A Digital India revolution from below

Much of Internet governance today is 'governance by crisis'. As the Internet intersects with and transforms our social systems, the state is routinely faced with sudden, and often urgent, challenges. It typically responds in a knee-jerk manner, to try and plug the legal/ policy gaps that get opened up. This could be about dealing with loose online comments on some important political figure gone viral or a real security panic caused by the role of social media in a communal flare-up. A daily stream of global news further keeps exposing legal and policy conundrums in the Internet governance space. Just within the last few weeks, an EU court established the 'right to be (digitally) forgotten' and another court in the US claimed jurisdiction over data residing outside the US. Policy challenges and crises are endemic in this area, although India may yet only be beginning to feel the pinch. Reactive responses from the state tend to be myopic, not taking into account the depth and the breadth of the Internet's impact on our social systems, nor the rapid flux of the involved changes. They can end up creating more tangles and loopholes from a governance standpoint. A distinctive characteristic about Internet governance and policies is that they constitute a transversal space across sectors, which challenges existing policy structures. Where and how Internet policies should be made therefore can itself become a difficult question.

India may be well-poised to leverage the digital opportunity for leading an internal transformation into a developed society, and also take up global leadership in this area in terms of knowledge, technical and policy expertise, and providing Internet, and Internet-based, services. For this, however, the government of India will need to move from 'Internet governance by crisis' to 'Internet governance by foresight'. This requires (1) social and institutional capacity building, (2) considerable institutional change, (3) new policies and laws, and (4) program level actions. Any recommendation on the right mix of actions and their sequence will have to be tempered with the level of available political foresight, will and capacity. The new government in New Delhi has put forward a strong vision of a Digital India, and has shown openness to deep institutional changes, in general. Under the circumstances, it would be appropriate to propose the much needed social and institutional changes in this area before going to specific policy recommendations.

A big shove towards a Digital India

The new government proposes to make the 'Digital India' agenda its lead horse for bringing about systemic changes in the country. However, at this stage, sufficient understanding does not seem to exist that creating a 'Digital India' is not just, or even basically, a technical issue. The kind of technologies that we will need are relatively commonplace, and India has sufficient talent in this area. 'Digital India' is much more about economic, social, political and cultural issues and challenges. It is therefore urgently needed to invest into developing economic, social, cultural and political understanding of a digitally-enabled society, and its mutating social systems. World-over, attention is shifting from the Internet and digital systems as a technical subject to a sharp focus on their social nature, significance and impact. To begin making such a shift in India's Internet policy establishment may be the single biggest imperative today.

With ISPs (Internet service providers) actively exploring business models for mass consumption, and bottom-of-the-pyramid markets, India's Internet today stands at the inflexion point of a huge demographic shift. This process is also expected to get a fillip from the declared policy intentions of the new government. As Internet penetration move closer to the 50 percent mark in the next few years, '*online Bharat*' can prove to be a very different place than what it is today, in ways that are currently not understood well-enough.

Two concrete steps can be taken to begin shaping a more informed social, economic and cultural approach to a 'Digital India'. First is to set up a well-resourced new public institution for Internet-related social and economic research, focusing both on fundamental and policy-oriented research. Such an institution would help India strategically and pro-actively address the immense opportunities and challenges that can be expected as the Internet, information and data, become the basic elements of the emerging social systems. It can also catapult India into a global knowledge leadership position regarding the social and economic characteristics and impact of the Internet.

Second, Internet should be introduced as a social and cultural (apart from, technical) subject in early school text books, as a new youthful India grows up with the Internet. Such a specifically humanities approach to understanding the Internet, and an Internet-enabled society (or 'Digital India'), should be built into curriculum at all levels. The Internet must be seen not just as a technology and a tool, but as a collaboratively-developed social artifact that enables new forms of communication and communities, new ways to process and access information, and new ways to organize our social systems. It is necessary to make such a fundamental epistemic shift in our collective mind if India has to make it big with the Internet, and, genuinely be a digital society.

