at least autonomous institutions, who will certainly accept no restrictions on either fee structures or on who they choose to admit.

Is massification of higher education at all desirable? Should higher education be maintained as an elite category if it has to adhere to quality of education? By 2008, most Asian countries had declared their commitment to the 'mass' alternative, and

GER became an index of human development alongside venerable economic criteria such as standard of living, development of the industrial base and per capita income. Applying Trow's formulations to ASEAN, Jianxin Zhang (2008) showed that although no ASEAN countries had entered into the universal stage, and nobody could match the Swedish standard of a GER (82 per cent), by 2004 at least seven ASEAN countries (Brunei, Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam) had reached a GER of about 15 per cent, so that at least mass if not Universal higher education was imminently possible. The most spectacular rise among these was Thailand, whose GER in 1960 was only 3.3 per cent, went down to 2 per cent in 1965, rose to 11 per cent in 1979, 20 per cent in 1985 and 44 per cent in 2004.

Prof. Zhang has a nuanced position on whether this is or is not a good thing. While it is true that at its 'elite' stage, higher education typically reproduces social position (reinforcing social strata, for example), by the time universities reach the 'mass' higher education stage – from the typical symbol of a 'university city' with a student base of 2-3,000 to comprehensive multiversities made up of 30-40,000 students and where a diversified system of full-time, part-time, distance and open systems co-exist – the 'originally clear boundary between higher education institutes and society gradually disappears'. Higher education then increasingly becomes a *right*, and in the process also links up to the employability of students (as against possessing stand-alone research relevance) and students from mass higher education institutes end up in a 'massification employment' era, where a large number of graduates compete for limited employment opportunities. While elite higher education can guarantee high research and teaching quality, mass higher education is forced to adopt the fixed educational expense, big classes, limited teachers and embarrassing teaching conditions, and relationships between teacher and student going cold. Despite the risk of stereotyping, Prof. Zhang's contention perhaps stands that countries *should not choose between elite and mass*, but that both had their uses and should exist in comfortable harmony.

By the mid-2000s, the Thailand alternative, which had effectively become the only way to go, was being seen as offering a third alternative to the two commonest means of massifying education: the free higher education system, as in Singapore, or privatization, as in Indonesia, Philippines and Malaysia where private higher education institutes covered 88 per cent of the system in 2007. Thailand was doing this through IT, through two open universities, especially the benchmarking Sukhothai Thammathirat Open University (STOU), started as recently as 1978, but whose deployment of the open and distance learning (ODL) strategy is credited with singlehandedly bringing Thailand into the 'mass' stage. By the mid-2000s, the Thailand experiment was dictating the agenda: already at UNESCO's Beijing Declaration of the E-9 countries, adopted by the E-9 Ministerial Review Meeting in August, 2001, GER had become primarily a tool for introducing ICT into higher education, as both free- and- private universities were being replaced by their online open variant. According to the Beijing Declaration, ICTs needed to be used in all fields of basic education, especially to reach the unreached; secondly, networks of ICTs should be used to foster interactions and experiences and sharing of resources; thirdly, teachers should be trained in the use of ICTs; and finally there should be a process of identifying and documenting best practices in ICT. According to the Education for All (EFA) Monitoring Report 2002, the greatest EFA challenge lay in South Asia. The focus here would be on the development of ICT-based literacy materials and mobilization of partners for implementation in Bangladesh, India and Pakistan, to be coordinated within the United Nations Literacy Decade (UNLD).

II
INDIA

MAKING HIGHER EDUCATION A RIGHT

India's enrolment rate for higher education, which has risen from 0.7 per cent in 1950-51, 1.4 per cent in 1960-61, and 8 per cent in early 2000, is still very low (about 10 per cent) compared to the world average of 23.2 per cent, and an average of 54.6 per cent for developed countries, 36.3 per cent for countries in

transition, and 11.3 per cent for developing countries. Even the existing EER of some 60 per cent indicates that 40 per cent of students who complete their higher secondary programs do not enter the realm of tertiary education. ***Even if we increase enrolment rate by 5 per cent every plan period, it would take more than a quarter century to come close to the level of developed countries.*** **(World Bank Country report on India's Higher Education, 2006)**

http://siteresources.worldbank.org/EDUCATION/Resources/278200-1121703274255/1439264-1193249163062/India_Country Summary.pdf.

As on 31.03.2009, India had 471 universities: 268 state, 40 central, 125 deemed, and 5 institutions established under various state legislations and 33 institutions of national importance established by Central Legislation. In addition, it had 22,604 colleges including around 2,260 colleges for women.

Not only is this one of the largest national educational systems anywhere, but it also has some of the most tension-ridden conflicts in Asia on the question of massification. A key issue, that has bedevilled the Indian education system from independence has been the question of whether education is or is not a right, and in particular, can access to education be included within the social justice initiatives with which independent India has fitfully engaged?

Quoting one of the most vociferous opponents of the contentious 'reservations' policy India has followed since independence, former IIT-Chennai Director P.V. Indiresan ('W(h)ither IITs?' in *Unviable Universities*, Seminar #494, October 2000) asks whether higher education is a 'non-merit good' deserving little or no subsidy as some finance experts make it out to be. He recognizes that back of it is a political question: should higher education be a democratic right open to all, or should it be confined to a few? And if it is to be only a few, should that few be confined to the competent, or should it be the preserve of the politically privileged, or should it be purchasable by the rich? (Ailawadi would not have been able to tell the difference, I guess). The argument that higher education was a non-merit good was that since college education enabled a student to get better paid, and qualify for more prestigious and more secure jobs – if, in the end, it only benefitted the student – then

http://www.india-seminar.com/2000/494/494%20p.v.%20indiresan.htm.

how was it a public good, and why should taxpayer money be used to benefit this social climber? Should we not give the guy a loan instead that he could pay back when he got his cushy job? On the other hand, asked Indiresan, is the benefit entirely individual? Do graduates not also contribute to the national economy?

Indiresan then says that if the government restricts itself to educating only the numbers that it considered were essential for the economy, substantial funds could certainly be released and the financial burden made manageable. Many wasteful and unnecessary courses could, for example, fade away. On the other hand, if this happened, higher education would become selective and cease to be a democratic right.

> If the numbers admitted to colleges is limited to the number supported by the economy (and affordable by the government), increasing number of meritorious students from upper castes will be denied higher education. On the other hand, if colleges are forced to go private and self-supporting, the rich will benefit and the poor will be left out. If it is decided to sacrifice quality, the problem may be resolved without much difficulty. On the other hand, if the country wants at least a few institutions like IITs to be internationally competitive, the issue becomes complex. Either way, it is a matter of political choice.

In 2005, the 93rd amendment to the Constitution only poured fuel into the fire by adding a new section 5 to Article 15 (affirming that nobody can be discriminated against on religion, race, caste, sex, place of birth, etc.), by bringing into the elite-mass fray a third category: the private educational institution. It stated that the core of Article 15 did not prevent the State from making a special provision for the advancement of socially and educationally backward classes of citizens or for the scheduled castes or the scheduled tribes that might ensure their *admission to educational institutions including private educational institutions, whether aided or unaided by the State*. The exceptions were minority educational institutions.

Such an amendment led, as Sudhir Krishnaswamy and Madhav Khosla show in their very useful summary of the consequences of this amendment, to a whole slew of debates, including: was the amendment at all legally valid?, Could it really allow the government to dictate admissions policy to private unaided educational institutions?, Should such a reservations policy include OBCs? What about the notorious 'creamy layer'? and so on.

'Reading A K Thakur vs Union of India: Legal Effect and Significance', Economic & Political Weekly v 43 N 29 July 19 - July 25, 2008.

The two most crucial issues around massification – the ones that cut to the bone on the very purpose of the educational system – were, in Indian debates, to do with whether education needed to be a stand-alone right, or whether it needed to be linked to employability. Should Article 15(5) (non-discrimination) be read along with Article 16, which emphasizes equality in the area of *public employment* and which, say Krishnaswamy and Khosla, has been the standard way of reading higher education reservations since the *State of Madras vs. Champakam Dorairajan* case of 1951. Such a definition directly affects the 'skill-versus-knowledge' question that would divide higher education into the 'professions' (law, architecture, etc.), governed either by the All India Council of Technical Education (AICTE) and the professional councils like (the Bar Council, or the Council of Architects) as against the 'academic' institutions. The former define their *raison d'être* along the lines of employability, the latter provide stand-alone definitions for why they exist. The second was around whether the government could issue diktats to private educational institutions: something that would cut to the bone, both in the area of undergraduate education, as well as the impending Private Universities Bill which would open higher education to global players. As Indiresan asked, if quality education is expensive, should the government spread itself so thin as to support any and every undergraduate college? There are, says Indiresan, 8000 colleges in the country (over 500 of them are in engineering) and a new college is started every other day; most of these are heavily subsidised, proportionately even more than the IITs. How does the subsidy model square with the concept of the university as an institution of research?

By 2006, several of these old issues were being revamped under a new, game-changing, vision for the system. The Department of Higher Education planned to have at least one Central University of national character in each state, eight new IITs and eight IIMs, 20 Indian Institutes of Information Technology and 10 National Institutes of Technology, 5 Indian Institutes of Science Education and two Schools of Planning and Architecture. **The Department of Higher Education would additionally assist state governments in establishing 374 new degree colleges, one each in educationally backward districts of the country and 1000 new polytechincs.**

Result-Framework Document (RFD) of the Department of Higher Education for the Year 2010-2011: http://education.nic.in/HigherEdu/RFD-2010-11.pdf.

This was by any standards a huge expansion. Several documents from this time refer to the major upheavals in the field of higher education in India. No document more completely captures the challenges before India's higher education system as a whole than the 2006 National Knowledge Commission's recommendations on Higher Education. Claiming that 'higher education has made a significant contribution to economic development, social progress and political democracy, in independent India', the report nevertheless says that there is 'serious cause for concern at this juncture'. The main concern is that the *proportion of our population, in the relevant age group that enters the world of higher education is about seven per cent*. This is mainly because the opportunities for higher education in terms of the number of places in universities are simply not adequate in relation to our needs since *large segments of our population just do not have access to higher education*. And finally, *the quality of higher education in most of our universities leaves much to be desired*. 'Higher education needs a systematic overhaul, so that we can educate much larger numbers without diluting academic standards'. This is 'essential because the transformation of economy and society in the twenty-first century would depend, in significant part, on the... foundations for a knowledge society'.

The goal for the 11th Five Year plan (2007-2012), if successful, was to ensure an increase in the enrolment rate of higher education equivalent to the *creation of approximately eight million new seats in Indian higher and technical education*. Further, all institutions would parallelly be asked to make higher education more

inclusive, more responsive to economic needs, and raise quality. **Therefore, the public and the government are likely to increase investment in higher education, and in return demand accelerated change in the higher education sector**.

http://web.worldbank.org/WBSITE/EXTERNAL/WBI/WBIPROGRAMS/KFDLP/0,,contentMDK:21812442~isCURL:Y~pagePK:64156158~piPK:64152884~theSitePK:461198,00.html.

While these recommendations have been a matter of debate, they have been in principle widely accepted as desirable. The larger question was, were they *feasible*?

III

REVISITING THE PARADOX: AND WHAT ICT WAS NOW EXPECTED TO DO FOR INDIA'S HIGHER EDUCATION

This then was the background to the National Mission on Education using ICT (NME-ICT). Once again, technology was meant to wave its wand and get things right.

As with previous instances, technology (the NME-ICT), and law (the proposed NCHER Bill) would somehow come together to address hitherto impossible-to-resolve contradictions. **This section takes a little time off to elaborate on the Paradox that bedevils all higher education, and which takes specific turns in India. I want to examine it with regard to three disparate documents: the National Knowledge Commission's recommendations, the famous Yashpal Committee appointed in 2009 by the MHRD to 'advise on renovation and rejuvenation of higher education' and the proposed 2010 NCHER Bill that arose from the two documents.**

http://www.knowledgecommission.gov.in/recommendations/higher.asp.

http://www.academics-india.com/Yashpal-committee-report.pdf.

http://www.academics-india.com/ncher_bill.htm.

The key problems that the National Knowledge Commission effectively summarized are four: reform of governance, need for new faculty, need for curricular reform and need to revitalize a research tradition. Let me bring the NKC, NME-ICT and the

NCHER Bill together to see how the Gordian knot would now be cut.

For the most part, it appeared that all four problems could be coalesced into the key problem that was being identified: the one of *governance*. The specific overarching umbrella issue was: can governance reform at all take place in the university, research centre and undergraduate colleges? What kind of governance could we now have that might permit the clearly conflicting components of higher education of excellence and massification to come together? **The Indian higher education system is opening up to global competition, with significant transformation of its governance mechanisms**. Academic autonomy has been a major challenge to Indian institutions, both at the undergraduate and post-graduate level, for colleges (many of whom are seeking to upgrade into full-scale university level) as well as universities. Could *autonomy* – and its default equation with *excellence* on the one hand and *privatization* on the other, and the absolute assumption that the three were inseparable, or more, that each somehow guaranteed the other – now be a way by which education could at once become accessible as well as rid itself of any stain of caste-based reservations?

The Knowledge Commission's recommendations were drastic. On the Ailawadi Paradox, it appeared that the Knowledge Commission both wanted to have its cake and eat it: and there lay the conviction that governance, if properly worked out, could give it to them. On the

As the 2006 World Bank Report says, 'the education system is gradually being opened up for change and decentralization. In particular, the federal and state governments are gradually giving higher education institutions more decision and spending power. This represents a move away from detailed government control over spending, teaching, and curriculum decisions, which required frequent approval from federal or state government officials. Besides the 11th Five Year Plan, several facts pay witness to this movement:

- Many institutions have become autonomous during the 10th plan Five Year plan through an increase in the number of autonomous institutions: central universities (2), state universities (39), "deemed-to-be" universities (50), and private universities (10).
- Two recent reports from the Central Advisory Board of Education (CABE) on respectively the 'autonomy of higher education institutions" and 'financing of higher and technical education' recommend changes to governance of the higher education institutions.
- The Oversight Committee on the Implementation of the New Reservation Policy in Higher Educational Institution equally

one hand, they wanted India to expand to around 1500 universities nationwide, which would enable India to attain a gross enrolment ratio of at least 15 per cent by 2015. The focus would have to be on new universities, but *some clusters of affiliated colleges could also become universities*. This was clearly a headlong move into massification. On the other hand, the NKC wanted to *establish 50 National Universities* that could provide education of the highest standard. Clearly, these would not be run-of-the mill but special institutions of a kind.

recommends increased autonomy to institutions within recruitment and remuneration of faculty and admission policies to find the right balance between equity and excellence for each institution.

While we have agreed with Jianxin Zhang's point that the choice need not be made between two kinds of systems, questions nevertheless remain as to what the social consequences might be if this became an unabashedly elitist two-tier system. The NKC said it wanted to create 'fundamental changes in the system of regulation for higher education', mainly because at present the 'barriers to entry are too high' and the 'system of authorising entry is cumbersome'. To do this, the NKC recommended the forming of an Independent Regulatory Authority for Higher Education, or IRAHE, to be an autonomous organization 'at an arm's-length from the government and independent of all stakeholders including the concerned ministries of the government'. It would be the only agency that would be authorized to accord degree granting power to higher education institutions, responsible for monitoring standards and settling disputes, whether private or public.

The NKC also wants to bump up public spending and diversification of finance sources, and for government to increase support for higher education to at least 1.5 per cent of the GDP, out of a total of at least 6 per cent of GDP for education as a whole. As a norm, fees should meet at least 20 per cent of the total expenditure in universities.

As we can see, most of these requirements were classic neoliberal demands in the way we have outlined them: keep the new structure market-rational, pump up state investment but restrict the state to being no more than a *facilitation agency* guaranteeing the *quality and integrity of the investment*, and develop from all this a **new definition of the public good**. Historically speaking, it is unclear as to whether it was the NKC's IRAHE that first mooted the idea of an autonomous regulator that has now become the controversial National Commission for Higher Education and Research (NCHER). Whether it was or not, the NKC's Ailawadi position of seeing autonomy from government as a panacea – a position that clearly echoes the Supreme Court's cricket judgment examined in the previous chapter, of 'public' as against 'government' – clearly outlines one trajectory to the draft NCHER Bill that is soon to appear in the Parliament.

The other trajectory, the more authorized originator of the NCHER concept was the 2009 Yashpal Committee Report. While Yashpal appears to arrive at the same conclusions as the NKC, favouring autonomy, he does so through a very different argument. Yashpal's imagination is unashamedly romantic: he wants

> a university to be a place where new ideas germinate, strike roots and grow tall and sturdy... a unique space, which covers the entire universe of knowledge... a place where creative minds converge, interact with each other and construct visions of new realities. Established notions of truth are challenged in the pursuit of knowledge.

This then is not, or not necessarily, an *employability* argument. Yashpal too wants his university to be an autonomous space, since universities are 'diverse in their design and organization, reflecting the unique historical and socio-cultural settings in which they have grown'.

This diversity reflects the organic links that they have with their surroundings, which are not only physical but cultural as well. Through research and teaching, they create, evaluate and bring about advances in knowledge and culture. The

principle of moral and intellectual autonomy from political authority and economic power is ingrained in the very idea of the university. This autonomy ensures freedom in research and training and it is expected that the governments and the society would respect this fundamental principle. Teaching and research have to be inseparable, because the task of the university is not only to impart knowledge to young people but also to give them opportunities to create their own knowledge. Active and constant engagement with the young minds and hearts of the society also implies that the universities are to serve the society as a whole, and in order to achieve this, considerable investment in continuing education is essential.

