GIS for District-Level Administration in India: Problems and Opportunities

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presented by groups 5 and 12
Brief Overview

- The way Geographical Information Systems (GIS) was used in Indian district level administration

- The articles two goals:
  1. Promote intensive research
  2. Open new fields of IS research

- Contextualism
- Actor-Network theory
Research Approach

- Interpretive case study
  - Empirical studies
  - Needed a lot of background knowledge

- Detailed description of the specific approaches they adopted for their research study
  - Methodology
  - Theory
  - Methods
Methodology

● Contextualism
  o Examining in detail the actions and perceptions of human actors and the context in which these actions took place and perceptions were formed.

● Longitudinal
  o research study over the period 1993 to 1995.
  o data from 1991 until 1993, when the GIS projects in MOEF were commissioned and operationalized.

(MOEF = Ministry of Environment and Forest).
Theory

- Actor-network theory
  - examines the motivations and actions of actors who form elements, linked by associations, of different networks aligned interests.
  - actors are taken to include both human beings and non-human actors such as technical artifacts.
Methods

- Interviews (with and without tape recorder)
- Observations
- System demonstrations
- Going through reports and filed documents
- Contact via Email
- Workshop (2 days)
Case Study
What is GIS?

- Geographical information systems technology: comprising hardware, software and data
- It captures, stores, analyzes, manages and presents geographical information linked to location
- In this study GIS was used to aid wasteland development in different areas in India
  - Wasteland = degraded land, currently underutilized that can be brought under vegetative cover
Key Events and Phases in the Case Study

- National Wastelands Identification Project (1986)
- USAID mission to India (1989)
- Indian scientists visit USA (1990)
- Jan 1991
- Jan 1993
- Jan 1994
- Jan 1996

Time line:
- Phase I
- Phase II
1991-1993: Phase I

- Eight of the 10 projects were producing working GIS systems based on real data from the field sites in their particular districts
- More emphasis on scientific research
- Less emphasis on socio-economic variables such as population and livestock data
1993-1995: Phase II

• Delay between end of Phase I and start of Phase II
• Five Phase II projects with different levels of success
• Some progress in some of the sites toward transferring the technology to district level
• No actual working systems receiving real use
• Some optimistic signs for the future of GIS-based approaches
3 main differences between the West and India

- Rational decision making
- Map-based culture
- Coordinated action
Three broad groups of human actors:

- U.S.-based actors
- Central government officials in India
- Indian scientific institutions involved in GIS development
The author’s role in the Network

● During latter part of research: some contact and coordination between different GIS projects and between the district level and the center in New Dehli

● One Indian and one British author.
  ○ Respondents saw Indian author as less threatening and it is likely that they were more open
  ○ The British author carried higher status and more novelty value
GIS not used on daily basis – What to do?

- Evolution of the society needed. (No map culture in India.)

- Promotion of the system through application to visible local issues. (Technology not popular with bureaucrats.)

- CHANGE IN EDUCATION = large investment, cooperation on the highest level

- Communication network has to be created between scientific developers and administrative users for data cooperation and sharing
3 criteria of convincing scientific writing

- **Golden- Biddle and Locke (GBL):** describe three broad criteria for ethnographic texts:

  - **AUTHENTICITY:** the ability of the text to convey the vitality of everyday life encountered by the researchers in the field setting
  - **PLAUSIBILITY:** ability of the text to connect to the personal and professional experience of the reader
  - **CRITICALITY:** ability of the text to actively probe readers to consider their taken-for-granted ideas and beliefs

- The two first aspects, authenticity and plausibility, are essential for a text to be convincing, but criticality is not indispensable
Achieving authenticity

- Use direct quotes
- Describe feeling and detailed aspects of everyday life in the field
- Describe your relationship with the field: the length of your stay, role, and the context of the fieldwork
- Show that you have been "genuine to your field experience": by well-organized pursuit and analysis of data
- Don’t be biased
Achieving plausibility

- Use standardized organization and schematics (tables and figures) “draft the reader”, through the use of “we”

- Explain the topic or idea by giving an example of potential applications in a broad set of organizations

- Be careful with definitive statements. Add quotes to back them up.

- Differ your findings from those of others: define obscure or missing areas of research, sharpen the contrast between your work and that done in the past.
Achieving criticality

- REMEMBER: the more the text has intentions of criticality, the more actively the rhetoric needs to be formulated!!

- Try to stop the reader in midair – carve the room to reflect by including rhetorical phrases like "should give one pause."

- Provoke the recognition by examination of differences between prevailing views and the ones articulated in the text - pose a series of questions.

- Use metaphors to help the reader imagine the new possibilities.
Conclusion

1. Promote intensive research
   - description of their research approach

2. Open new fields of IS research
   - GIS, an underrepresented topic
   - developing countries (India)
   - examining attitudes, perceptions and social structures
Discussion

"There are significant differences of methodology, theory and method under the broad interpretive case studies label" (Walsham & Sahay 1999 p.41).

Would you classify Case Study as a methodology or a interpretive paradigm?
Discussion

The researchers examined 10 GIS projects and decided to carry out detailed investigations on the six most advanced projects. Do you think that this gave them the best results? Or do you think that they should have focused on three not so advanced projects and three advanced projects instead?
Would you have chosen a different methodology for this kind of research?