THE PAPER PROMISES *of* DIGITIZATION:

Digitizing Spatial Information for Planning in the Chennai Metropolis

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Initiatives for implementing geospatial information databases are being implemented across Indian cities. This essay explores one such initiative implemented by a metropolitan planning agency, the Chennai Metropolitan Development Authority (CMDA) in a South Indian metropolis. It shows that, contrary to the promises of digital databases as a tool for improving information sharing to aid in decision-making and further citizen participation, the state agencies tend to use them primarily for surveillance and storage. Such initiatives have led to a spiraling web of information production by different agencies and have reinforced the culture of secrecy rather than opening up information.

BACKGROUND: DIGITAL MASTER PLAN *for the* CHENNAI METROPOLIS

The Chennai metropolis is home to a population of 8.69 million (Census of India 2011) and is the capital of the South Indian state of Tamilnadu. It is the fourth largest metropolis in the country and is expected to have a population of 12 million by 2026. The economic base of the

city comprises diverse activities including trade, manufacturing, information technology (IT), and IT-enabled services. The city's peripheries and surrounding villages have grown rapidly over the last two decades (CMDA 2008).

The CMDA is the nodal planning agency that regulates the physical growth of the city. Previously known as the Madras Metropolitan Authority (MMA) and the Madras Metropolitan Development Authority, the CMDA was established in 1975 as a statutory institution, under the provisions of the Town and Country Planning Act of 1973 (CMDA 2008). It is headed by a civil servant of the Indian Administrative Services who reports to the Regional State Department of Housing and Urban Development. The functions of the CMDA include master plan preparation, site allocation, plan permit approval, and megaproject implementation. These are carried out by six departments.

The CMDA uses a geospatial database for two functions: (1) to prepare master plans and detailed development plans, and (2) to review applications for plan permits and land use changes. The CMDA is one of the first agencies in the city to develop a geospatial database. The agency's planners have incrementally introduced the development and use of this database through several small projects since the mid-eighties, drawing on funding assistance from several sources including the World Bank, Government of India (GOI) grants, and private IT companies.

Unlike other state agencies in the city, the CMDA has in-house skills for creating its geospatial database, and many members of its staff were trained on the job. The introduction of the technology was largely due to initiatives of a few individual planners, who were able to enlist the support of civil servants heading the organization. Despite support from the top, the CMDA feared resistance from the lower- and mid-level bureaucracy,[1] and thus introduced digitization projects slowly and incrementally without attracting much attention.

PROMISE *and* REALITY *of* DIGITAL TOOLS

Our preliminary findings suggest that CMDA's chief planners perceive the geospatial database as a useful tool for surveillance of activities both within and outside the organization, for easy reproduction of maps, and for safe archiving. However, the influence of this tool in altering the organizational practices appears to have been limited.

A case in point is the circumstance under which CMDA introduced the geospatial database in its decision-making process. The agency first used satellite images in

[1] Interview with retired chief planner and ex-head of Plan Permit Division, CMDA

the mid-eighties during the Madras Urban Development Project (MUDP)[2] to develop a strategy for squatter upgradation in the city, for which the CMDA undertook a city-wide survey. The resistance faced by city planners to surveying specific territories, particularly squatter settlements, was a key reason that the agency opted for satellite images to locate squatter settlements in different parts of the city. The images were used to develop a base map, which was subsequently deployed during the preparation of the GIS-enabled second Master plan for the city in 1995.[3]

During our field research we observed that the CMDA's GIS department, which is in charge of developing the geospatial database, does not have a high status within the organization, and the positions within it are not sought after by senior planners. The architect of the GIS department, a chief planner who had a keen interest in technology, set up the department in the mid-nineties. He explained that officials like him often opted for a position involving technical work to circumvent political pressures.[4] The unit remains isolated and guards its information fiercely. Planners at different positions in the official hierarchy repeatedly cited the ease of reproducing master plans from the geospatial database and the difficulty of maintaining paper records as reasons for the adoption of AutoCAD technology between 1979 and 1980, and the Geographical Information System (GIS) in 2000. Despite automation, the CMDA maintains paper records for a stipulated period.