On the one side Yashpal does acknowledge the 'slow but increasing democratization of higher education in India', but chooses not to look at it within what most people would understand as democratization, namely as a shorthand for the bitter and contentious reservations debate in higher education. Yashpal simply speaks of it as 'no longer the preserve of the children of the elite, or of the educated/professional middle-class'. While the report does also recognize that 'university education is no longer viewed as a good in itself, but also as the stepping-stone into a higher orbit of the job market, where the student expects a concrete monetary return, and consequently in this perception' – it does not see through the consequences we have explored, of reading Article 15 (5) with Article 16, or providing an 'applied', a consequentialist as against stand-alone, justification for its existence. The report nevertheless, and at the same time, reproduces a fully Humboldtian ideal: 'The university has also been regarded as the trustee of the humanist traditions of the world and it constantly endeavours to fulfil its mission by attaining universal knowledge, which can be done only by transcending geographical, cultural and political boundaries. By doing so, it affirms the need for all cultures to know each other and keeps alive the possibilities of dialogue among them. It is also important to remember that the university aims to develop a scholarly and scientific outlook. This outlook involves the ability to set aside special interests for the sake of impartial analysis. Standing for more than specific factual knowledge, a scientific outlook calls for an analytical and questioning attitude and the continuous exercise of reason.

All this requires us to go beyond specialized knowledge and competence. This universal approach to knowledge demands that boundaries of disciplines be porous and scholars be constantly on guard against the tendency towards 'cubicalization' of knowledge. Apart from resisting fragmentation of knowledge, the idea of a university should at the same time aspire to encompass the world of work in all its forms. Work constitutes the human sphere where knowledge and skills are born, and where new knowledge takes shape in response to social and personal needs. Indeed, the experience and culture of work represents that core space where the humanities and the sciences meet.

In any case, independently of whether the NKC and Yashpal were speaking of the same issue, or how they were seeking to mediate the contradictory demands of elitism/excellence versus democracy, they found themselves reaching the same conclusion. Or, we may say, found two very different routes to address the same Paradox. **Without taking sides on this matter, the Government of India, betraying an almost unseemly haste and in the teeth of opposition from various state governments, has gone full-tilt for autonomy.** Their NCHER would now be run by an autonomous commission, which would, as per the proposed Bill, take measures to promote the autonomy of higher educational institutions for the free pursuit of knowledge and innovation, and for facilitating access, inclusion and opportunities to all, and providing for comprehensive and holistic growth of higher education and research in a competitive global environment, through reforms and renovation.

See The Hindu, June 8, 2010, 'Unease over revised draft of NCHER Bill', (http://www.hindu.com/edu/2010/06/08/stories/2010060850030100.htm).

Such measures would include specifying norms and standards for *authorization to a university to award any degree or diploma*; develop a national curriculum framework with specific reference to new or emerging or inter-disciplinary fields of knowledge and to provide a vision and guide universities in recognizing and revising course curricula; specify *norms of academic quality* for accreditation and benchmarking of higher educational institutions; specify *norms and mechanisms to measure the productivity of research programmes* funded by the commission; encourage *joint and cross-disciplinary programmes* between and amongst universities and other higher

educational institutions; promote *synergy of research* in universities and higher educational institutions with research in other agencies or laboratories. The vice chancellors of all Indian universities would only be selected from a national registry of eligible persons compiled by the commission.

Among the criticisms mounted by state governments have been the one by Kerala's Education Minister, M.A. Baby that NCHER does not give but actually takes away autonomy, in that it intrudes into rights traditionally held by states. In all probability, then, the original paradox – elite versus mass – has only proliferated into further divides, of public-private, aided-autonomous/unaided and now central-federal.

VIRTUALIZING THE PARADOX

Put directly, the NMEICT constituted the technologization of autonomous governance. This has been the classic purpose of the deployment of good and benevolent technology of Indian states for some decades, and to that extent the idea of a distance education programme ridding the Indian university system of the political filth of its student movements and its reservation politics fits directly with e-governance or the role of broadcasting to produce the exemplary citizen-subject. As we now turn to the NMEICT's ambitions, we also have the context for the autonomy – the pure, uncontaminated autonomy that only the future can have, and only something as unpolluted as technology can have – that ICT was now expected to provide. **The NMEICT begins with a strong mission statement: it would convert 'our demographic advantage into a knowledge powerhouse by nurturing and honing our working population into a knowledge or knowledge enabled working population' and thus 'enable India to emerge as a knowledge super power of the world in the shortest possible time'.** How would it do that?

http://www.sakshat.ac.in/PDF/missiondocument.pdf.

Let's agree that in the uniquely Indian way of addressing the Last Mile, such a mission requires at least two layers: first, a layer on a purely symbolic plane, to

produce a new kind of State authority and, second, to create a technologized system of delivery to its named beneficiaries that at least seems to work. I hope we can see a pattern here: this model clearly echoes the e-governance ambition that Balaji Parthasarathy had outlined as 'the defining characteristic [of] the use of computers, and sometimes connectivity', which was to reorganize 'both the functioning of the government and service delivery to citizens' – and the underlying presumption that 'increases in transaction speeds [and] ease of data storage and retrieval' *automatically signals 'transparency and accountability'* (quoted in Chapter 1). It also recalls the television model that the Supreme Court had identified that required a 'public statutory corporation' to be 'impartial' in 'political, economic and social matters', 'balanced' in its presentation of views and opinions, ensure 'pluralism' and 'diversity', and provide 'equal access to all citizens ... to avail of this medium' (quoted in Chapter 3).

In the present instance, the impartial and balanced authority was clearly the autonomous commission of the NCHER. That such a balanced commission would clearly have quite a balancing act to perform if it did everything that the NKC wanted it to do at the same time as it adhered to Yashpal's Humboldtian model was somehow beside the point, since Last Mile technological utopia seems to have the astonishing ability to bridge all such symbolic contradictions. And this was now what the technology itself was going to do:

(a) It would develop and field test **knowledge modules** that have 'the right content' to take care of the aspirations and to address to the **personalized needs of the learners**;

(b) It would generate **research in the field of pedagogy** for development of efficient learning modules for disparate groups of learners;

(c) It would standardize and ensure **quality of contents** to make them world class;

(d) It would build connectivity and knowledge network within institutions of higher learning in the country with a view of **achieving critical mass of researchers** in any given field;

(e) It would make available **e-knowledge contents, free of cost** to all Indians;

(f) It will spread **digital literacy for teacher empowerment**;
(g) It would experiment and conduct field trials in the area of performance optimization of **low cost access/devices** for use of ICT in education;
(h) It would provide support for the creation of **virtual technological universities**;
(i) It would identify and nurture talent; and
(j) It would certify competencies of the human resources acquired either through formal or non-formal means and to evolve a legal framework.

These then were, at least, among the more significant of the mission's ambitions.

Effectively, the NMEICT would claim to access a target of 8 million new entrants into higher education within a determined time-span. It would do so through developing new knowledge modules, generating research in pedagogy, ensure quality of content, and support virtual technological universities. Through such acts, the anonymous virtual university, in this instance, the seven IITs, the Indian Institute of Science and the Indira Gandhi National Open University (IGNOU) – would create an entirely new National Programme for Technologically Enhanced Learning (NPTEL). **The NPTEL originated as a collaboration between the IITs, IIMs and the Carnegie Mellon University between 1999 and 2003.** The original idea was to create contents for 100 courses as Web based supplements and 100 complete video courses, for 40 hours of duration per course. Five engineering branches (civil, computer science, electrical, electronics and communication and mechanical) and all core science programmes in engineering for undergraduates were to be covered. The main objective was to enhance the quality of engineering education in the country by developing curriculum based video and web courses.

http://nptel.iitm.ac.in.

In the first phase of the project, supplementary content put together for 129 web courses in engineering, science and humanities have been developed and 110 courses were developed in video format, with each course comprising of approximately 40 or more one-hour lectures. The result was an astonishing body of (I say this not being an engineer myself, but I have seen them, and have spoken to students who have

taken them) perhaps the most unimaginative dry-as-dust courses ever taught on a virtual platform, but that getting good courses up was clearly not the only – or even main – purpose of the programme. In all the *Hic Rhodus Hic Salta* leaps that this book has tried to chronicle, nothing came larger than this one.

Once virtualized, the technology attributed the conditions of a new kind of benevolent apparatus. It is astonishing how much benevolent authority would be heaped onto the apparatus in short order. It is, for example, entirely open source: I am told not only open source platforms, but open source *content*. Although the NPTEL presently has a fee of some kind, I am also told that the new NPTEL-2 programme expects to be entirely open, and this includes textbooks. It expects to work with what has been dubbed the 'four-quadrant' model, in which the e-tutor combines with a course wiki, an animated module for instruction, and a student self-assessment format. The NPTEL claim is that Phase 2 objectives are to create content for science and engineering courses in all major disciplines as well as specialized and newly developing interdisciplinary subjects for which there is very little academic expertise in private colleges in addition to helping colleges through workshops and discussion boards for implementing NPTEL content in their curriculum. This is the most significant difference between open educational resources developed worldwide and NPTEL. *It is one of the fundamental goals of the project to bring in all the best teachers in the country under the umbrella of NPTEL and record their lectures, seek their collaboration with IITs and IISc and make their courses available for the community under free and open sources agreement. There is already a move to create open virtual laboratories in the Internet for engineering subjects* initiated by IIT Delhi which is extremely important for our country. **Another primary objective is to forge strong ties with major academic initiatives worldwide such as MIT OCW, Commonwealth of Learning, British Open University, Australian Open Universities and Digital Library initiatives (to mention a few) and with industry for developing new technological tools for learning and dissemination.**

http://nptel.iitm.ac.in/faq.php.

At the time of writing, the NMEICT Standing Committee has processed around 70 applications, from institutions far and near, small and large. Among its more stand-out achievements has been the INFLIBNET's extraordinary N-List programme, which has so far connected 6,000 government and government-aided colleges covered under the 12B Section of UGC Act and now gives them selected electronic resources including electronic journals, electronic books and bibliographic databases. **These resources include more than 2,100 e-journals, 51,000 e-books and a bibliographic database called MathSciNet containing more than two million reviews of research articles in mathematics.** For the most part however, month after month the Standing Committee hears proposals to convert this or that curriculum into a virtual platform. I have attended two, and have to confess that I stand humbled and awed at the range of material that goes in the name of curriculum building in India. To give just one instance, here is a gentleman named T.V. Thulasidharan who wants to assemble an 'e-learning package on sociological concepts prescribed for teacher education programmes'. He justifies his project by describing sociological concepts as 'a broad and abstract phenomenon about human motor-actions and inter-relations of man's behaviour in groups'. He says such concepts are difficult for students to understand completely, and therefore, the 'e-learning packages investigator' will 'concretize these abstract sociological principles'. Mainly his procedure will constitute identification and selection of concepts, preparing a story board, developing 'learning packages with ample provisions for multimedia animation, hypertext, interactivity, etc.', developing the appropriate scaffolding software and making these software available on IGNOU's website. A second proposal by the PSG College of Technology, Coimbatore, also presented on the same day, wants mainly to convert its courses on automobile engineering, textile technology, metallurgical engineering, computer science, biomedical engineering and humanities – with the last being simply defined as 'soft skills for professionalism'.

As the NMEICT soldiers on, it appears that the following predictions may well be safely be made: first, that over the next few years it will be inundating the country with online courses. Second, this material would be entirely in the public domain.

http://nlist.inflibnet.ac.in/N_LIST%20Brochure.pdf.

Third, to be read with the second point that it is highly unlikely that any new research would emerge out of this — either research in the sectors whose courses are being so industriously virtualized, or research in the field of pedagogy. Scary thought: if we were to only use public domain material, without original new research, chances are that we will only be using third-rate 'digests' and 'guides' that bypass copyright laws as they summarize original (and copyrighted) material.

Such a headlong plunge into virtual massification could pose many problems. All of them are immense, and some of them potentially insurmountable. Apart from the ubiquitous claim to 'open source' it remains entirely unclear as to whether there is any strategy for assembling and disseminating this material on any scalable platform, or even a clutch of platforms. It remains even more unclear as to how this material can be perpetuated beyond its initial assembly. There is no sample course indicating the 'four quadrant' methodology (the combination of e-tutor/course wiki/ student self assessment and learning aids) that is being touted so assiduously.

IV
THE UTOPIAN DEVICE

Just as the diagnosis was gradually setting in, however, came the most extraordinary of new developments of the programme, and, symbolically, its most spectacular leap yet. This was its claim that the programme would 'experiment and conduct field trials in the area of performance optimization of *low cost access/devices* for use of ICT in education', and the Rs. 1,500 laptop. On July 21, 2010, HRD Minister, Kapil Sibal, said that the Government of India was going to introduce a laptop for Rs 1,500 ($ 35). Claiming that within a year all college-going students would own a laptop, the minister said that the ultimate target was to bring the laptop price down to $ 10. The device, developed by a research team comprising IIT professors and experts from IISc, does not have a hard disc and uses Linux. It has support for video web conferencing, a multimedia content viewer, Open Office, SciLab and Internet browsing with flash plug-in. It also has wireless communication for audio/video, a cloud computing

option, remote device management capability, and multi-media input output interface option. It also works with solar panels.

Will the Rs. 1,500 laptop join chicken mesh antennae and the WLL-M to become yet another glittering example of a breakthrough technology as India leapfrogs yet again? This device would now be the way by which the National Mission would deliver its 'high-quality and high-definition interactive video courses and e-content' for various undergraduate and postgraduate courses to 504 universities and 25,000 colleges across the country.

Was this now Game-changer II, or perhaps III (after the first move to massify, and then to autonomize, higher education)? It becomes vital to be able to understand the consequences of both the widespread and, some might say, uncritical unloading of free-and-open source courses upon an unsuspecting new eight million students making up the numbers to massify higher education into its 16 per cent GER in ways *other than* what the state perceives. In defining itself as the ultimate agency capable of crossing the Last Mile, the State has also copyrighted its own definition of the gap.

There has been, in some IT hardware quarters, an awe-inspired gasp of admiration at this somewhat audacious move, but for most people in IT, the government's move lacks credibility. Part of the problem is the lack of credibility of the IITs in handling industry-level demands. The larger problem, it appears, is precisely that we haven't yet figured out what is actually needed, or what the 'form factor' of this miracle device should be. I conclude with a short summary of a survey conducted by K. Sravanthi of CSCS of the industry's view on this sector, and what their plans are to meet it.

It is clear that the eight million new users, or the higher education sector, are widely seen as a whopping new frontier for the industry. **As far back as 2007, shortly after India's Education Ministry rejected the MIT Media Lab's One Laptop Per Child project proposal, which had aimed to provide kids in developing countries with**

a simple $100 machine, under the claim that the country needed classrooms and teachers more than computers for children, *PCs & Chips* reported that Microsoft was planning to launch an educational channel on its MSN portal in India as the next step in a worldwide 'Unlimited Potential' program that aims to get PC access for one billion people worldwide by 2015 (the same target year as the United Nations' eight Millennium Development Goals). The IQ PC was a remarkably innovative collaboration between Microsoft, AMD and Wipro, with Microsoft providing the software stacks, AMD the hardware and Wipro marketing the PC. According to available reports on the Internet, Zenith is the designated original equipment manufacturer (OEM) for the device. The uniqueness of the IQ PC appeared to have been not as much in the design or the utilities in the device itself (as against Connoisseur's Classmate PC to which we will shortly turn) but in MSN's IQ Beta Education Channel, the Internet educational channel to which the device enables access. Microsoft India chairman, Ravi Venkatesan was quoted as saying that "The task that we have today is to make technology pervasive and useful in the everyday lives of more and more people", and so the IQ Channel would feature tutoring, exam coaching, and tutorial content developed by companies such as Brilliant Tutorials and included lessons on developing English speaking skills. Access to the device was only to be initiated by the parent/guardian who would switch on the device and enter the grades that two children are studying in (the device provides access only for two children per family), following which the device would load software relevant to those two grades. Online content appeared largely limited to lessons in Mathematics and Science. Planned at Rs. 21,000 ($514), the PCs would include Windows, Office, Encarta and specialized educational programs such as tutorials for competitive exams and homework helpers. India, says PCs & Chips, ranks as 'one of the largest emerging markets in the world, but Microsoft is eager to whip that Indian pony into a gallop — "Best to get 'em while they're young".

Austin Modine. 'Microsoft to hawk PCs to India's kids: Will it sell? That's the 40,875,000 rupee question'. PCs and Chips. 27th June 2007. http://www.theregister.co.uk/2007/06/27/microsoft_sells_iq_pc_india/.

Apart from Microsoft, there was AMD, which had an initiative called 50x15 attempting to 'enable affordable, accessible Internet connectivity and computing capabilities for 50 per cent of the world's population by the year 2015', with schools

http://50x15.amd.com/en-us/about.aspx.

again the key target groups. Intel has a variety of initiatives in education including the Intel International Science and Engineering Fair and the World Ahead Program, Wipro's 'Applying Thought in Schools' initiative intends to transform pedagogic practices at the school level by working with a cross-section of people and organizations.

For most IT hardware companies, the education sector intersects with existing customer bases with similar demands (travelling professionals and first time users). Sambit Misra, sales representative for Asus, describes the education sector as integrating two sets of customers – first time users and students, so it was possible to design a device that would cater to both sections. Some features considered extremely essential in a device for students, such as ruggedization, would also be of immediate use, for example travelling professionals or field workers. **Additionally, the targeting of students as a market by themselves appeared largely driven by the kind of expenditure that parents made on education: a software vendor for Microsoft's IQ PC said that Indians spent close to Rs. 15,000 crores on just tuitions and remedial classes every year, without counting the expenditure on regular schooling.** The readiness of parents to spend on education and the need for qualitative additions and sometimes changes to regular schooling make the need for innovative devices for education quite apparent.

Kushan Mitra, 'Connecting the Next Billion'. Business Today. August 30th 2007,. http://businesstoday.intoday.in/index.php?option=com_content&task=view&id=1338.

