# Urban Governance: Sustainable Policies and Implementation

## Broad Area

 Governance

## Need for the Study in the Context of Future of Cities

The basic feature of good governance is the design and implementation of well-defined policies. It is desirable to study the effect of a policy before its actual implementation to understand its effect on the urban system in the framework of dynamic models that integrate various aspects of urban life. It is also equally important to study the outcome of such policy implementation in reality on public life and improving upon the same. E-Governance websites, being the interface of the government with citizens, have an important role to play towards increasing the public awareness about the policies and providing related services online. Thus, the efficacy of policy implementation is partially dependent on the perception and actual behavior of the citizens on such sites.  The study of citizens' behavior on the e-governance websites can help to improve the quality of such services and thus to effectively implement the designed urban policies.

## Objective and Scope of Work

- Developing a dynamic model of urban growth, decay, and sustainability that considers factors such as industrial activities, housing and infrastructure, pollution, employment, and good governance in order to design sustainable urban policies for infrastructure development and delivery of basic services.
- Designing survey instruments to identify the factors that influence the quality of service of e-governance efforts.
- Developing models to find the effectiveness of government services from both service provider and service users' perspectives and thereby developing key performance indicators and balance scorecards.
- Analyzing user behavior and feedback to improve the e-governance services.
- Designing recommender systems for increasing defectiveness of Web usage.

The studies will be limited to e-governance services. If IIT permits, the outcome of the project can have pilot implementation in ERP and the Institute Website.

## Methodology

•*Developing an urban growth and decay model*:

The proposed *system dynamics model* will consider factors such as population growth, industrial activities, housing and infrastructure, pollution, employment and good governance on the future of a city. *Policy testing* will be carried out to study their effect on the growth and sustainability of a city.

•*Quality of Government services:*
*Designing survey* instruments to identify factors and their causal relationships that affect the quality of service of e-governance efforts. Various statistical decision modeling tools along with econometric models will be used for the same.

- *Measuring the effectiveness of government services*:
Both service provider and service users' perspectives will be captured and summarized using *multi-criteria decision making tools*. *Key performance indicators* and *balance scorecards* will be developed to quantify the service level.

• *User behavior and feedback analysis:*
The page view pattern user will be studied from click stream data using *data mining techniques*. The usage pattern will be studied by developing a *stochastic model. The study will help* to improve the e-governance site structure. User feedback on various services can also be analyzed using *text mining techniques*.

•*Recommender systems design*:
Recommender systems can be designed using various collaborative and content filtering techniques to enhance user experience in e-governance sites.

## Outcomes/Deliverables

- *Developing an urban growth and decay model*:
  - ✓ A generalized dynamic model of an urban system that captures typical factors that affect the growth and sustainability of a city to understand different modes of urban system behavior in response to urban policies and the natural process of interactions of physical, social and economic factors.
  - ✓ Design policies that ensure the city's growth and sustainability.

- *Quality of e- Government services:*
  - ✓ Econometric models to understand the causal relationship among the variables that affect the quality of e- Government services.

- *Measuring the effectiveness of government services*:

- ✓ Multi-criteria decision making models, KPIs and balanced score cards

- *User behavior and feedback analysis:*
  - ✓ Models for user behavior analysis using text mining and data mining techniques.

- *Recommender systems design*:
  - ✓ Recommender systems using various filtering techniques.

## Team Composition

| Principal Investigator | |
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| **Dr. Mamata Jenamani** | Associate Professor, Department of ISE, IIT Kharagpur |
| **Co Investigators** | |
| **Dr. P K J Mohapatra** | Professor, Department of ISE, IIT Kharagpur |
| **Dr. B. Mahanty** | Professor, Department of ISE, IIT Kharagpur |
| **Dr. Sujoy Bhattacharya** | Assistant Professor, VGSOM, IIT Kharagpur |