Another example of the use of digital tools for surveillance is the reason cited by an ex-chief planner[5] for automating service provision. Automation was introduced for monitoring the progress of mid-level bureaucrats' work reviewing applications for plan permits. An application for a plan permit or land use change is reviewed within CMDA. There was a very limited flow of information between departments and sometimes within a department. The process created ample opportunities for rent-seeking. Moreover, citizens with connections to the agency often benefitted from multiple allocations of subsidized plots. Automation was viewed as a way to monitor the work of lower- and mid-level bureaucrats in the organization and to avoid multiple allocations to an applicant. Although these intentions promised to render CMDA's workings transparent both internally and for citizens, the reality is different. Interviews with officials from different departments of the agency show that the flow of information is still highly restricted. Further, according to a few of the developers interviewed,

[2] It was implemented between 1986 and 1995.

[3] Interview with ex-chief planner and head of GIS Department, CMDA.

[4] Interview with retired chief planner and ex-head of GIS Cell, CMDA.

[5] Interview with ex-chief planner and head of plan permit and chief planner, Mahabalipuram Planning Authority.

although the plan permit process has been streamlined, personal connections matter to move the files quickly. The extent to which citizens' interaction and relationship with the CMDA has changed needs to be researched further.[6]

USE/NON-USE: INFORMATION SHARING *for* CITIZEN PARTICIPATION *and* INTERAGENCY COORDINATION

The CMDA is mandated to put into place mechanisms for citizens' participation in shaping master plan decisions, according to the provisions of the Town and Country Planning Act of 1976. Over the years, the act's provision has been reduced to inconspicuous advertisement in leading newspapers and at the CMDA's premises. To what extent has the spatial database maintained by the agency altered the spaces for citizen participation? To date, our findings suggest that the potential of digital tools remains unexploited, primarily due to the attitude of CMDA planners towards the idea of citizen participation.

The CMDA planners considered their approach to citizen participation in the second master plan a progressive step as compared to the earlier plan. They organized twenty public consultations in the city, which predominantly served as information dissemination sessions rather than giving citizens any say in planning decisions. The planners' view was that digital plans were useful to educate the public and that citizens had little expertise in or concern about collective issues. The officials involved in this exercise felt the consultative process was time consuming without having any significant input to improve planning decisions or relevance to their everyday work in the office. Further, though plans are published on the web, the planners observed that they have not altered the way citizens engage with the CMDA or the manner in which CMDA considers public demands.

The introduction of the GIS tool has also not had much influence over intra-agency or interagency sharing of information. The GIS department within the CMDA functions as an isolated unit, and access to its information archive is guarded. Constrained resources limit the ability of different institutions to keep the information up to date. Moreover, even though CMDA is willing to share its geospatial database, other agencies are often not willing to build on existing sources. Two factors have contributed to this trend: (1) legal policies on map-sharing, and (2) easy availability of Central Government funding for geospatial database development. According to the CMDA planners and researchers interviewed, the latter has reinforced the culture of secrecy between state agencies. Further,

[6] Interviews with a developer and architects in Chennai city suggests that securing plan permits take a long time and information about the progress of the file is secured through their contacts.

these agencies predominantly contract out the development of spatial databases to private consultancy agencies, which are equally unwilling to share databases, in the hope of securing further contracts. This is not a phenomenon specific to the CMDA, but was observed in other agencies covered for our research. Our preliminary findings suggest that the various interventions for information digitization have generated an ever-spiraling production of maps and databases, often supported by independent funding streams, while the use to which these maps and databases are put remains unclear.

CONCLUSION

This essay explored the experience of a metropolitan development agency in creating a geospatial database, with a specific focus on its motivation and the use/non-use of the digital database in decision-making and furthering citizen participation. Our preliminary findings show that the development of digital tools is often motivated by funding availability, surveillance, and ease of storing records. The case discussed in this paper is not an isolated one, but is a common scenario across different agencies in the city. It raises concern about the ways such projects can contribute to a political economy of incessant information production that is often not put to use. Further research is needed on the specific legal and institutional aspects of this issue to understand ways of streamlining information flow within the state and between the state and citizens.

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CMDA (2008), Second Master Plan For Chennai Metropolitan Area, 2026. Volume I Vision, Strategies and Action Plans. Chennai:CMDA

Census of India (2011). Provisional Population Totals. Government of India. (Table 3: Urban Agglomeration having Population 1 lakh and above). Accessed on 10.9.2013