To a great extent education's enormous techno-friendliness has been driven, in the view of the industry, by an imagination of technologies as 'neutral', and thus as intrinsically beneficial. The assumption here, powered by the NMEICT, has been to view students as primarily availing themselves of distance education, living in non-urban settings with major shortages of electricity, and without access to technical assistance, etc. **These have defined the need for devices as needing power back-up and can be charged in easy**

and accessible ways. Such a definition has further consequences in that it usually structures the ways in which these technologies are put to use. On the other hand, despite the low exposure, the larger issue is that students are no longer seen as passive recipients of knowledge (as in the traditional one-to-many classroom) but also as creators and disseminators of knowledge. 'Authorities', including teachers and text books, are no longer a primary source of knowledge and learning. Peer-to-peer, affiliated to social networking, is defining the transformations happening at the level of learning in the classroom.

For instance, Connoisseur Electronics which markets Intel's Classmate PC has developed a charging cart that can be used at the school to charge 30 laptops. The idea is that students can leave the PCs at school at the end of the day so that they need not remember to charge their PCs everyday or relay on unreliable power supply at home. This of course does not seem to take into account erratic electricity at school and will restrict the kind of usage students can put the PC to.

Of the devices surveyed, only the Classmate PC appeared to have been *designed* for educational use (the Rs 1,500 miracle included). Launched in the Indian market in November 2009, manufactured by Intel and marketed by Connoisseur, the Classmate was apparently the result of a four-year research project into the education sector. The first offshoot of this research was the Clamshell, which did not have some of the most attractive features of the Classmate PC, such as a touch-screen. The Classmate PC later integrated the Clamshell (a low-cost, portable PC) with new features that included ruggedness, a shock-proof body and spill-resistant keyboard, a touch screen monitor that could rotate to 360 degrees and used as a note taking device, a digital book reader, software stacks with Mythmaker, MS Office, Art Rage (a low-end software for recording and basic editing of videos) and Quizmaker. Further, it has a signal port to connect it to a larger monitor and has USB ports, SD card reader, a LAN port, microphone port, built in bluetooth and wireless functionality which make it easy for this PC to interact with other Classmate PCs in a classroom. Mythware makes it possible for a teacher to project her screen as a master screen which will then be visible on all the students' PCs. Students can interact with the presentation through annotating it, asking questions through their screens, etc., all of which are immediately visible on the other PCs. This functionality makes peer-to-peer

interaction between the devices possible. Further, the teacher can also monitor what students are doing on their computers through the constantly streaming images of their screens that are visible on her PC.

Most other devices came with more conventional connectivity. Unlike the Classmate, most other devices have been adapted for educational use, as companies have been scrambling to plug this new demand. A short list: Asus Eee PC (launched in the Indian market in 2008) is marketed as a "that will work for both first time computer users and students", and account for 60 per cent of Asus' systems sales (unofficial estimates). Mobilis and SofComp (a version of Mobilis) developed by Encore Software are, respectively, a lightweight computer that comes with a LCD touch screen with stylus input and an integrated keyboard and a compact desktop. Both devices support a wide range of applications such as e-mail, Internet browsing, text-to-speech, creating documents and managing spreadsheets. While neither device was developed specifically for the education sector, both are apparently popular in schools.

The Nova Net PC and the Navigator have worked on a somewhat different thin-client model: the Nova Net PC is priced at Rs. 2999 (monitor costs additional), but both devices work on a pay-for-use model. All files are stored on central servers, with the terminals only allowing Internet connectivity and multiple USB peripherals. Users of the devices also get access to the Nova portal, which besides enabling users to recharge also provides access to tutorial content developed by companies such as NIIT.

The World Bank recently announced that two new education projects it has approved for India will together 'comprise the bank's largest investment in education in one country in FY2010' ($ 1.05 billion). All of these initiatives jostle for the same space as is being entered into by the MHRD's NMEICT.

http://go.worldbank.org/UQNUVJXDBo.

CHAPTER FIVE: *THE UNIQUE IDENTITY NUMBER FOR EVERY RESIDENT IN INDIA PROJECT*

CHAPTER FIVE: *THE UNIQUE IDENTITY NUMBER FOR EVERY RESIDENT IN INDIA PROJECT*

I
QUERYING CITIZENSHIP

In February 2009, the Government of India announced the formation of the Unique Identification Authority of India (UIDAI). The purpose of this initiative was two-fold: it would issue a unique identification *number* to all Indian *residents* that would be (1) robust enough to eliminate duplicate and fake identities, and (2) verifiable and which can authenticated in an easy, cost-effective way.

In the end, these continue to be the two specific claims of the UIDAI. However, as the potential for usage of this service is diversified, and coupled to a growing number of Government of India's Centrally Sponsored Schemes (CSS), these claims have been refracted through several further claims on what such an initiative could do for India. Since many of these add-on claims have been inherited from the intentions of the UIDAI's several partners both within and outside the government, there may be some need to segregate diverse claims in terms of specific delivery structures, and their attendant histories of social rights – to take only one example, the Right to Food campaigns and the recent proposal for a National Food Security Act – from the more specific Last Mile claims that can be attributed to the UIDAI itself.

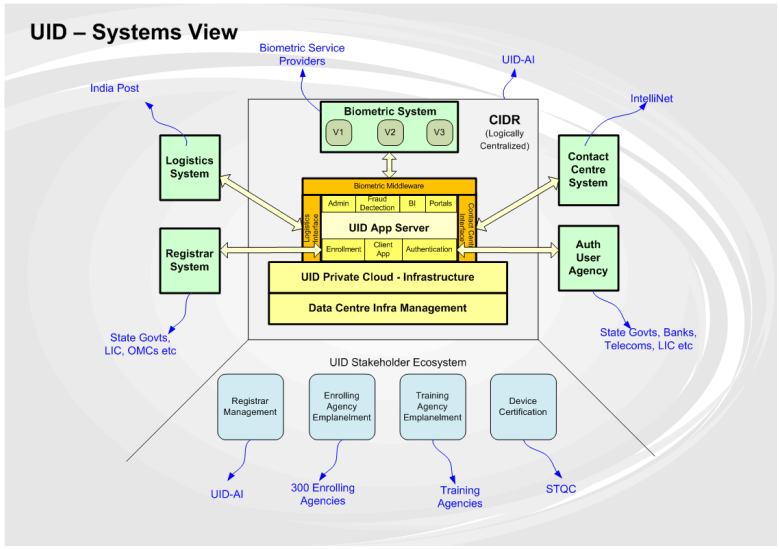
The founding document of the UIDAI was its 2009 working paper titled 'Creating a Unique Identity Number for Every Resident in India'. Here at least, UIDAI claimed that, on its own, it would be no more than this: it would be a *number*, not a *card*, with the UIDAI's role limited only to issuing that number. However, the UID number would itself appear on *several* smart cards, issued by partner programmes in different states, as well as by banks and perhaps other private services. The UID itself would function as an online service, with a straight 'yes-no' authentication,

Quoted from the UIDAI's working paper, 'Creating a Unique Identity Number for Every Resident in India', 2009, hereafter UID Working Paper http://www.comp.polyu.edu.hk/conference/iceb/content/doc/UIDAI.pdf.

and the Aadhaar number would by itself be a random number without intelligence since, they claim, loading intelligence onto identity numbers made them susceptible to fraud and theft. On the other hand the services using Aadhaar authentication could (and do) work with offline authentication as well, with biometric data loaded onto smart cards that can be verified by point-of-sale (POS) machines. The UID would on its own only gather a limited number of Know Your Resident (KYR) data. This would include basic information on the resident, including name, date of birth, place of birth, gender, father's name, father's UID number (optional for adult residents), mother's name, mother's UID number (optional for adult residents) and address (permanent and present). Importantly for Indian social theory, it would not collect information on religion or caste. This, however, would not prevent UID's local registrars from gathering significant amounts of what has come to be known as KYR-Plus information on behalf of other service providers.

As some of the UID's statements have been mediated over time by other related agencies, it is therefore worth detailing what, at its origin, the UID said it was and what it was not. As per the Authority, the UID's primary purpose has been to run a set of servers from a Centralized ID Data Repository through a federated set of databases. **The UIDAI itself details this structure as per the chart below:**

http://uidai.gov.in/images/FrontPageUpdates/tampa/WhatisUniqueaboutIndiaUIDProgram.pdf.



In setting up this architecture, the UIDAI claims to have drawn major lessons from previous State experiments in providing a clear identity to residents, starting with the 1993 effort of the Election Commission to provide voter IDs, the Multipurpose National Identity Card (MNIC) approved in 2003, and PAN and EPIC (Electoral Photo Identity Card), in several ways the initiative appeared to stand apart from its predecessors. Three of its key claims, that it is **not a citizenship record**, second, that **submission of personal data would be voluntary and not coercive**, and lastly that it would directly facilitate **major public distribution welfare systems** derive from its avowed distance from previous schemes. As all these claims, whether by the UIDAI itself or by its partner agencies on the ground have attracted significant public attention, a crucial issue has been, firstly, the very different issues around both rights and delivery mechanisms that arise from each of the UID's links with its key partners, many of which were premised on very different contentions, and not always saying the same thing.

See Taha Mehmood's exemplary work on this, going back to the Multipurpose National Identity Card (MNIC), the National Security Service Council and the Kargil Review Committee (Notes from a Contested History of National Identity Card in India: 1999-2007, http://www.sacw.net/article391.html). Also see http://en.wikipedia.org/wiki/multipurpose_national_identity_card.

Identity: Nothing has attracted more attention than the question of whether the UID is a species of identity card or not, and if it is, then what it is an identity *of*. The Authority has claimed that they would register anybody who lived in India and wanted to be registered. They would also not force anyone to be registered: but of course, to avail of State benefit in any of the schemes that involved Aadhaar, it would become mandatory to have a number. This was a somewhat fine – and controversial – distinction, and it is pivoted around the not-exactly self-evident point that Aadhaar is not a citizenship record, but a record of *identity*. We must here define identity carefully, as a condition of selfhood, and a capacity to represent oneself in the public domain voluntarily and in a manner that is satisfactory to one's self-representation: here, satisfactory to one's sense of *entitlement*. Such a claim of selfhood as entitlement, where individuals *declare* their unique individuality, is not the same as a population record of people's lives.

The primary problem that has therefore, arisen, I think, when Aadhaar biometrics have been mounted

on several data resources that work with population purposes, including those of surveillance that seem to fly in the face of self-defined aspiration, entitlement. **The best known of these bad-news data resources is of course the NATGRID, but it could include no less than, in the words of Home Minister P. Chidambaram, '21 sets of databases... to achieve quick seamless and secure access to desired information for intelligence and enforcement agencies'. These databases would include a DNA data bank, the NATGRID, and a series of others such as the Crime and Criminals Tracking Network and Systems (CCTNS) and a National Counter Terrorism Centre, all of which would work together to make a devastating impact on surveillance.**

Arguing for the CCTNS, Chidambaram is quoted as saying that the 'police stations in the country are, today, virtually unconnected islands. Thanks to telephones and wireless, and especially thanks to mobile telephones, there is voice connectivity between the police station and senior police officers, but that is about all. There is no system of data storage, data sharing and accessing data. There is no system under which one police station can talk to another directly. There is no record of crimes or criminals that can be accessed by a Station House Officer, except the manual records relating to that police station'. The goals of the proposed CCTNS are to 'facilitate collection, storage, retrieval, analysis, transfer and sharing of data and information at the police station and between the police station and the state headquarters and the central police organisations' (http://ncrb.nic.in/cctns.htm).

The plan, according to newspaper reports, is that from May 2011, the National Intelligence Grid (NATGRID) will integrate 21 existing databases with central and state government agencies and other organisations in the public and private sector such as banks, insurance companies, stock exchanges, airlines, railways, telecom service providers, chemical vendors, etc. Eleven government agencies (including RAW, Intelligence Bureau, Revenue Intelligence, Income Tax, etc.) will be able to access sensitive personal information of any individual — such as bank accounts, insurance policies, property owned or rented, travel, income tax returns, driving records, automobiles owned or leased, credit card transactions, stock market trades, phone calls, emails and SMSes, websites visited, etc. A National Population Registry will be established by the 2011 Census, during which fingerprints and iris scans would be taken along with GPS records of each household. According to the home ministry, the central intelligence agencies and state police have plenty of information that is not shared or because there is no umbrella organisation to collate all the information, which any or all the agencies can share to generate real-time intelligence. The NATGRID enables quick extraction of information, data mining, pattern recognition and flagging 'tripwires' of suspicious or unusual activities ('NATGRID will kick in from May 2011. Is the big brother threat for real?', Brijesh Pandey, Tehelka Magazine, Vol 7, Issue 45, Dated November 13, 2010). See Usha Ramanathan, 'A State of Surveillance', International Environmental Law Research Centre, 2010. (http://www.ielrc.org/content/w1002.pdf). Also see Ramanthan, 'A Unique Identity Bill', in Economic & Political Weekly, vol xlv no 30 July 24, 2010, and 'Implications of registering, tracking, profiling', The Hindu (April 5, 2010, http://www.hindu.com/2010/04/05/stories/2010040554240800.htm).

Chidambaram is quoted as saying, at the 22nd Intelligence Bureau Centenary Endowment lecture in December 2009 that such a Centre would be started by end-2010, that 24×7 police control rooms would be set up in all districts. (http://www.news-relay.com/latest-news/national-counter-terrorism-centre-nctc-in-india-by-end-of-2010/).

As listed in the Census of India website FAQs, the NPR will work like this: it will gather details such as name, date of birth, sex, present address, permanent address, names of father, mother and spouse, etc., by visiting each and every household. All usual residents (phrase in original) will be eligible to be included irrespective of their nationality. Each and every household will be given an acknowledgement slip at the time of enumeration. The data will then be entered into computers in the local language of the state as well as in English. Once this database has been created, biometrics such as photograph, 10 fingerprints and probably Iris information will be added for all persons aged 15 years and above. This will be done by arranging camps at every village and at the ward level in every town. Each household will be required to bring the acknowledgement slip to such camps. Those who miss these camps will be given the opportunity to present themselves at permanent NPR centres to be set up at the tehsil/town level.
In the next step, data will be printed out and displayed at prominent places within the village and ward for the public to see. Objections will be sought and registered at this stage. Each of these objections will then be enquired into by the local revenue department officer and a proper disposal given in writing. Persons aggrieved by such order have a right of appeal to the tehsildar and then to the district collector. Once this process is over, the lists will be placed in the gram sabha in villages and the ward committee in towns. Claims and objections will be received at this stage also and dealt with in the same manner described above. The gram sabha/ward committee has to give its clearance or objection within a fixed period of time after which it will be deemed that the lists have been cleared. The lists thus authenticated will then be sent to the Unique Identity Authority of India (UIDAI) for de-duplication and issue of UID Numbers. All duplicates will be eliminated at this stage based on comparison of biometrics. Unique ID numbers will also be generated for every person. The cleaned database along with the UID Number will then be sent back to the Office of the Registrar General and Census Commissioner, India (ORG&CCI) and would form the National Population Register. As the UID system works on the basis of biometric de-duplication, in the case of persons of age 15 years and above (for whom biometrics is available), the UID Number will be available for each individual. For those below the age of 15 years (for whom biometrics is not available), the UID Number will be linked to the parent or guardian. (http://censusindia.gov.in/2011-FAQ/FAQ-Public.html#B).

The other populational database, one more directly linked to Aadhaar, is the National Population Register (NPR). As outlined by Usha Ramanathan, there seems to be a clear divide between the stated positions of the NPR and the UIDAI, although

the NPR claims to be riding on the UIDAI to get its own work done. She points out that the NPR will be assembled, not under the Census Act of 1948 but under the Citizenship Act of 1955 and the Citizenship (Registration of Citizens and Issue of National Identity Cards) Rules 2003. Unlike the Act, which has an express provision regarding confidentiality and would have made it impossible for the government to share census data with something like the UIDAI (since section 15 of the Census Act categorically makes the information that we give to the census agency 'not open to inspection nor admissible in evidence'), information gathered in NPR's proposed house-to-house surveys, and the biometrics collected during the exercise, is expected to directly feed into the UID database. Conflicting directly with the UID's claim to 'voluntary' registration, therefore, the Citizenship Rules of 2003 class every individual and every 'head of family' as an 'informant' who will be penalized if every person in his household is not listed or if the information provided by him is incorrect or outdated. **Additionally, the rules also envisage an exercise in sifting *citizens* from *residents*, a distinction the UID does not make, since persons collecting NPR information are expected to exercise judgment in deciding whether those whose details are being taken down are citizens or not, categorize suspicious people for further investigation.**

http://censusindia.gov.in/2011-Documents/citizenship_rules2003.pdf

Ramanthan, 'A Unique Identity Bill', in Economic & Political Weekly, vol xlv no 30 July 24, 2010, pg 12.

How does the Aadhaar claim to be providing an identity – and with it data that would allow the State to deliver services uniquely targeted to me and my needs – now to be reconciled with initiatives around direct surveillance? Is there a way that current rights discourse can square the purpose of databases that apparently work very different definitions of both voluntariness and citizenship? For many, the link between the UID, as an identity marker, and the use to which both central and state government delivery mechanisms around food, employment, education and health could put it, on the one hand, and the use to which mandatory, populational databases, could use this tagging device for surveillance, has remained unclear for multiple reasons. Is the UID a species of tagging, or in other words, the final and conclusive link between my bodily self, represented by my biometric, and a database of which the UID's own lean-and-mean KYR data would be only the tip of a gigantic

iceberg of information about me? How would such tagging — which makes the UID a technological device of the same generation as, say, the notorious RFID tagging devices of foreign students in the USA that caused such controversy in early 2011 — be an *identity* marker? How, further, would tagging bodily data to a kind of portable identikit constitute authorized acknowledgment that I am who I say I am, and enhance my ability to prove this at any place and any point of time?

