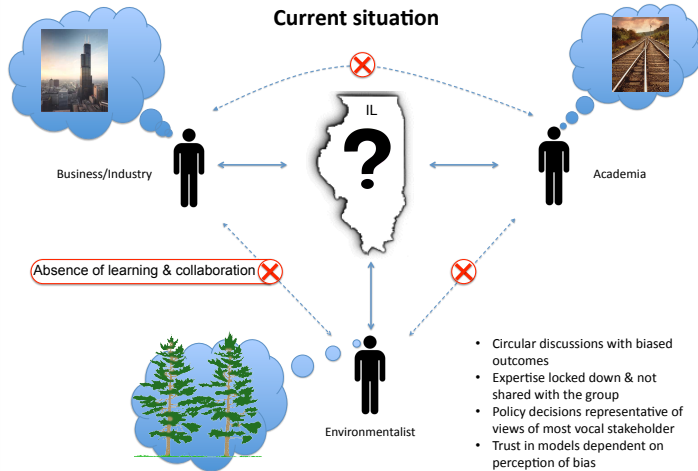


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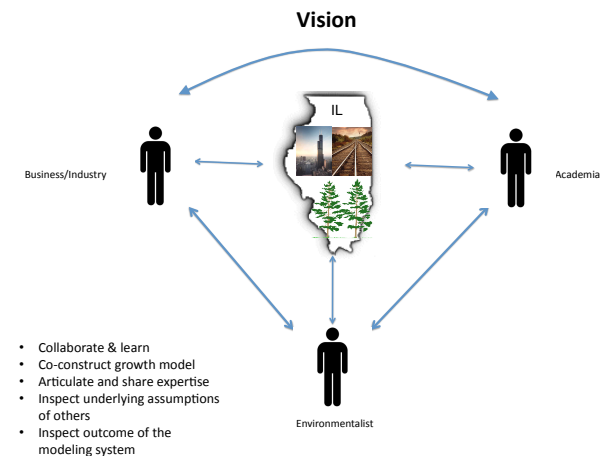
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Study

1. Observed one public meeting session to understand dynamics
2. Conducted structured interviews with business, county government, municipality & academia stakeholders
3. Analyzed data with a focus on the means, content, and context of presenting models to stakeholders



Preliminary findings: A case for Agent Based Models

Means – Tools & processes to support stakeholder participation

- Current situation**
- Decision Support Systems exist BUT
 - designed for a specific case
 - limited reusability
 - require extensive data & resources to build
 - Commercial modeling / simulation software tools exist BUT
 - Black-box
 - Mask the system complexity
 - Encourages confirmation bias

"I feel it [software] was biased... I looked at the results and said it's not worth something to look at. This was a conclusion that somebody had and they wrote a survey and study to come to that conclusion."

- Intended Outcome**
- Grounding conversations in a shared artifact
 - Allow stakeholders to learn from peers
 - Build a more nuanced mental model of the policies & their effects

"No I don't think [anonymous contributions are] a good idea. There are many groups represented by the planning group members and they bring up many viewpoints and it's important that those viewpoints be acknowledged as belonging to that particular group."

- Design Guidelines**
- Allow inspection of system's rules & modify/create rules for the agent.
 - Maximize participation & sharing of ideas
 - "Audience Response System" – style form factor
 - Connecting ideas & actions to stakeholders

Context – Where, how long, and how often?

- Current situation**
- Classroom based Agent Based Models exist BUT
 - require extended interaction with the model over several weeks
 - software takes center-stage
 - too much dependence of interaction with the system
 - Stakeholders willing to use a computer-based tool for the entire duration of the meeting if it did not distract them from interacting
 - Stakeholders meet once every month for 3 hours but are prepared to interact with other stakeholders outside meeting space.

"[It] should not distract from meeting – interaction should be live and not dependent on software."

- Intended Outcome**
- Enrich the meeting experience & improve quality of decisions by avoiding circular discussions.
 - Facilitating participation & interaction between stakeholders beyond the meeting space

"If the software is a facilitation tool, it can be used to run the meeting,"

- Design Guidelines**
- Use of software to facilitate articulation of viewpoint
 - Use of model as a persistent artifact
 - Providing multiple access points to the model (Anytime/Anywhere access)

Content – What is to be simulated?

- Current situation**
- Classroom-based Agent Based Models exist BUT
 - requires students to build entire systems so that they have an understanding of all the agents in the system
 - Stakeholders show lack of interest & understanding beyond issues which affect them directly
 - Stakeholders have difficulty in understanding how actions compound over time

"[We] have maintained wetlands, even created wetlands [and] open space, have ... water facilities that meet & exceed the EPA standards... [The cities don't do these things] and yet we keep hearing [from them and environmentalists] that [we] need to have growth control, slow down or stop to avoid urban sprawl."

- Intended Outcome**
- Making stakeholders aware that their interests intersect with another group
 - Highlighting when the decision was formalized, what model elements informed the decision, effect of that decision on dependent elements, etc.

"I never speak up during the meeting... [the local government] viewpoint is well represented and I don't think there are major issues for us as there are for the environment and business."

- Design Guidelines**
- Emphasize interconnectedness between model elements
 - Making trajectory of decision path evident