In terms of making Internet policies, India should first aim at developing a set of Internet policy principles. These would serve as the guideposts for specific policy making in different Internet-related areas. Such a process will (1) help taking a high level visionary view of the fundamental changes that the Internet is causing in our societies, (2) enable the best cross-sectoral assessment and coordination of perspectives and outcomes, and (3) ensure policy flexibility to deal with emerging situations and contexts in this fast shifting terrain. Such high level principles, developed through a participatory process, should be followed by a framework legislation for Internet-related polices based on such principles. Brazil followed such a method for its Civil Rights Framework for the Internet. The OECD too has come up with a set of Internet Policy Principles. Such policy principles will not only guide India's internal policy work but also help it articulate well-informed positions at global forums.

It is rather incongruent that an area of such fundamental significance as Internet governance is currently being dealt by a sub-section of a division of the Department of Electronics and IT[1]. In the times of communication and information systems convergence, India should merge the Ministry of Communications and IT and the Ministry for Information and Broadcasting into one – the Ministry for Information and Communication. Three different departments of this new ministry should deal respectively with the three key layers of our increasingly convergent information and communication systems, namely, (1) infrastructure, (2) digital architecture and (3) content/data.

Developing an appropriate institutional set-up requires a reigning in of the state's tendency to seek domination if not control over society's informational space. That digitisation makes it ever easier and more alluring to do so is in fact the elephant in the Internet policy room. The lack of an adequate resolution of this extremely sensitive issue has, unfortunately, retarded the needed progress on various Internet policy fronts. It is recommended that an independent statutory body be created to deal with content regulation and data protection issues, within the legal framework developed by the legislature. (This body should also look at the issue of personal data as the key resource of the Internet economy, and fair allocation of value accruing from it.) The Telecommunications Regulatory Authority of India (TRAI), with a more clearly laid out mandate and role, should continue to deal with digital infrastructure related regulatory issues.

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1   As the enabling framework, it has the IT Act, 2000, which is a typical rag tag legislation with a 'plug the gap' mentality discussed in the first section of this paper. It needs to be urgently replaced by areas specific legislations that are based on sound background work and are adequately future-proof.

Cyber-security should move to a separate department under the Ministry of Home Affairs. This important area requires more centrally a security perspective than an IT one. However, the competence of this department should be strictly defined and restricted to security of infrastructure and digital systems, with an aim to prevent either (1) damage to these systems, or (2) misuse of these system for criminal activity, including data theft. It should exclude aspects involving possible content regulation or access to personal data of citizens. These should be subject to legal frameworks developed by the 'content/data' related department of the new Ministry for Information and Communication, and implemented[2] and overseen by the mentioned statutory body for content and data issues. Such a scheme can provide a good system of checks-and-balances to ensure security without undue trampling of citizens rights.

India also needs to develop data policies that determine different levels of required protection for different categories of data (including, possibly, the need for in-country storage and processing for the most sensitive category), and also to regulate how personal data is used for commercial benefit in terms of people's economic rights to their informational products.

Pushing the digital imaginations and boundaries

Some basic digital infrastructure and functionalities must be recognized to have the character of public utilities. These would need to be regulated to (1) ensure a level digital playing field for all, which principle can be termed as 'platform[3] neutrality' and (2) a basic digital access and 'effective use' for everyone as a right.

The most basic 'platform neutrality' is required at the infrastructure level so that ISPs remain neutral to the content they carry and are not able to build premium channels to transport content better and faster against payment by content providers. This is called the principle of net neutrality. TRAI at present deals with this issue, largely on an ad hoc basis, without clear principles and policies for ensuring net neutrality. Such principles should urgently be put in place since net neutrality has begun to be widely violated in India.