It has become increasingly evident that on its own, *unlike* purpose-driven identity definitions, whether these are social security numbers, voting registrations or driving licenses which became only secondarily a proof of identity, the UID had no primary purpose other than establishment of such identity, if it was indeed an identity. It is therefore, in itself purposeless, an empty vessel whose purpose would be needed to be added to it by the services that need it, and it would then modify its own purpose to suit theirs. Since the UID's production of identity is meant to be *used* for numerous purposes, it has become something of a chimera: all things to all people attributed whatever downstream purpose to which it has been put. This plethora of definitional responsibilities the UIDAI has willingly taken on, having assiduously advocated and marketed the varied uses to which both the State and the market intends to put it, but it has also clearly asserted that it would not itself be directly responsible for such uses, since these were autonomous domains of functioning.

Service Delivery – The Big Picture: With this relatively slim armature, and asserting its pro-poor approach while at the same time painting an ever more complex picture of the range of uses, existing and planned, to which it could be put, the UIDAI has stated its ambitions. **It has 'envision(ed) full enrolment of residents, with a focus on enrolling India's poor and underprivileged communities' in relatively short time, with a 'method of authentication (that) will improve service delivery for the poor' (UID Working Paper).** While Aadhaar, as we have seen, will do no delivery on its own, it has come – not always but in key schemes – with one key add-on: a no-frills bank account to all those enrolled. This is either a new bank account that would be issued

On the other hand, the question of whether the UIDAI would ever, on its own, issue any benefits, or ever on its own improve service delivery has split the debate. For example,

promptly upon the completion of the enrolment process, or an existing account now linked to the UID number.

Although it has only been relatively recently that the specific use of such a no-frills account, namely the Direct Cash Transfers system, has been unveiled – it was only launched by the 2011 Budget – such a strategy, of major Centrally Sponsored Schemes working to make direct payments into beneficiary bank accounts, has been long discussed as the ultimate bridging of the Last Mile. **In 2008, Kapur, Mukhopadhyay and Subramanian had outlined a big-picture scenario for what would eventually become the UID project.** Their argument was the following. India had among the largest number of programmes directly addressing poverty eradication, one way or another. In 2006–07, there were at least 151 centrally sponsored schemes entailing annual expenditures of about Rs. 72,000 crore. Thirty key schemes out of these accounted for Rs. 64,000 crore, i.e., almost 90 per cent. If we added CSS programmes that called for additional central plan assistance, such as the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and the Backward Region Grant Fund (BGRF), the allocations to the Food Corporation of India (FCI) for procuring and distributing food grains through the public distribution system (PDS), fertilizer subsidies, kerosene and LPG, the total amount of subsidies would rise to Rs. 88,000 crore.

Devesh Kapur, Partha Mukhopadhyay, and Arvind Subramanian, 'More for the Poor and Less for and by the State: The Case for Direct Cash Transfers'. http://www.iie.com/publications/papers/subramanian0408b.pdf.

Kapur *et al* point to the enormity of waste that is associated with such schemes, contending that numerous reports pointed to 'one incontrovertible fact', namely that

the draft National Identification Authority of India Bill, 2010, creates a problem with its very first line: it claims to be a 'manner of authentication of such individuals to facilitate access to benefits and services to such individuals to which they are entitled', to which Usha Ramanathan bluntly responds, that this Bill 'does not deal with benefits and services. The strategic overview of the unique identification (UID) number/Aadhaar project specifies that the Unique Identification Authority of India (UIDAI) is not concerned with rights and entitlements (and) does not acknowledge entitlements, benefits or services'.

most of the resources were failing to reach their intended beneficiaries. Only a small fraction of overall resources reach the poor due to, in varying degrees, inefficiency of targeting (inability to reach the poor), leakages (to the non-poor), participation costs (foregone earnings that are especially consequential in employment programs) and large administrative costs. The authors quote Planning Commission figures indicating that for every rupee worth of food actually transferred to beneficiaries, the government spent Rs. 3.65, suggesting leakage of about 70 per cent.

From this contention, the authors propose a simple arithmetical solution: around 27.5 per cent of India's roughly 1.13 billion people are below the poverty line, i.e., about 310 million people or 70 million households. If the money spent on CSS and food, fertilizer and fuel subsidies were distributed equally to all these 70 million households, it would mean a monthly transfer of over Rs. 2,140 per household. This would be more than 70 per cent of the urban poverty line income. Indeed, if the government simply gave eligible households the amount of money it spends on the PDS, this alone would entail a monthly transfer of more than Rs. 500 to each household, i.e., about 40 per cent of the entire food budget for a household at the poverty line. More pertinently, such a transfer could allow them to simply buy the entire monthly PDS entitlement of 35 kilograms of rice or wheat in the open market, even at relatively high current market prices.

The authors therefore, propose that central expenditures be redirected into a scheme of outright transfers to individuals, and to local governments. How would such a transfer scheme be implemented? Unlike the past, say Kapur *et al*, there are now robust technologies for making cash transfers that are reliable, transparent and monitorable. The key issues are those of *identifying the beneficiaries and determining the amount of transfers*. Identification here is a significant challenge, given that cash transfer programs would create strong incentives for people to identify themselves as poor.

It is therefore, vital, say Kapur *et al*, to recognize that establishing an individual's *identity* is effectively *almost more important than establishing her eligibility*. Once an individual's identity is established, ineligible beneficiaries can be removed over time as the process of verification is strengthened. The authors' note that several smart cards have been proposed or are already in place: the voter ID card, the BPL card and the NREGS job card, and in some states, the poor will have a health insurance card under the Rashtriya Swasthya Bima Yojana (RSBY) and a PDS smart card. They therefore, recommend that, rather than a discrepancy in ID cards, it was imperative that the various functionalities integrated within a single *individual biometric* service, which would be individual based as opposed to household-based.

As the UID project itself came to be defined, the plan took on almost the exact description anticipated by Kapur *et al*. The UID planned to set up partnerships with, on one the side, major Government of India schemes for service delivery, including precisely the PDS and the NREGS, and on the other, with public and private enterprises which included banks, credit card, mobile phone and insurance companies. As stated in the Working Paper, the 'Authority will partner with agencies such as central and state departments and private sector agencies who will be 'Registrars' for the UIDAI. Registrars will process UID applications, and connect to the Central Identities Data Repository (CIDR) to de-duplicate resident information and receive UID numbers. These registrars can either be enrollers, or will appoint agencies as enrollers, who will interface with people seeking UID numbers. The Authority will also partner with service providers for authentication.

As defined in the Working Paper, the process of registration would have four levels, (1) the registrar, the state government, but also possibly a private sector agency, (2) the sub-registrar, typically a government department such as the food & civil supplies department, (3) the enrolling agency, which could be the bank, the ration shop or the cyber-kiosk, and (4) the user of authentication services, such as mobile phone companies, banks, credit card companies and airlines. Over these different roles the key partners of the UIDAI would come from a mix of three categories:

(a) **Government distribution agencies working on development schemes for the poor: the Ministry of Rural Development's NREGS; the Ministry of Labour and Employment's Rashtriya Swasthya Bima Yojana (RSBY), inaugurated in 2008, and the Department of Food and Public Distribution's Targeted Public Distribution System (TPDS), 1997, which attempts to distribute essential commodities, such as wheat, rice, kerosene and sugar to a large number of people through a network of fair price shops on a recurring basis.**

Links: http://nrega.nic.in/, http://www.rsby.in/, http://fcamin.nic.in/.

(b) Government-led marketing agencies, the two major agencies presently highlighted being the Life Insurance Corporation, and the Ministry of Petroleum and Natural Gas.

(c) Banks and other financial institutions, and service-oriented agencies such as mobile phone companies.

To all these agencies, the UIDAI would provide standards in basic KYR administration, to maintain uniformity in collecting certain demographic and biometric information. These standards would be finalized by the KYR and biometric committees to be constituted by the Authority. The Working Paper itself claimed that the Authority will retain a 'flexible model' that will allow registrars to retain significant flexibility in their processes, including issuing cards, pricing, expanding KYR verification, collecting demographic data on residents for their specific requirements, and in authentication.

At the December 2009 India Telecom conference organized by FICCI and India's Department of Telecom, Nilekani stated that the Authority will 'provide online authentication infrastructure, which will allow us to create a platform for innovation. So, you can create your own applications – mobile banking, mobile commerce, education, health, VAS applications, and so forth'. He added that the UIDAI was talking to mobile companies, insurance companies, banks, passport offices, Income tax departments, in short 'every player that has an identity requirement'. http://www.medianama.com/2009/12/223-indias-unique-id-project-will-open-its-api-needs-connectivity-nandan-nilekani/.

As the systems view shows, it is clear that the UIDAI's Registrars would have their own use for the data, and would where necessary supplement this data with more data, would expand KYR verification, and would even issue their own identity cards. **Since the Authority itself had limited plans for their data – since they, for example, only gathered limited sets of information, and since they would not be on their own issuing any identity card – the further question of how biometric data would connect to *other* information received directly from the applicant, or talk to *other* databases held by registrars of the UIDAI – such as the KYR-PLUS data that registrars are also including in their questionnaires – has remained an open question.**

Armed with this apparatus, the UIDAI stated their ambitions to roll out within 18 months of launch, and to be able to issue 60 million entries within two years of launch. The eventual target would be approximately 1.2 billion data entries of individuals across the length of our country. At the time of writing, amid mounting civil society criticism against the project, its future is by no means clear. Nevertheless, given the strenuous arguments made by the Authority itself, in its several position papers and studies, and of course the positions taken by those unambiguously opposed to it, the data already available and mounting by the day is far too rich to ignore, as we consider the latest in the grand tradition of the Indian State's most recent tilts at the Last Mile windmill.

See as a summary of the key issues, R. Ramakumar, High-cost, high-risk, in Frontline, Volume 26 - Issue 16: Aug. 01-14, 2009, http://www.hinduonnet.com/fline/fl2616/stories/20090814261604900.htm.

THE CONTROVERSY

Ever since its announcement in 2009, the UIDAI has been at the eye of a storm. Many of the strident arguments mounted against it reproduce well-established concerns that have been raised whenever countries have tried to issue national identity cards. **Notable recent debates were in Britain and Australia, which announced in 2006 a new 'access card' for health and welfare services only to abandon the plan in 2007.** Many critics viewed with considerable concern the combination of direct state distribution systems with market mechanisms of delivery as a volatile cocktail of partners. For many, Aadhaar's somewhat radical shift of definition of an identity-card whose purpose has historically been to prove citizenship, into a *delivery mechanism*, did not carry much weight. Of greater concern to them was the role that financial institutions were now expected to play in this process, both as

See the House of Commons Science and Technology Committee report, Identity Card Technologies: Scientific Advice, Risk and Evidence Sixth Report of Session 2005–06 (http://www.publications.parliament.uk/pa/cm200506/cmselect/cmsctech/1032/1032.pdf). Also see the well known London School of Economics identity Project (http://identityproject.lse.ac.uk/).

See the work of the University of New South Wales Cyberspace Law and Policy Research Centre's work on the Australia Card, and especially Graham Greenleaf's extended work on the subject (http://www.cyberlawcentre.org/privacy/id_card/index.htm).

potential registrars as well as enrolling agencies, since it appeared clear that the information the Authority received from them would be only a small subset of the information they would gather as representatives of the Authority.

There has been a consistency, and perhaps also a redundancy, to the arguments mounted, that have also been reproduced in India, in the most strident critic of the initiative, Usha Ramanathan, and in several concerns and anxieties voiced by eminent scholars including Jean Dreze, and in at least two signature campaigns, one issued in September 2010 and a second specifically asking the UIDAI to keep out of the NREGA, which we will discuss later in this chapter.

Signed by several eminent legal names, including Justice V.R. Krishna Iyer, K.G. Kannabiran, Upendra Baxi and Justice A.P. Shah, and reprinted in a letter to the Editor of the Economic & Political Weekly, vol xlv no 43 October 23, 2010.

In her criticism, Ramanathan offers, first, a principled opposition to the project on an uncompromising fundamental rights platform, that this is a violation of privacy and dignity. Seen together, the NATGRID alters the characterization of citizens and residents: all citizens are seen as *a priori* terrorists who are presumed guilty and need to establish their innocence and this is incompatible with our democracy. The ensuing politics of suspicion 'dramatically erodes the ideas of citizenship, privacy, and minimum-invasion- and-that-when-there-is-reason-why' as the state becomes

There is, as British human rights group Privacy International shows, a redundancy to debates on the identity card as key issues appear again and again: 'During the first stage of the debate, a popular view is usually expressed that identification, per se, is not an issue related to individual rights. At this level of debate, the perceived benefits of ID dominate discussion. People often cannot see past the idea of a card being used strictly for purposes of verification of identity (banks, public transport, travel, etc). Invariably, at this early stage of awareness, support for ID cards is high. The device is perceived as an instrument to streamline dealings with authority. The second stage of public debate is marked by a growing awareness of the hidden threats of an identity card: function creep, the potential for abuse by authorities, the problems arising from losing your card. Technical and organizational questions often arise at this level of discussion. As for the question of abuse by authorities (i.e., routine ID checks by police) a common response is still "I have nothing to hide, so I have nothing to fear". The final level of discussion involves more complex questions about rights and responsibilities. At this stage, the significance of the computer back-up and the numbering system come into the picture. Most public opposition to administration strategies such as numbering systems, identity cards or the census are structured around an organized campaign of negative imagery (Big Brother) and a more systematic process of public education'. Simon Davies, 'The Loose Cannon: An Overview

'pre-emptively readied to catch whoever of the 1.4 billion may commit the act of terror'. Ramanthan is entirely dismissive of the UID's claims that enrolment will not be mandatory; that it is pro-poor; that only basic information will be gathered. 'Scratch the surface of these assertions', she writes, 'and a different truth emerges'. The UID is nothing but 'an easy route for the market and the security agencies to identify and profile any person. That is how the UID fits into the larger scheme of monitoring and control and that, as the current discourse reveals, will be its central purpose'.

of Campaigns of Opposition to National Identity Card Proposals', http://www.privacy.org.au/About/Davies0402.html.

To this is a second criticism: the question of whether any such system will work at all, or whether we are into a sci-fi domain of technological infallibility. Even a DNA test is not foolproof, and so, beyond the problem of every citizen and resident as suspect, there is the possibility of error. Yet, the presumptions about the infallibility of science and technology – contrasted, often, with human imperfection – will tend to shift the onus to a person accused on the basis of whoever the DNA bank suggests is suspect. In addition to questions about whether the system can work, lies the related question of whether it will at all serve its declared purpose. Will adding to this data interminable information about every single person who legally enters the country ever address the question of those who enter the country 'uninvited and unnoticed'?, or will this entire exercise leave 'the bane of cross-border terror unaddressed'? To technological fallibility are added the problems of human fallibility including corruption, inefficiency and failing systems, all of which contribute to making the data unreliable.

Data Protection: Thirdly, the danger of misuse: the danger of data theft and the possibility of targeting from a range of social interests. Is all this data safe? **India has been long criticized for its lack of data protection legislation, something that Rahul Matthan, a leading authority on data protection law, says makes for a significant**

http://www.rahulmatthan.com/category/information-technology/.

weakness that would eventually stand in the way of serious offshore outsourcing to the country. Until 2008, the only provision that dealt with unauthorized access and damage to data was Section 43 of the Information Technology Act of 2000, which penalized any person who downloaded copies or extracted data from a computer system, introduced computer contaminants or viruses or damaged any data. In 2008, the government of India introduced a new section – Sections 43-A – which, Matthan argues, continues to have several insidious flaws that could affect the development of data protection jurisprudence in the country. While most international data protection statutes distinguish between levels of personal data – specifying different forms of protection for personal information and sensitive personal information, the new IT Act makes no such distinction. Section 43-A applies to all 'sensitive personal data or information' but does not specify how personal data, which is not deemed to be sensitive, is to be treated.

This becomes a distinct issue in the instance of the UID where, it is clear from the architecture outlined earlier in this chapter, that the data will always be shared between the UID itself and several key Registrars. Under most international data protection statutes, Matthan writes, the person in 'control' of the data is liable for the consequences of disclosure, loss or unauthorized access to such information. This ensures that liability is restricted to only those who *actually have the ability to control the manner in which the data is used*. However, under the new provisions of the IT Act, mere possession of information and its subsequent misuse would render any person who possesses this data liable to damages. In order to be a truly effective data protection statute, the IT Act 2008 must include provisions relating to the collection, circumstances of collection, control, utilization and proper disposal of data.

Matthan then however goes on to make a somewhat curious argument for India. For at least the past decade, India's governments have been collecting vast amounts of data about its residents, he says. Even though we are dealing with numbers far in excess of anything the Western world has had to handle, we face none of the

Rahul Matthan, 'Privacy Bill a must to strengthen Aadhaar', Livemint November 24, 2010. http://www.livemint.com/2010/11/24223047/Privacy-Bill-a-must-to-strengt.html.

personal privacy challenges that they suffer. For him the main reason – other than the standard chestnut that Indian society has no use for privacy as understood in the West – is the *inaccuracy* of the data being collected. For example, upto 20 per cent of government databases could be ghost entries — persons who are registered within the database, but who do not actually exist. While the obvious effect is inefficiency in the distribution of public services, an unintended consequence is a *lack of trust in the database itself*. And so when agencies look to verify identity, they ask for multiple documents, to be doubly and triply sure that the person they are dealing with is who he claims he is. This coping strategy, made necessary by an inefficient data collection process, is what Matthan says *has mainly protected us from data theft*. Today, he writes, it is hard to steal identity in India, as the thief would need to obtain not just one, but many pieces of identity information. Aadhaar, therefore, as the most ambitious personal identification project ever attempted anywhere in the world, could well create an infrastructure through which public services will be directed more accurately to their intended recipients – and in the process create a new problem. By promising accurate and unique identity, it will allow us to rely on just one piece of identity information and thus will strip away the artificial protection that we have relied on all these years, laying us open to identity theft.

Several related concerns around data privacy and theft have been echoed by other individuals as well as concerned NGO groups. The September 2010 signature campaign by Justice V.R. Krishna Iyer *et al* is primarily pivoted on the privacy issue. While it is rumoured, says the petition, that the Department of Personnel and Training is working on a draft of a privacy law, nothing has yet been put out for discussion, and grave concerns exist on the technology's potential for surveillance, profiling, tracking, and the possibilities of people in power collating information about individuals. The Authority, says the petition, needs to have a clearly stated strategy on data theft, especially since key corporates 'such as Ernst & Young and Accenture' may have access to such data. Confidentiality and data theft also concerns Jean Dreze, who accuses the Authority that its claim that the data will be safe with the Central Identities Data Repository is a half-truth, since the Authority

can authorise 'any entity' to maintain it, and as such the data can be accessed not only by intelligence agencies but also by any Ministry. But more important, the UID will help integrate vast amounts of personal data that are available to government agencies with few restrictions.

How Voluntary is the UID? Dreze belittles the Authority's claim that enrolment for Aadhaar is not compulsory, given that in its own self-justification, the UID project claims that 'all benefits and services linked to the UID will ensure demand for the number.' This, he says, 'is like selling bottled water in a village after poisoning the well'. That the UID is, in effect, going to be compulsory is clear from many other documents. For instance, the Planning Commission's proposal for the National Food Security Act argues for 'mandatory use of UID numbers which are expected to become operational by the end of 2010' (note the optimistic time-frame). No UID, no food. Similarly, UIDAI's concept note on the National Rural Employment Guarantee Act (NREGA) assumes that 'each citizen needs to provide his UID before claiming employment.' **Thus, Aadhaar will also be a condition for the right to work — so much for its voluntary nature.**

Jean Dreze, 'Unique Facility, Or Recipe For Trouble?', The Hindu, November 25, 2010 (http://www.thehindu.com/opinion/op-ed/article911055.ece)

Such an argument, I have already suggested earlier, could be guilty of erasing a thin but significant legal distinction between a law that makes it *mandatory* for citizens to register and one that does not make it mandatory, however *essential* it may be. The problem that we have is that government schemes that require you to have a UID number, leaving it up to you to decide whether you wanted the number or not, are very different from citizenship initiatives that do make it mandatory for you to have this number.

While most of the critics listed here do not themselves see the several concerns expressed as autonomous of each other, I believe they nevertheless fall into a small number of discrete sets, each attracting a quite different argument. Let me separate these out as follows:

1. **'I cannot support this':** Inviolate and non-negotiable aspects around rights: My rights are being violated, crucially my right to privacy. The threat of violation of non-negotiable fundamental rights – the 'there is no way I will agree to this because this endangers my liberty' argument – conventionally has the danger that Amartya Sen for example points to when he argues that an uncompromising priority of libertarian rights often comes into direct conflict with the substantive freedom of individuals. Usha Ramanathan, taking this problem on board, combines non-negotiable basics with a series of further inquiries. Firstly: transparency, specifically the manner in which the Authority is going about its business. The accusation that even if they actually did what they say they were doing, it *may* still have been a good thing, but Ramanathan simply does not believe their claims and has more than once straightforwardly accused them of dissembling on the actual purpose of the entire initiative and of having hidden agendas. Secondly, that even if we take them at face value, they are in no position to achieve these ambitions. This, of course, is a different position from the first for it opens up the question that the UID would in some respects be more acceptable if it was indeed capable of doing what it says it is doing. The other significant question is when the UID's legal requirements appear to conflict with laws that are already in place. A specific instance is Dreze's question of whether registration to the UID is voluntary or not. What kind of voluntariness is it when job cards at NREGS are denied to those not registered?

2. 'It will never work': the Contingent Argument. It may have been a good idea in theory, but it is either unimplementable, or unimplementable in a place like India, or that the government is simply going about it the wrong way. This is a different argument from a foundational 'I oppose this in principle' in my argument. Why will it not work? Firstly, the argument discredits the claims of the technology. Ramanathan contends that technology is meant to be infallible, but is in fact not. It is not infallible, because technology can itself make mistakes, and also because human error needs to be factored in and lastly because of the gap between intention and execution: *the technology often does not serve the purpose for which it is intended.* She writes,

> The essential tests required to establish that authentication through fingerprints can effectively be done over a population of 1.2 billion have not, even hypothetically, been done. The iris scan is being used for purposes of enrolment – that is, to put people on the database of UID numbers. But authentication is to be done by using only fingerprints. Many problems have been identified in relation to fingerprints – including callused hands, the ineffectiveness of fingerprints of persons in manual or hard labour. The problem has been acknowledged by the UIDAI; however, no solutions to this problem have been mooted so far. In relation to the Indian population, iris scans too have been found to be unreliable, especially in conditions of manual labour and malnourishment. **'No empirical study is available to estimate the accuracy achievable for fingerprint under Indian conditions' (Page 44) and '... it is strongly recommended that carefully designed experiments and proper statistical analysis under pilot should be carried out, to formally predict the accuracy of biometric systems for Indian rural and urban environments' (Page 52), Biometrics Standards Committee Report.**

http://uidai.gov.in/UID_PDF/Committees/Biometrics_Standards_Committee_report.pdf.

She goes on to quote an *Economic Times* report that states a pilot study which reports on the project of collecting 2,50,000 fingerprints, and its conclusion that 'There is good evidence to suggest that fingerprint data from rural India may be as good as elsewhere when proper operational procedures are followed and good quality devices are used ... (but) the quality drops precipitously if attention is not given to operational processes [...] **In the pilot study, 2-5 per cent of subjects were found to not have any biometric data. Missing biometrics is a license to commit fraud, the study notes'.** She points out to the fact that in the event of the technology going wrong and in the event that a wrong reading, for instance, implicates the wrong person – the onus of proving their innocence falls upon the person wrongly implicated, since technology can, as the State has said, never lie.

http://economictimes.indiatimes.com/tech/ites/Missing-biometrics-create-unique-problems-for-UID project/articleshow/6178480.cms.

This is a somewhat different challenge. Technologies, especially of the future, have never been challenged as this one has been, and clearly there is no answer to

this question. One has to assume that any new technological intervention being mounted on a major scale must work, or must be made to work. This is a new problem, since it appears that legal theory would need to make a very different attribution to what we may now call fallible technology than it has historically done. I strongly suspect that technological certitude – or what I would call technology's investment into symbolic realism that the representation is always true to the reality – may well be changing in this case, with a theory of technology that appears to directly conflict with its legal representation.

3. 'We don't need it': Why try to mend it when it ain't broken, or, the same ends can be achieved with existing systems and for a fraction of the cost: Jean Dreze's reference to the Employment Guarantee Scheme, and the dangers that UID could pose to that initiative is the most direct case in point for this position. A signature campaign that includes Aruna Roy, Nikhil De and Dreze himself among others asks that the plan to link MGNREGA to Aadhaar be revoked immediately since it could cause havoc to MGNREGA's fragile structure. They respond to the Ministry of Rural Development's tender of October 11, 2010 worth Rs. 2162 crores to engage 'service providers' for MGNREGA under a public-private partnership model, which includes 'UIDAI compliant enrolment of job card holders under MGNREGA scheme', 'recording... data in the field such as biometric attendance at worksite with GPS coordinates... and updation of a centralized MIS'. Given that job cards issued in 2006 are shortly to expire in 2011, any linking of new job cards to UID enrolment could create a jam that would disrupt the programme, as many people are likely to be denied their entitlement to 100 days of work. They are also concerned that, despite outsourcing the task to service providers, almost certainly the entire administrative machinery would get diverted from their primary task and into capturing people's biometrics. They further claim that the proposal of 'biometric attendance at the worksite with GPS coordinates' is completely impractical since many MGNREGA worksites are in remote areas with poor or no connectivity.

http://www.thehindu.com/todays-paper/tp-opinion/article924451.ece.

The petition against the MGNREGS goes further in quoting a contrast case to the UID project's implementation strategy: the far more successful strategy used in Tamil Nadu:

> We do welcome the use of technology provided that it enhances transparency, empowers labourers and is cost effective. Such technology has been used with success in Tamil Nadu. For instance, it combines SMS reports on daily attendance with random spot checks to curb the problem of fake muster roll entries. Localized use of biometrics, independent of UID, to speed up payments can be considered. Biometrics and UID are not the same. In Rajasthan, simpler measures have been put in place, such as 'transparency walls' where all job cardholders in the Gram Panchayat are listed along with days of work, allowing people to monitor implementation.

For a more detailed statement on the use of technology in the PDS system in Tamil Nadu, see S. Vydhianathan and R.K. Radhakrishnan, 'Behind the success story of universal PDS in Tamil Nadu' http://www.hindu.com/2010/08/11/stories/2010081154251100.htm.

These are formidable objections, made by formidable voices. Clearly, problems are arising with the UID project that have not been in evidence in the earlier leaps recorded in earlier chapters of the book; and the government faces a credibility gap both on the legal front as well as in the credibility of the technology being deployed that it has not faced previously.

This is, for me, an important juncture to revisit the key contention that has underpinned this entire book: the uncanny ability of the Indian State to stake its very survival with a particular technology – and the benevolent aura of that technology – and create an appropriate legal mechanism by which to make it work. Today, even as India moves into Castells' informational era, I need in the rest of this essay to disentangle from the morass of argument what the technology thought it was doing here, and what its self-defined purpose would now do to the nation. We can then work out the somewhat special nature of the legal problems it seems to have faced in making its claims.

II
A LEAP TOO FAR?

So what was different this time, as the Indian State readies itself in perhaps its bravest effort yet to attempt the Leap of Rhodes? Is this an entirely new strategy from whatever we have seen in the past? Is it different from all past efforts of independent India to tag state apparatuses on to the technological 'next big thing'? Or is this another all-too-familiar effort of paranoid State structures targeting minorities, illegal migrants and other 'suspicious people', only made worse by the new role that financial institutions would now play in this nefarious role of state surveillance?

Classic State Totalitarianism versus a New Coalition of Interests: I want to begin this with the following contention: I suspect that the UID initiative does indeed constitute a foundational break from earlier systems of governance. I propose governance now to mean something far more inclusive than merely the instruments of state governmentality with which we are all familiar through the twentieth century, and of which the socialist states of East Europe remain the best examples still. While it is readily conceded that the UID is technologically an intervention of the same generation as Chidambaram's 21 databases, his Crime and Criminals Tracking Systems, his National Counter Terrorism Centre and his DNA Bank, and all the other stuff that is probably closer to science fiction than anything achievable in any immediate future, I want to make a slightly more complicated point. I suggest that whereas Chidambaram's phantasies stem from classic state totalitarianism, and to that extent constitute a backward vision for the technology, the UID I propose (with Castells) makes for a *new coalition of governing interests that technologically combine the relatively autonomous domains of law, executive and market and pose new questions to state operations* than would be familiar to orthodox human rights.

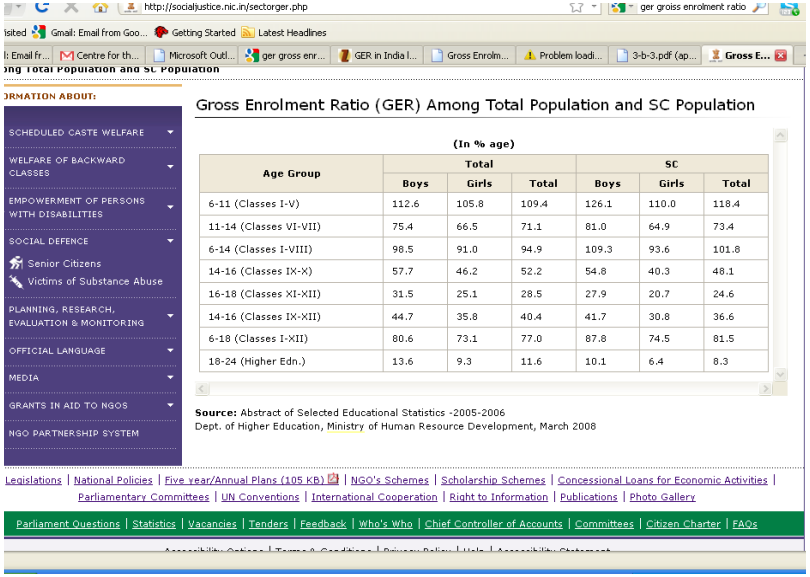
Part of the problem here in proposing that the UID debate in its very nature is historically unprecedented – especially in its challenging of the capacity of the

technology to deliver – is Castells' key point that an informational economy does not *oppose* the logic of the industrial economy but rather *subsumes* that logic through *technological deepening*. The technology therefore, presents itself as, at one level, nothing more than an upgradation of existing practices, even if it is actually doing more, and it therefore, becomes hard to define any specific point of break between older welfarist and newer systems of informational governance. To that extent, I suggest that a major point of departure for us needs to be around *governance*: to propose that, despite the similarity, the older classic definitions of the term do not always capture the change we are trying to track, and that as a result there is a *lacuna between the technological change being posited and the legal mechanisms being sought*, since the law may not have yet apprehended the change adequately in the first instance: and may therefore, be seeking to regulate new technology with older conceptions of it. Such a contradiction arises not only in the difficulties posed in casting the UIDAI into a familiar comfort zone of being just another step in the direction of a totalitarian-technologized state apparatus, or to frame the problem within a relatively orthodox language of human rights, but arises also in the State's own implementation process. We have already seen this in the debate around *citizenship*, where the UID's position on *identity* appears, at first glance, to be in direct conflict with the National Population Register although the two are officially supposed to work in tandem. I further propose that similar conflicts can now arise over the purpose of *technology* (the PDS experiment in Tamil Nadu or the 'transparent walls' experiment in Rajasthan), the role of *privacy* on which the UID could be taking an unsustainable stand, and on the question of universal access versus targeting, which involve several new social rights.

In the rest of this essay, continuing my interest through this book with seemingly irreconcilable conflicts of purpose as defining the major career of technological governance in India, I would look at such conflicts around technology, citizenship and privacy. I shall outline several key shifts in the very nature of the debate on the 'Last Mile' question that the UID has brought about, and then will try and explore within these conflicts key and subtle shifts in statist perceptions, precisely on the

grounds of technology, citizenship and privacy.

Shadow Selves: A Theory on the UID



Gross Enrolment Ratio (GER) Among Total Population and SC Population

(In % age)

Age Group	Total			SC		
	Boys	Girls	Total	Boys	Girls	Total
6-11 (Classes I-V)	112.6	105.8	109.4	126.1	110.0	118.4
11-14 (Classes VI-VII)	75.4	66.5	71.1	81.0	64.9	73.4
6-14 (Classes I-VIII)	98.5	91.0	94.9	109.3	93.6	101.8
14-16 (Classes IX-X)	57.7	46.2	52.2	54.8	40.3	48.1
16-18 (Classes XI-XII)	31.5	25.1	28.5	27.9	20.7	24.6
14-16 (Classes IX-XII)	44.7	35.8	40.4	41.7	30.8	36.6
6-18 (Classes I-XII)	80.6	73.1	77.0	87.8	74.5	81.5
18-24 (Higher Edn.)	13.6	9.3	11.6	10.1	6.4	8.3

Source: Abstract of Selected Educational Statistics -2005-2006
Dept. of Higher Education, Ministry of Human Resource Development, March 2008

Constituting the Individual: As we see below in a sampleconsent for enrolment slip, those enrolled had to sign their consent to the UID 'sharing information with agencies engaged in the delivery of welfare services including financial services', and also starting their consent to the 'linking of a bank account number with the Aadhaar number'.

Let us agree on one key argument: the specificity of the UID is that it constitutes, of the dozens of databases being produced (the 21 of NATGRID and the several others both by state and private players) is that it is the only one that *produces the individual*.

As Raj Mashruwala's powerpoint graphically illustrates (above), the UID database starts with the person: let us, to take the example of the sample enrolment slip above, name him Vinay More, son of Venkoba Rao More. I want to propose that,

socially speaking, the two components of the UID's database – one, which includes More's personal details listed (these appear not any longer to be identical to the ones listed in the original working paper, and now include mobile phone and email address), and a second, which includes More's *biometric* data.