Neutrality is required not only at the infrastructure level *vis-a-vis* the content and applications carried over it, but also at other levels where companies develop monopoly positions that are then used for strategic gate-keeping and extracting rents. For instance, a monopoly search engine can manipulate search results and extract rents for providing search prominence which is very important for anyone with a web presence. Similarly, monopoly social networking and media platforms can extract rents owing to their strategic location and domination over some basic layers and functionalities of the Internet.

Ensuring platform neutrality, first of all, requires 'recognizing' what can be considered as the platform layers of the Internet that provide some kind of monopoly service/support to higher layers, or to some key social functions. This has to be followed by (1) mandating platform interoperability, data-portability and open standards, (2) restricting horizontal and vertical integrations, and (3) enforcing

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2   The content/data related regulatory body will have quasi-judicial authority to decide on content issues needing immediate action. For this purpose it will need to be provided with an extensive techno-enabled enforcement machinery to replace private policing of content that is the norm today. It is not possible to provide further details of this proposal in this short paper.

3   'Platform' is a term employed for Internet/digital applications like operating software, search engine, etc, which have a fundamental, horizontal and largely monopolistic role in enabling various digital functions and activities.

openness and transparency of basic algorithms that underly a platform functionality[4].

At present, some cases related to platform neutrality violations are being dealt by the Competition Commission. However, ensuring level playing field in terms of the basic layers or functionalities of the society's communication and information system requires more specific and stringent guidelines and policies than just the normal economic competition policies. Ensuring platform neutrality on the Internet or digital systems can be under the charge of TRAI, perhaps with a changed name and extended mandate[5], within the laws and policies developed by the government. Regulation should also support linguistically and culturally diverse platforms, including, if required, through positive discrimination action.

Next to ensuring a level digital playing field comes the issue of universal digital service. It implies not just access to the Internet, but also to its basic functionalities, in the language and other cultural specificities of all people in India. Two related measures should be undertaken in this regard. One, free access to Internet at community centres across India on a public library model needs to be provided. Such community digital centres should be well-resourced to become vibrant spaces of community activity. (More about such centres in the next section.) With so much of idle optic fibre lying around[6], we have waited far too long for the right business model to come along. It has become a chicken and egg story; whether cheap or free Internet comes first or a huge enough demand for Internet use. Such criminal wastage of time and vast un-utilized resources should be stemmed immediately, especially when these valuable connectivity resources can be used to jump start a new India on the strength of universal digital enablement.

Recognizing the rather successful trend in many parts of the world towards community or municipal networks[7], Internet infrastructure should be decentralised to allow open access models for municipality and district (and sub-district) level ISPs. Local governments and community groups should be encouraged and supported to become ISPs. Basic Internet access should be considered as a public infrastructure with revenue as a secondary consideration, at least initially. Unlike traditional telecommunication based on circuit-switching that requires centralized models, Internet Protocol based connectivity works very well as a decentralized model. Promoting such a model will require strict enforcement of policies for open peering and open access. The Bharat Broadband Initiative utilizing Universal Service Funds should provide the backhaul for this effort wherever commercial telcos are unwilling to do so. Spectrum policies need a fundamental shift; instead of looking at extracting billions as spectrum fees which then converts into exploitative connectivity models, governments should loosen the regime to ensure an open and decentralized field.

A nudge of support to private and community actors
The government needs to take up the role of a strategic facilitator in support of various kinds of actors involved in bringing about positive social changes using the digital opportunity.

India's IT industry has been key to its emergence as a global economic power. However, it has largely failed to rise in global value chains to be able to develop world class products or services. Any such

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4   If public openness of such algorithms may not serve public interest, for instance, because of increased risk of 'gaming' , algorithms can be 'open' only to the regulatory authority who will periodically judge their fairness and adherence to public interest.

5   It could be Digital Infrastructure Regulatory Authority of India

6   There is a vast unused optic fibre network across India without last mile extension which has not been carried out because of poor revenue assessments.