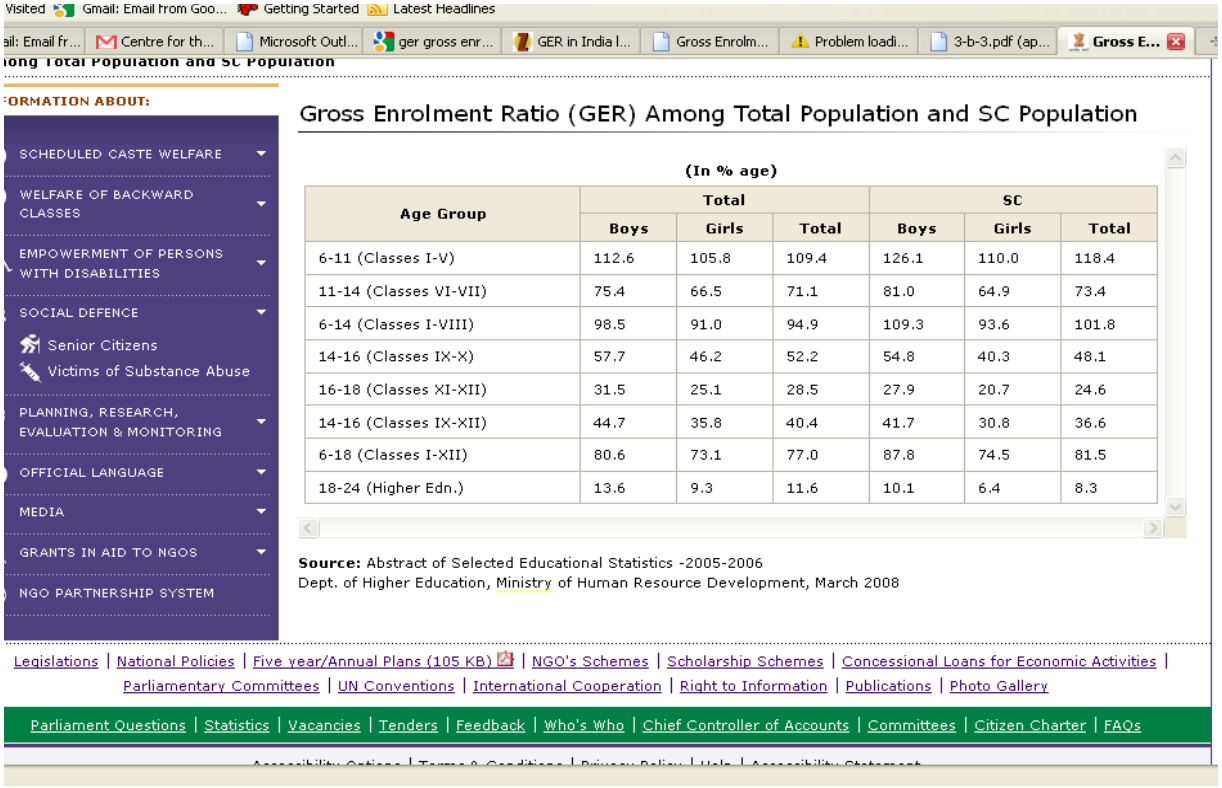
The first is clearly fallible: More's name could be misspelled, his address wrong, and there could be a combination of data error and human error. Take the evident error in this very Enrolment Slip: Vinay More's address is clearly mistakenly listed as 'alahalli' instead of the correct Avalahalli at JP Nagar. **The second biometric component, on the other hand, by its very nature, has to be totally accurate (or at least between the 95-99 per cent accuracy expected by the *Biometrics Design Standards for UID Applications* Committee Report of December 2009).**

http://uidai.gov.in/UID_PDF/Committees/Biometrics_Standards_Committee_report.pdf.

Let us move on to a standard Aadhaar enrolment form, as provided by their website. We need to note that this is only a sample enrolment form, and that registrars do significantly add to it, as we will see in the Andhra Pradesh Food & Civil Supplies enrolment form below. Let me use the Aadhaar form above to divide the two sets of data I have listed as **Subjective Data**, or who I believe I am, or how I describe myself at present: this will be my name and address, all that is appearing in the above form under Parts A (Primary details) and B (Relation details). Such Subjective Data, which is often referred to in Aadhaar circles as demographic data, in turn connects to my **Biometric Data**, which constitutes an accurate physical description of myself, one that will now and forever uniquely identify the bodily me. The first appears to be fallible and somewhat voluntary, the second infallible (as far as possible) and compulsory.

Let us now move on. There is a third category of data to which the form above gestures, in the 'Additional Information' category C, which asks for your phone number and email, and category D, which asks to link you to your bank account. Let us now call this **Objective Data**, i.e., data produced about me, but not by myself: including data about my phone records and bank account details, produced by the

phone company and bank respectively.



ORMATION ABOUT:

- SCHEDULED CASTE WELFARE
- WELFARE OF BACKWARD CLASSES
- EMPOWERMENT OF PERSONS WITH DISABILITIES
- SOCIAL DEFENCE
  - Senior Citizens
  - Victims of Substance Abuse
- PLANNING, RESEARCH, EVALUATION & MONITORING
- OFFICIAL LANGUAGE
- MEDIA
- GRANTS IN AID TO NGOS
- NGO PARTNERSHIP SYSTEM

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Legislations | National Policies | Five year/Annual Plans (105 KB) | NGO's Schemes | Scholarship Schemes | Concessional Loans for Economic Activities | Parliamentary Committees | UN Conventions | International Cooperation | Right to Information | Publications | Photo Gallery

Parliament Questions | Statistics | Vacancies | Tenders | Feedback | Who's Who | Chief Controller of Accounts | Committees | Citizen Charter | FAQs

In relation to biometric data, where the UID will be a stand-alone database, there has been some considerable discussion on the possibility of error. **The *UID Enrolment Proof of Concept Report* lists the following kinds of errors: False Positive Identification Rate** where a person's biometrics is seen as a duplicate (i.e., the biometric de-duplication software identifies his biometrics as matching with that of a different person), even though it is not a duplicate in reality; **False Negative Identification Rate** where a person enrols a second time and the de-duplication software is unable to identify their biometrics as a duplicate set; **False Accept Rate** where a person's biometrics is matched against a different person and the biometrics is seen to match, i.e., the person is wrongly seen to be a different person; **False Reject Rate** where a person's biometrics does not match against an earlier sample of his or her biometrics and so he or she is not recognized as the same person. What, however,

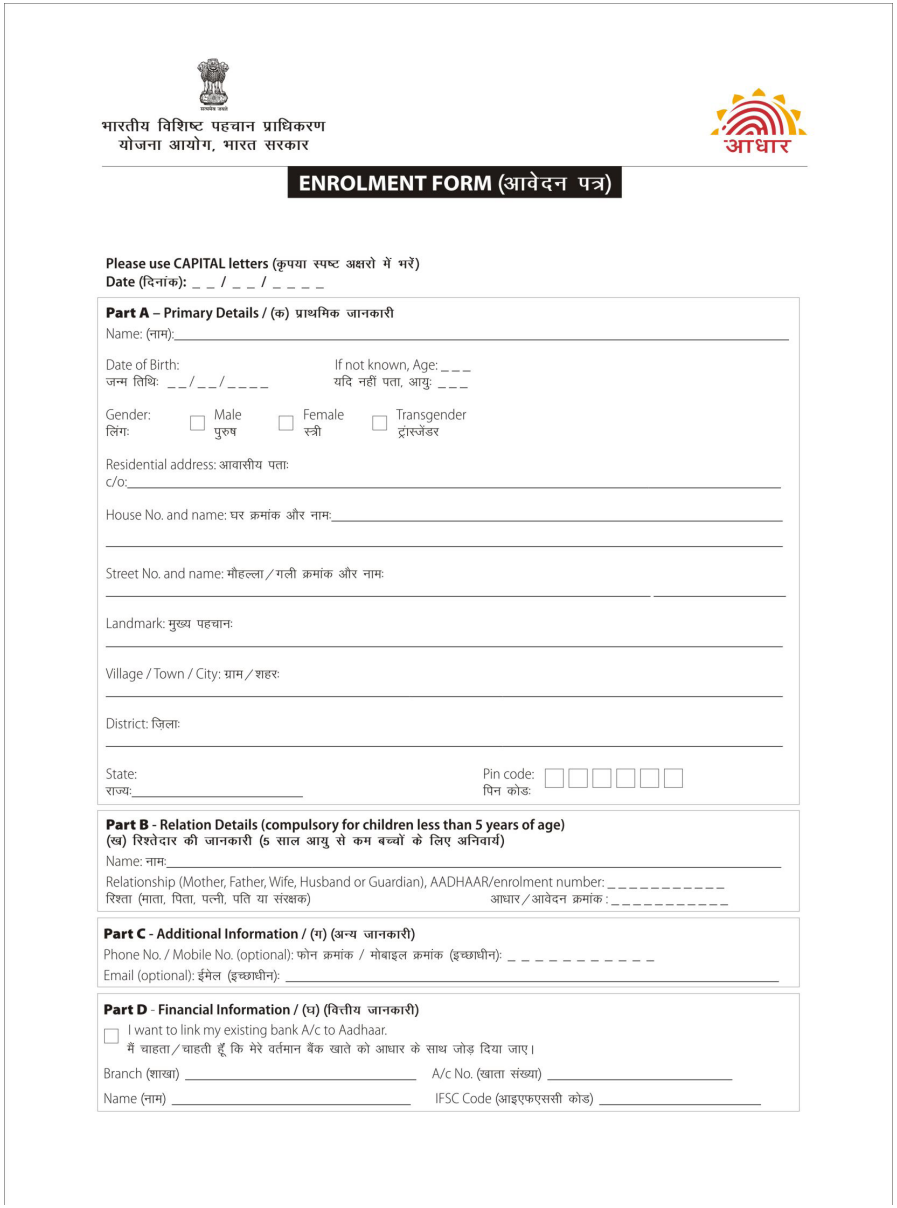
http://uidai.gov.in/images/FrontPageUpdates/uid_enrolment_poc_report.pdf.

of errors in subjective data?

It seems to me that as long as Vinay More's name appears only on the UID database, such error cannot be considered an error. Subjective data will encounter no errors as long as it is in a single database, since nothing prevents two people from having similar subjective data (the same name, for instance), and there is no de-duplication process at this level. Error will only arise in subjective data when *two databases* collide over where Vinay More lives. In other words, the possibility of error arises *only when subjective data starts becoming objective data*. On the other hand, I now propose, that despite the infinite possibility of error, subjective data can only become useful data – i.e., data upon which the state can act – when it is linked to objective data of some sort.

This happens only when Part D of the above form is filled. As soon as my telephone number is listed, it is clear that my name will have appeared in at least two places, and this opens up the possibility that my name could be listed in two different ways, or that I have two different names. Let me propose further that this difference will not be solved in a hurry, that since phone companies are unlikely to scrap their data simply because the UID project has another set of data, it becomes in the end the responsibility of the person listed to ensure – if at all he wants to – that his name has been spelled in the same way in both places.

There are three steps in the argument so far, then: first, that while the de-duplication of *my biometric data* is the job of the UID project itself, the de-duplication of *my personal data* is my business. Secondly, the UID project is committed to converting me from a producer of purely subjective personal data into at least launching me into a career as a producer of objective personal data: which begins, as Nilekani has often argued, with my possession of a cell phone and a bank account.



भारतीय विशिष्ट पहचान प्राधिकरण
योजना आयोग, भारत सरकार

आधार

ENROLMENT FORM (आवेदन पत्र)

Please use CAPITAL letters (कृपया स्पष्ट अक्षरो में भरें)
Date (दिनांक): _ _ / _ _ / _ _ _ _

Part A – Primary Details / (क) प्राथमिक जानकारी
Name: (नाम):_____

Date of Birth:
जन्म तिथि: __/__/____

If not known, Age: ___
यदि नहीं पता, आयु: ___

Gender:
लिंग:
☐ Male पुरुष ☐ Female स्त्री ☐ Transgender ट्रांसजेंडर

Residential address: आवासीय पता:
c/o:_____

House No. and name: घर क्रमांक और नाम:_____

Street No. and name: मौहल्ला / गली क्रमांक और नाम:

Landmark: मुख्य पहचान:

Village / Town / City: ग्राम / शहर:

District: ज़िला:

State:
राज्य:_____

Pin code:
पिन कोड: ☐☐☐☐☐☐

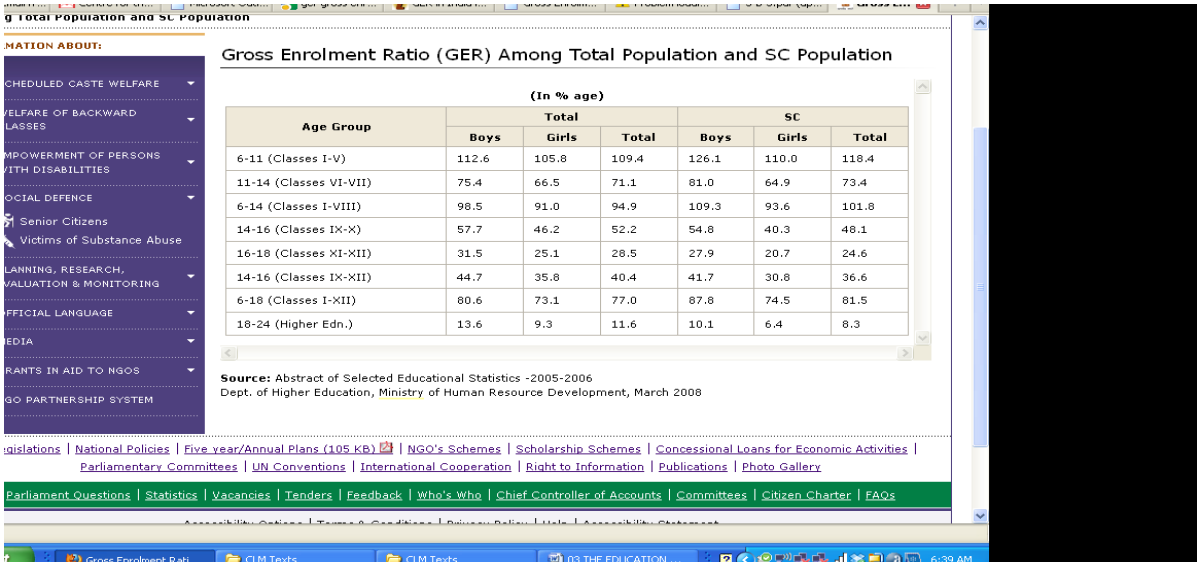
Part B - Relation Details (compulsory for children less than 5 years of age)
(ख) रिश्तेदार की जानकारी (5 साल आयु से कम बच्चों के लिए अनिवार्य)
Name: नाम:_____
Relationship (Mother, Father, Wife, Husband or Guardian), AADHAAR/enrolment number: _ _ _ _ _ _ _ _ _ _ _ _
रिश्ता (माता, पिता, पत्नी, पति या संरक्षक) आधार / आवेदन क्रमांक : _ _ _ _ _ _ _ _ _ _ _ _

Part C - Additional Information / (ग) (अन्य जानकारी)
Phone No. / Mobile No. (optional): फोन क्रमांक / मोबाइल क्रमांक (इच्छाधीन): _ _ _ _ _ _ _ _ _ _ _ _
Email (optional): ईमेल (इच्छाधीन): _____

Part D - Financial Information / (घ) (वित्तीय जानकारी)
☐ I want to link my existing bank A/c to Aadhaar.
मैं चाहता / चाहती हूँ कि मेरे वर्तमान बैंक खाते को आधार के साथ जोड़ दिया जाए।
Branch (शाखा) _____ A/c No. (खाता संख्या) _____
Name (नाम) _____ IFSC Code (आइएफएससी कोड) _____

In the instance of the Food & Civil Supplies Department of the Andhra Pradesh state, often touted as the model showpiece of the UID project, the enrolment form is considerably more elaborate than the UID's own sample enrolment structure, as are the number of mandatory fields. Here we have, as a part of what I am calling subjective data, my marital status, my disability status and my caste. Objective data

here includes my LPG connection number. It also includes my occupation, which here includes the categories of both beggar and rentier. Interestingly, Andhra Pradesh does not make bank information mandatory, mainly since in that state, the PDS system does not yet work with direct cash transfers.



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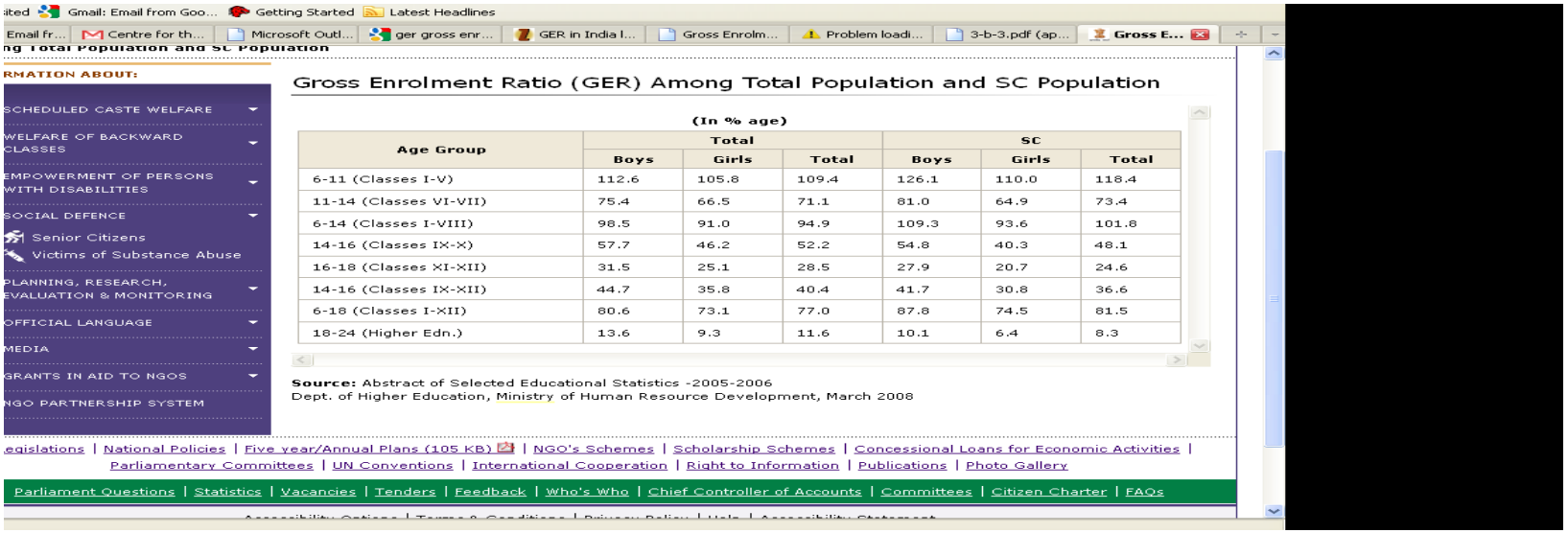
6-14 (Classes I-VIII)	98.5	91.0	94.9	109.3	93.6	101.8
14-16 (Classes IX-X)	57.7	46.2	52.2	54.8	40.3	48.1
16-18 (Classes XI-XII)	31.5	25.1	28.5	27.9	20.7	24.6
14-16 (Classes IX-XII)	44.7	35.8	40.4	41.7	30.8	36.6
6-18 (Classes I-XII)	80.6	73.1	77.0	87.8	74.5	81.5
18-24 (Higher Edn.)	13.6	9.3	11.6	10.1	6.4	8.3

Source: Abstract of Selected Educational Statistics -2005-2006
Dept. of Higher Education, Ministry of Human Resource Development, March 2008



Gross Enrolment Ratio (GER) Among Total Population and SC Population

(In % age)

Age Group	Total			SC		
	Boys	Girls	Total	Boys	Girls	Total
6-11 (Classes I-V)	112.6	105.8	109.4	126.1	110.0	118.4
11-14 (Classes VI-VII)	75.4	66.5	71.1	81.0	64.9	73.4
6-14 (Classes I-VIII)	98.5	91.0	94.9	109.3	93.6	101.8
14-16 (Classes IX-X)	57.7	46.2	52.2	54.8	40.3	48.1
16-18 (Classes XI-XII)	31.5	25.1	28.5	27.9	20.7	24.6
14-16 (Classes IX-XII)	44.7	35.8	40.4	41.7	30.8	36.6
6-18 (Classes I-XII)	80.6	73.1	77.0	87.8	74.5	81.5
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Source: Abstract of Selected Educational Statistics -2005-2006
Dept. of Higher Education, Ministry of Human Resource Development, March 2008

Constituting Self-Interest: Clearly the problem of getting the bank account, the phone company and the UID to have my name spelled in the same way will take time. Equally clearly the only person who will get these to speak has to be me. This leads to my main question: what would be my interest in getting these databases to speak to each other seamlessly? Would my interest lie in getting these databases to coalesce, despite the fact that all information about me would be laid bare, or would my self-interest be to keep these disparate data bits about me separate?

Let me revert to an important bit of fine print in the enrolment slip that has been already cited: the one where I have to sign that 'I have/have no objection to the UIDAI sharing information provided by me to the UIDAI with agencies engaged in delivery of welfare services *including financial services*'. Let me suggest that, arising from this and other related data, the UID Authority relies on the concept of self-interest – that, indeed, it stands or falls by the contention that, with say a voter ID and a ration card, but *against* a NATGRID or, perhaps NPR registration, my self-interest lies in being registered with the Authority and, further, that this self-interest would – it is to be naturally expected – be enhanced by my saying 'Yes' to my information being shared with welfare and financial services.

Effectively, when I say 'yes' to having my information shared, I am agreeing to having my subjective data tagged to my objective data. However, we have agreed that subjective data is fallible, and more important, can be elusive: for it depends on my voluntary self-description of myself which, in turn, depends on who I am describing myself to. There remains a key, and thin, dividing line between my voluntary submission of data about me on, say, Facebook or when I fill a questionnaire in order to receive a free gift at a department store, and my being coerced to surrender the same information by a state operation. While this has been discussed endlessly on numerous occasions – and conventionally attracts lines like, 'Google has the information about me anyway, so what is wrong when a bank or an NPR asks for it' – rarely, I suggest, has the fact of *self-interest* been adequately factored into the question of when, and why, it becomes necessary for me to surrender data about

myself in my self-interest.

I want to suggest that the link tying my subjective data to objective data about me opens up a relatively recent area of human rights: one that locates the link to databases – and the beginning of what is now known as my 'data shadow', or what *Wired* magazine described as the 'data we leave everywhere we go':

> It's not just our bank accounts and stock portfolios, or our itemized bills, listing every credit card purchase and telephone call we make. It's automatic road-toll collection systems, supermarket affinity cards, ATMs and so on. It's also our lives, our love letters and friendly chats and our personal e-mails and SMS messages. Our business plans, strategies and offhand conversations. Our political leanings and positions. And this is just the data we interact with. **We all have shadow selves living in the data banks of hundreds of corporations' information brokers – information about us that is both surprisingly personal and uncannily complete – *except for the errors that you can neither see, nor correct*.**

Bruce Schneider, 'Our Data' Ourselves', Wired, May 15, 2008. http://www.wired.com/politics/security/commentary/securitymatters/2008/05/securitymatters_0515.

There is of course the practical aspect to this, which itself has been controversial – how does Vinay More modify his incorrect address on the UID database? My point is somewhat larger: that, assuming that the clutch of material that coalesces to become my data shadow, how do I modify and manage that *shadow*? **Since the answer for many people will not be to not register with the UID, but rather to explore the conditionalities under which the clutch of data resources about me produce the objective data that 'I' can authorize, I want to explore the concept that Roger Clarke has usefully called 'claim rights' as against 'liberty rights': or situations where I can both own up to, as well as disavow, or refuse to provide, data about me based entirely on my perception of my self-interest. My link, then, is to a data shadow – and Clarke expands such a shadow to a series of situations that create what he calls 'human-artefact hybridisation'.** This will include, for example, artificial links that supplement missing faculties within human bodies and machine faculties that add on to human ability, quality of life prostheses, access to matter-of-life-and-death prostheses,

http://www.rogerclarke.com/SOS/CyRts-1003.html.

orthoses for location, along with devices for tracking, such as, say, RFID chips, or any situation where I am tagged by a machine or have any link to any kind of digital version of myself. Some of the rights that emerge, Clarke says, relate to whether I want an intervention performed that in any way involves me, while others involve the rights of people who have been the *subject* of an intervention. I am especially interested in his division between claim rights and liberty rights when it comes to the area of tracking and surveillance. I have modified his statement to gesture towards the point I am trying to make:

a **claim** right on the state, to receive quality-of-life support through digitally tracking me,
a **liberty** right to decline to be a part of such linkages, when they become totalitarian, such as RFID-anklets or chip-implants,
a **claim** right on service-providers, preventing the denial of access to services,
a **claim** right on employers, for data links of a protective nature,
a **liberty** right to disconnect,
a **claim** right on operators of facilities, to be able to use external, exo- and endo-prostheses,
a **claim** right on operators of security controls, to not be unduly discriminated against or subjected to demeaning procedures,
a **claim** right against others, to be able to utilise their enhanced functional capability, perhaps only within a particular context, but perhaps generally, and at least in some circumstances free from retributive justice,
a **liberty** right, to be able to observe, transmit and record behaviour of others – surveillance,
a **liberty** right to develop, experiment with and install prostheses and orthoses, and
a **liberty** right to be free from imposed legal liabilities except where negligence is demonstrated.

III

CONSTITUTING CITIZENSHIP: UNIVERSAL RIGHTS VERSUS TARGETED DELIVERY

> To see the objects of targeting as *patients* rather than as *agents* can undermine the exercise of poverty removal in many different ways. The people affected by such policies can be very active agents indeed, rather than languid recipients waiting for their handouts. **Not to focus on the fact that they think, choose, act, and respond is to miss something terribly crucial to the entire exercise – Amartya Sen, 'The Political Economy of Targeting'**

http://adatbank.transindex.ro/html/cim_pdf384.pdfn.

My argument thus far is this: if we indeed take the concept of a 'unique identity' seriously, it would require us to attribute to it a uniqueness, literally: to therefore, assume that if indeed all human beings are unique, they also must be uniquely capable of both defining and acting upon their self-interest. How, I want to now ask, can such an idea of *unique self-interest* now be *technologically reproduced*? If it indeed can, then how would the concept of a person's capability of acting upon his or her *entitlements* – as against the person being merely a being passive recipient of State benefit – be actually worked out in enumerative terms?

> One very specific area where the entitlements question, as an issue of State delivery, came to play itself out was around the concept of targeting, that several state governments introduced in their public distribution system (PDS) systems since June 1997. Targeting occurred through the creation of below poverty line (BPL) and above poverty line (APL) categories, after several complaints about the inefficiency of a universal PDS and the problems it was having with reaching out to the truly needy. This concept of targeting has found few takers among the new proponents of social rights.

Himanshu and Abhijit Sen, 'Who not a Universal Food Security Legislation?', Economic & Political Weekly, v 46 No. 12 March 19 - March 25, 2011, pg. 38-47.

Among the more trenchant attacks on targeting is by Himanshu and Abhijit Sen, who argue that not only does targeting *increase* inefficiency and leakage, but, crucially, that it violates *constitutional rights*.

A universal PDS is the only option consistent fully with a rights-based approach, and feasible alternatives that are more universal and less targeted and are more likely to be effective in ensuring food security for the poor. Since a legal right must apply to all citizens with any exclusion defined precisely, targeting the 'poor' or 'priority' will involve definition of these terms and possible litigation. (While) targeting was considered when the UPA government was enacting earlier landmark legislations, finally both the National Rural Employment Guarantee Act and the Right to Education Act, which govern schemes providing basic rights to citizens, are universal.

In contrast to such universality requirements, the National Advisory Council's final proposal for the National Food Security Act (NFSA) has been to provide subsidised food grains to 75 per cent of the total population of the country, covering 90 per cent of the rural and 50 per cent of the urban population. These are to now be further divided into two categories: a 'priority' group' comprising 46 per cent of rural and 28 per cent of the urban population and a 'general' group which would comprise 44 per cent of the rural and 22 per cent of the urban population. If this is not complex enough, the roll-out is expected to be even more complex: benefits will vary with household position on a below poverty line (BPL) list and a quarter will be ineligible for food security. **This could be an administrative nightmare, say Himanshu and Sen, with no easy way to find credible criteria that can exclude half the urban population and also divide the included rural population into two halves for very different entitlements.**

The other recent area, which also centrally takes on the question of entitlement, and targeted benefit, is

The PDS was universal in 1993-94 but targeted in 2004-05, and NSS data for these years show what happened to leakages. In 1993-94, leakage in rice was 19% which increased to 40% in 2004-05; in wheat, it went up from 41% to 73% and for rice and wheat together, it increased from 28% in 1993-94 to 54% in 2004-05. Per capita per month consumption of PDS rice and wheat remained unchanged (0.99 kg in 1993-94 and 1.01 kg in 2004-05) although PDS offtake doubled and subsidy increased even more. If feasibility is judged on the ability to stabilise food prices and in terms of physical and financial leakage, as the RC does, the targeted PDS scores very poorly against the universal PDS by past official assessments.

Despite criticisms such as these which have been voiced since the early 2000s, the government has sought to expand targeting to include,

of course the caste census. India has seen this debate rage around whether we should or should not include caste data in the 2011 Indian Census that is presently underway. Among the most extreme attacks on the very idea of a caste census has been precisely the one around targeting: in the claim that such data would fix identities, and whether such fixity – in the name of targeted benefit – can benefit anyone. The most trenchant advocate of this argument, Pratap Bhanu Mehta, claims that such a census would 'condemn us to the tyranny of compulsory identities' so that we could from now on never escape caste. 'Our identities are not something we can choose; they are given as non-negotiable facts which we can never escape. **The state has legitimised the principle that we will always be our caste... Is there not a deeper indignity being inflicted on those to whom emancipation is being promised? You will be your caste, no matter what'.**

in 2005, dual pricing schemes for kerosene, power and even for petrol, with Indian Oil Corporation proposing cheaper petrol and dedicated pumps for two-wheelers. 'Targeting in Theory', Business Standard, December 08, 2005, http://www.business-standard.com/india/news/targeting-in-theory/231031/.

Pratap Bhanu Mehta, 'My Caste and I', Indian Express, May 12, 2010, http://antireservation2007.sulekha.com/blog/post/2010/05/my-caste-and-i-pratap-bhanu-mehta.htm.

Upendra Baxi makes a counter-argument: he proposes, instead, that the transition from OBC enumeration to counting all castes could potentially inaugurate a shift away from 'targeted' to 'non-targeted' developmental approaches, so that we may in fact be moving away from fixed identities, not towards them. In the process, and while proposing that the logics of 'development' require an equal regard for the OBC as well as non-OBC impoverished, Baxi also links this debate up with the one on BPL targeting, and to Jean Dreze's attack on a targeted PDS. For Dreze, creating awareness of rights alongside creating accountability mechanisms was crucial, since not only did targeting undermine the notion that PDS entitlements are a matter of right, since no one can have a 'right' to a BPL card, but it also weakened the ability of BPL households to enforce their rights.

Upendra Baxi, 'Caste Census and Constitutional Justice', Economic & Political Weekly,,vol xlv no 37, September 11, 2010, pg 25-28.

How does such a definition of implementable self-interest square with an anti-targeting stance? **Are people so targeted willing to be so 'named', or is there (as Amartya Sen has suggested) a stigma associated with such naming? Clearly on the caste question there sometimes is a stigma, as V.K. Natraj points out, when he shows that students applying for engineering or medical college education often do not mention the name of their caste fearing that they may attract the 'creamy layer' barrier.**

V.K. Natraj, 'Why the Census Should Not Count Caste', Economic & Political Weekly, vol xlv no 31, July 31, 2010, pg 79-80.

Such a refusal to be named, Baxi proposes, could very well *also* lead us to an opposite and more enabling conclusion. While caste is like language and religion, an identity that one inherits, it is both possible for one to value this inheritance and to want to adhere to one's caste – in which case this would represent *agency* rather than an imposition of any compulsory identity – or of course to change, or repudiate, this identity by consciously defying caste norms and taboos. One may even acquire a different caste identity by choice, as has happened among religions through collective acts of conversion. If in this context, asks Baxi, as subjects rather than objects of governance, the worst-off peoples may justifiably feel so offended to answer questions about their caste, to the point of foregoing any census-based privileges, why should such self-chosen under-inclusion be a problem for honest governance practices? *Do these acts of agency not point to any alternate ways of measuring indices of deprivation, consistent with respect and dignity of self-chosen identities of the respondents?'*

Such new indices, says Baxi tellingly, would need to find ways to move away from the *concept of identity as a substance and into practices of 'identification' that would see identities as flows or as processes.*

What would it take for a technology of enumeration to build this kind of flexibility into it, as technology would have to do if it remained true to the concept of self-interest or, as Baxi has it, see identity as a *flow* or a *process* rather than as something fixed. It is of course a commonsense that databases themselves work with fixed

structures, so we would need a great deal of technological ingenuity to arrive at a database that can handle ambiguities such as these. And then there is of course the rights question, on whether both tagging and targeting violate human rights.

Several concerns around the UID's possible link with caste enumeration are expressed in a letter to The Hindu on August 13, 2010. The authors, well known social scientists, are entirely in favour of a Caste Census, arguing that such a Census can *better enable the distribution of national resources and opportunities*, giving policymakers essential information on, say, sex-ratios, literacy, life expectancy, occupation, household assets, and so on, crucial evidence without which 'all the problems that are blocking the implementation of social justice policies will remain unsolved'. 'Enumerating castes has compelling benefits for our society' since it 'will invigorate our social justice policies; provide the credible evidence demanded by our judiciary; allow the revision of beneficiary group listings; and help profile India's social diversity'.

Letter published in The Hindu on August 13, 2010, by Dr. M. Vijayanunni, former Registrar General and Census Commissioner of India, Justice M.N. Rao, Chairperson, National Commission for the Backward Classes, Prof. Sukhadeo Thorat, Chairperson, University Grants Commission, Prof. Satish Deshpande, Department of Sociology, Delhi School of Economics, Prof. Yogendra Yadav, Political Scientist, Centre for the Study of Developing Societies, Prof. S. Japhet, Director, Centre for the Study of Social Exclusion, National Law School of India, Bengaluru, Dr. Chandan Gowda, Associate Professor, Centre for the Study of Social Exclusion, National Law School of India, Bengaluru, Prof. Valerian Rodrigues, Political Scientist, Jawaharlal Nehru University, Prof. Ravi Varma Kumar, Senior Advocate and former Chairperson, Karnataka Backward Classes Commission. http://www.thehindu.com/opinion/op-ed/article568602.ece.

However, they are completely opposed to the way the government is going about it, since such a way will, they feel, end up defeating the very purpose of enumerating caste. Their problem directly hits at the UID: the caste census is expected to take place 'in conjunction with the National Population Register (NPR) process at the biometric data capture stage'. To this they object: firstly, because data can be compromised because it would be tagged on to the biometric documentation of about 84 crore Indians. This has serious constitutional-legal issues around the crucial question of confidentiality. The Census Act 1948 had provided strong protection for all data collected by the census, and so historically, although the Indian census necessarily collects individual information, *it has always released only*

aggregated and anonymised data. Such protection to individuals is now removed by the Citizenship Rules of 2003 which govern the NPR and the biometric data capture process, and hence, there is every chance of the confidentiality of caste data being breached. And there is of course also the fact that 'outside agencies' are likely to be involved in the process of data collection, whose bonafides are suspect.

Such coupling caste Census with biometric data and with the NPR can, they argue, actually set back what is already a very complex exercise of enumeration. Even the most strident advocates of a Caste Census recognize that it is not an easy proposition. For them, the only answer is for the new technologies of biometrics to stay away from this. The only agency in India capable of handing such an exercise is the Office of the Registrar General, and this Office would be crippled if it has to now start collecting caste data at the stage of biometric capture. And what purpose would be served by such a process anyway? If the main reason to couple the caste census with biometrics is to eliminate inflation of numbers and to protect the integrity of the head count, there are other ways round the roadblock: for example, household population totals (along with gender breakup) that have already been collected in the house-listing and housing census schedule can be used as a check on the caste data at the enumeration stage.

The above argument has significant similarities with Usha Ramanathan's position as mentioned earlier in this chapter: a first statement opposing the initiative on foundational principle ('I do not accept this'), followed by a second position, 'It won't work', and a third 'Why rock the boat when you have a functioning system?'. My interest is slightly different, and slightly more speculative: *assuming* for purposes of argument that people's claim rights would want them to be listed on a caste census, are there alternative technological ways by which to measure – as Baxi wants – indices of deprivation that are *consistent with the respect and dignity of self-chosen identities of the respondents?* This question, rather than any opposition or support, is what I want to try and explore further around what could be an exemplary way to conduct caste enumeration.