7   Including in the most unlikely of places, the US.

opportunity further closes up in a networked digital ecosystem, centred on the Internet, where almost indefinite economies of scale and network effects push the market towards domination by global monopolies. Almost all of them are based in the US. On the positive side, though, as the Internet and the digital phenomenon becomes more socio-cultural than just technical (as for instance, a desktop office suite relatively is), there is an inherent bias towards localised products and services. Which of these two opposing forces dominates will, to a considerable extent, determine whether Indian companies can be successful in taking on the national market, and then leverage it to offer global Internet services.

Policy has an important role here to support the Indian Internet industry, which, except for a few online ticketing and travel sites and e-commerce portals, is practically non-existent. India lost the IT manufacturing opportunity because it signed off its market protections in the IT Agreement at WTO in 1997. It is now, belatedly, trying to use the security and public procurement exceptions in the agreement to provide some level of support to local IT manufacturing. It will be good to begin such policy support before the main wave passes as is yet to be in the case of maturing of the Internet industry. In earlier sections, we discussed various policy measures like ensuring 'platform neutrality' and appropriate data policies that can check concentration of market power in this sector, which would allow better opportunities for Indian companies, in the national as well as global markets.

In addition, the government should also directly support the Indian industry through funds for incubating promising start-ups in different areas, like security, cloud computing, social networking, web search, and so on. Preferential use by governments of Indian Internet services can go a long way in promoting them. However, Internet industry is a complex system, and policies should be dynamic and flexible to meet their objectives. Indian industry has to be promoted without it becoming insular to the global Internet, which will deny Indian customers valuable services as well as the Indian industry a global market. A special Mission to promote Indian Internet industry should be set up at the earliest.

Next, the government should support community actors and volunteers to produce digital commons, which comprise shared digital spaces, software, applications and services that are fundamental for everyone's effective digital existence and participation. These are to be the public goods of the digital age, which have to be produced through networked methodologies involving community participation. The Internet economy is based on collaborative production through voluntary micro-labour. All Internet platform businesses – be it web search, social networking, micro-media, geo-mapping or translation tools – are built out of free contributions of millions of users. Currently, most of this free community labor is captured for profit by monopoly private platforms. The open source software model is a good prototype for harnessing such labor also for community purposes.

The networked digital ecology, however, requires efficient platform-managers to hold together and provide services based on such voluntary contributions, which is a role that public agencies can play. To be able to do this, such agencies have to learn to work with communities in ways that are very different from their current bureaucratic attitudes and styles. New forms of public-community partnerships or networks have to be built through new style public facilitator bodies[8]. To test the ground, a few pilot projects can be taken up in this regard in some key Internet platform areas like digital geo-mapping, crowd-sourced translation tools, etc. A very important area where community as well as private sector actors need to be engaged through policy and funding support is the development of Indian language interfaces and locally appropriate softwares and applications, which *inter alia* ensure access by the disabled and other challenged users.

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8   Such work can be outsourced to non-state organizations under close public supervision.

Thirdly, the government should put up community digital centres as a new community commons, and anchor various community development activities and projects around them. This should be undertaken as a new national level program. Such digital centres would provide a common/ shared digital platform for a host of different public and civil society development activities, which can transform the effectiveness of community development efforts. These centres will be powered by free connectivity from the Bharat Broadband project, and have enough digital devices, to enable fair access for all community members.

In these centres, people will work together to learn and contribute learning, access information, develop local databases and local cultural histories, participate in civic life, and explore economic opportunities. Here, they can download community digital platforms/systems developed through the earlier described processes, and also contribute to them. It is only through such community engagements from across the country that a really participative and collaborative Digital India can be built. A Digital India agenda and structure should not simply be imposed from the top, as a kind of development management system. Without vibrant 'digital communities' and 'digital villages', a truly 'Digital India' is not possible. The Prime Minister in his recent Independence speech called for a Digital India for the poor. The revolution must start from below.