What would any such exemplary system of enumeration of caste, one that could respect self-chosen identities, look like? Let us return to the idea of self-interest and the possibility of falsifying data, either through a refusal to give it, as Natraj suggests, or because one may have acquired a different identity, as Baxi points out. **Deshpande and John's major essay on the census tends to dismiss the excessive importance given to falsification,** or to the possibility that this could undermine the value of the data being gathered. Such fears, they say, are exaggerated and not thought through carefully. Deshpande and John agree that people may answer the question, 'What is your caste?' differently on different occasions depending on who's asking, when they are looking for a bride for their son, seeking a favour from someone, or deciding who to vote for. In the present instance, of course, the person asking is the enumerator who has arrived at their doorstep and they have effectively nothing to gain by lying, since whatever caste you name in the census entitles you to nothing, given that caste certificates (on which reservations depend) are entirely unrelated to the census. The question of respondents not knowing the correct answer is also unlikely to happen, say Deshpande and John, since typical Indian respondents are 'not likely to be in any fundamental existential doubt about their caste', given that such a luxury is only available only to an upper caste urban elite.

Satish Deshpande and Mary E. John, 'The Politics of Not Counting Caste', Economic & Political Weekly, June 19, 2010 vol xlv no 25, pg 39-42.

Given that the census is counting what people would *like* to be counted, its main purpose is precisely to perform this act of aggregation that no individual or group can do. *In this sense, the census is indeed about that elusive level of reality called the social*, which emerges into view only through aggregation. Though comprised only of individuals, this aggregate turns out to be much larger in social significance than the sum of its parts. Given all this, it is somewhat beside the point to worry about 'false information'; indeed, it is hard to figure out what 'false' and 'true' might mean here. In this sense, and with respect to variables like caste or religion, the census is something like a mandatory opinion poll.

Viewing the census as an opinion poll is clearly a curious argument. Is a census indeed nothing more than a gigantic market research survey? What would happen,

one wonders, if such an aspirational logic – of people answering, not factually what is, but what they would like their answer to be – were applied to all questions on the census?

The other aspect, apart from the one of aspirational identity, is the elusive aspect of caste names: themselves, in their sheer proliferation, clearly a further aspect of the elusiveness of identity. Deshpande and John suggest further methodologies for working this out. Firstly, the standards of census accountability must be determined with reference to its role and function. It would be absurd to make the census accountable in the same way and to the same extent that an individual ethnographer is held accountable for her data. For each produces 'truths' that the other cannot and one does not falsify the other. Secondly, one way out is to give the local enumerator who arrives at my doorstep some additional responsibilities: for example, follow-up questions like 'is your caste known by any other names in your locality?', or 'is your family surname different from yours'? They argue that synonyms for caste names are centripetal rather than centrifugal, that is, they will be tightly concentrated around a central core rather than diverging greatly from it. Local enumerators are almost certain to be able to recognize a family resemblance common to synonyms.

Sonalde Desai takes on similar questions, but deepens the technical aspect through an innovative solution for how the database should be structured. In 2001, when data was last collected on SC/ST, enumerators were given official state-specific lists of SCs/STs and were asked to check whether the caste identification provided by the household matched the list; and so people enumerated would be marked as being SC or ST only if their caste or tribe was included in the list. The list only included Hindus, Sikhs and Buddhists as being SC. Inevitably, several problems arose. Castes noted by enumerators did not match the caste list, and so several tribes went under-enumerated, leading to fears of their impending extinction. There was the enumerator's tendency to cut corners from an extremely unwieldy list by simply counting many households as belonging to forward castes in order to avoid having

Sonalde Desai, 'Caste and Census: A Forward Looking Strategy', Economic & Political Weekly, vol xlv no 29, July 17, 2010, pg. 10-13.

to look through the entire list for elusive caste names.

What can be a solution for these kinds of problems? Could the census replace the highly structured approach presently followed with a more flexible approach, in which households are asked to provide their caste identification that enumerators could write down and *then* classify at the data entry phase? Not easy, and a potential classification nightmare. One possible strategy, says Desai, may be to adapt a form used in 2004 for industrial and occupational classification systems called the National Classification of Occupations (NCO-04), the system contained the following hierarchical structure: division (10), subdivision (30), group (116), family (439), occupations (2,945). Under this scheme, a *bidi* furnace operator, for example, would be classified with a code 7,416.45, where the major division is seven (craft and related workers), subdivision is 74 (craft and related workers excluding metal workers, building workers and textile and printing workers), group is 741 (food processing and related workers), family is 7,416 (tobacco preparers), and occupation is 7,416.45 (*bidi* furnace operator). However, says Desai, if the respondent were to say that he engages in some highly specialised task within *bidi* preparation that is not included in the list (for example, counting and making *bidi* bundles), he could be classified as 7,416.90, or 'tobacco worker not elsewhere classified'.

A possible analogous process for caste could therefore, be the following: you start with a list of *jatis* residing through the length and breadth of India, from NSS, NFHS or other surveys, augmented from other sources where caste data are available, such as marriage advertisements, or lists of caste associations. This list could then be classified by anthropologists into some kind of classification scheme, with sub-castes grouped within broader castes, and allowing space for the possibility of the enumerator encountering a caste for which no predefined category is specified.

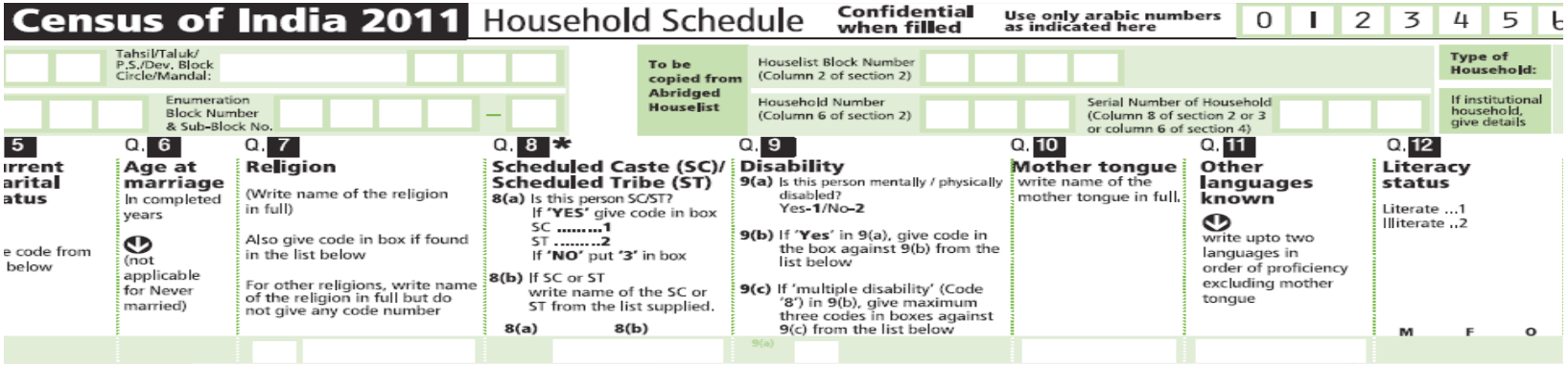
Such a list should then be sorted by district. The enumerator can therefore, have two lists: one containing about 100 castes most frequently found in the district, and a second containing all castes found throughout India. Given the geographic

clustering of castes and tribes in various regions of India, it seems likely that in about 80 per cent of the cases, most respondents would find their caste within the first, shorter list: Garasias will only rarely be found in West Bengal but frequently in Gujarat and Rajasthan.

Once such a classification list is developed, it could be tested through large nationwide sample surveys, and then possibly incorporated in the 2021 Census. Desai points out that if we don't start work on creating a full list of *jatis* and *subjatis* and including it into an enumeration system, we will not be ready even by 2021.

Such a data structure clearly has advantages, in that it can work with relatively minute sub-classifications with relative ease. It does not however, begin to address the question of elusive self-interest, or what Baxi wants: indices of deprivation that are 'consistent with respect and dignity of self-chosen identities of the respondents'. If we are to produce a database that can properly handle the caste census, it would need to take on the larger question of identity as Baxi speaks of it – caste as potentially a valuable inheritance and thus, an instrument of *agency* as against an imposition of a compulsory identity.

Such an initiative could be a worthwhile object of any 'unique identity' project, but there appears no evidence in the immediate future of any data resource even beginning to comprehend the technical problems of working with this level of ambiguous identity. I will conclude by drawing attention to the fact that neither the NPR's database nor the AP Food & Civil Supplies Department's KYR-Plus database, and the two that I have come across registering caste, have even begun attempting anything of the sort. KYR-Plus simply lists out SC, ST, BC, OC and Others from a pull-down menu. And NPR does not even go that far.



Census of India 2011 Household Schedule **Confidential when filled** Use only arabic numbers as indicated here 0 1 2 3 4 5 6

Tahsil/Taluk/ P.S./Dev. Block Circle/Mandal:

Enumeration Block Number & Sub-Block No.

To be copied from Abridged Houselist

Houselist Block Number (Column 2 of section 2)

Household Number (Column 6 of section 2)

Serial Number of Household (Column 8 of section 2 or 3 or column 6 of section 4)

Type of Household:

If institutional household, give details

5 **irrent arital atus**
e code from below

Q. 6 **Age at marriage**
In completed years
(not applicable for Never married)

Q. 7 **Religion**
(Write name of the religion in full)
Also give code in box if found in the list below
For other religions, write name of the religion in full but do not give any code number

Q. 8 * **Scheduled Caste (SC)/ Scheduled Tribe (ST)**
8(a) Is this person SC/ST?
If 'YES' give code in box
SC 1
ST 2
If 'NO' put '3' in box
8(b) If SC or ST write name of the SC or ST from the list supplied.
8(a) 8(b)

Q. 9 **Disability**
9(a) Is this person mentally / physically disabled? Yes-1/No-2
9(b) If 'Yes' in 9(a), give code in the box against 9(b) from the list below
9(c) If 'multiple disability' (Code '8') in 9(b), give maximum three codes in boxes against 9(c) from the list below
9(a)

Q. 10 **Mother tongue**
write name of the mother tongue in full.

Q. 11 **Other languages known**
write upto two languages in order of proficiency excluding mother tongue

Q. 12 **Literacy status**
Literate ...1
Illiterate ..2
M F O

GOVERNANCE:

While something like caste does throw up challenging, perhaps crippling, questions to any form of biometric self-identification, it does appear that there have been other flanks opened up on how to deal with popular self-interest that is more compatible with UID-type measurement. As we have already seen through the book, while the deployment of technology to facilitate governance has changed radically, the concept of governance has not always kept pace. We have already explored some of the failures of e-governance (Chapter 1), and briefly encountered some new initiatives of technologically-informed governance initiatives. I want to conclude my argument in an open-ended way, by providing perhaps the most innovative recent example by which new governance initiatives appear to want to be able to take on the technological challenges of flexible interest-based self-identity.

The recent TAGUP (Technology Advisory Group on Unique Projects) Report published in early 2011 outlines a protocol for IT systems for what the government considered 'mission critical' projects that possessed 'immense transformative power (to) change India's growth trajectory'. The purpose behind TAGUP (briefly mentioned in Chapter 1) was to 'find ways to rapidly roll out these complex systems, to achieve project objectives and sustain high levels of reliable performance': the focus being on Tax Information Network (TIN), New Pension Scheme (NPS), National Treasury Management Agency (NTMA), the Expenditure Information Network (EIN), and the

Goods and Service Tax (GST). TAGUP had fashioned its solution on the assembly of a National Information Utilities (NIU), a class of institutions that would be meant to handle all aspects of IT for complex governmental projects. It would be a clutch of 'private companies with a public purpose', making available essential infrastructure for public service. NIUs would compete for government contracts, and the government, as a paying customer, would be free to take its business from one NIU to another. Basically, an NIU would make available essential infrastructure for public service: for government functions to be carried out efficiently, allowing feasible projects to be designed. While NIUs were defined mainly through a set of negations – that they would not be the former State, but rather represent a new and benevolent governance that would directly radiate from the technology itself, no longer riddled by an absence of leadership, outdated recruitment processes, or an inability to pay market salaries for specialised skills. It should have total private ownership of at least 51 per cent, with governmental ownership at least 26 per cent: and so, NIUs should compete for government contracts, and the government, as a paying customer, should be free to take its business from one NIU to another, if necessary.

On the one side, the NIU has the standard checklist of virtues, defined entirely through negation. So it will not be the former State; it will therefore, not have the negatives associated with State sloth. The new form of benevolent governance will directly radiate from the technology itself. The NIU will no longer be riddled by an absence of leadership, outdated recruitment processes, or an inability to pay market salaries for specialized skills. It will no longer lack opportunities and variety in assignments, or avenues of continued enhancement of professional skills and career growth opportunities. It will no longer produce a non-conducive work environment, outdated performance evaluation systems preferring seniority over merit, or untimely transfers of officers posted to handle certain project functions. This NIU should have a net worth of at least Rs. 300 crore, to ensure that it is well-capitalized, can hire the best people at competitive salaries, and invest adequately in infrastructure, so that it can manage large-scale national projects. NIUs should be capable of self-financing their operations and providing for their sustenance in the

near future; they should make 'reasonable profits', and levy reasonable charges on users without abusing their dominant position; they should not maximize profit or valuation. Salaries of employees should not be linked to profits. The salaries should be competitive and market driven, to ensure that the best quality of people for the job can be hired.

This, I have suggested, is by itself not new. What *is* new, perhaps, is the capacity of the concept to accommodate a democratic dimension of citizen self-interest, and, arising from that, to find a technological solution for the expression of that self-interest. So, in a chapter titled 'Openness', the TAGUP report says that the government, as a producer of public goods, should release data in well-defined formats electronically, when possible, as prescribed by the Right to Information Act, 2005. This is not only being provided because people should have access to it as a right, but also because it could *help innovative firms and individuals to combine various types of data to glean new information that may not have been possible from the individual datasets. Such data, importantly, would be both produced and received* by the new citizen: so that citizens would suddenly be entities capable of having their say in the processes of this production.

There is a need of a much greater scale of release of unencumbered data, placed into the public domain, of information created within government. There can be economic data, map data, census data, pollution data, water data, soil quality data, climate data, PIN code data, administrative boundaries data, health data, government accounts data, etc., which is released by the relevant ministries. Early international experiences of releasing open data using open file formats have resulted in mashups, which combine data from multiple sources and present it in ways that yield new insight, have been encouraging.

While this too is in not, in itself a new concept, what *is* new here is the way citizens are envisaged as both recipients and producers of such data: further, as entities capable of having some say in the processes of this production. The system should

therefore have a 'self-cleaning' mechanism that is directly linked to citizen self-interest:

The system (should be) self-cleaning because it is in the resident's interest to ensure that the system has correct data, in absence of, which he cannot authenticate his own identity. (TIN has seen a gradual increase in data quality over time, as taxpayers realized the benefits of electronic filing and electronic payments). Further, clean data can be ensured by standardization of processes, matching and verifying information in workflows, simple and well defined open data formats, electronic payments and processing, instant feedback to customers, incentives for compliance, and penalization for non-compliance. It is through incentives that data quality can be managed, rather than micromanagement of stakeholders.

There is considerable gloss on what are now named 'self-corrective forces' derived from society itself: under the chapter titled 'Accountability, Transparency and Self-corrective Forces', the report claims that:

> A transparency portal for an IT project in government works as a positive feedback loop. The fact that such a portal is implemented means that analytics about the performance of the project are generated immediately. As a result, any deviation from expected behaviour is detected quickly and rectified. In case such a portal is not well thought out, potential problems may manifest themselves much later, and may turn out to be difficult to fix. *A transparency portal leads to monitoring and feedback at various levels: within the service provider, within government, and by citizens at large*. A contact centre (therefore) closes the feedback loop of self-corrective forces. It establishes multiple channels of communication with all stakeholders, including end-users, for purposes of gathering information and reporting grievances. An effective contact centre is tightly integrated with the IT systems, so that queries and complaints can be dealt with effectively, and information is recorded and updated on a real-time basis. Some of the key features of such a contact centre are as follows:

1. Provide services in multiple languages
2. Provide inbound channels of communication such as voice, fax, letters, e-mail, and a web portal
3. Provide outbound channels such as voice, fax, letter, e-mail, and SMS messages
4. Available during working hours, or on a 24-by-7 basis, depending upon the nature of the project
5. Deploy key technologies such as a Customer Relationship Management application (CRM), Interactive Voice Response System (IVRS), Automatic Call Distribution (ACD), Computer Telephony Integration (CTI), call logging, quality management system, email response system, and scanning solutions for letters and faxes.

And arising from this, the new emphasis on crowd-sourcing as a direct feature of e-democracy:

> Enabling citizens and beneficiaries of public schemes to directly provide feedback using web and mobile phone-based platforms is a powerful way of involving citizens in improving public accountability. It unlocks the potential of collective wisdom. In addition, the ability to combine spatial and financial data can provide very powerful maps to track the progress of various initiatives and schemes.

Among the other schemes of government, according to TAGUP, to use successful crowd-sourcing means are the Ushahidi, Transparent Chennai, Environment Sustainability Index, Pollution Index, and e-Government's foundation projects.

Interestingly, openness does not always include open source: while open data, it is recommended, should use open source operating systems wherever possible, there was need to recognize that the NIU would have to have intellectual property over its source codes and that 'it may be counter-productive to the business planning and

profitability of the NIU to release all source code as open source'.

Could such a structure be able to answer the questions raised by caste census? The jury is still out on this one.

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