Sustainability Workshop Group

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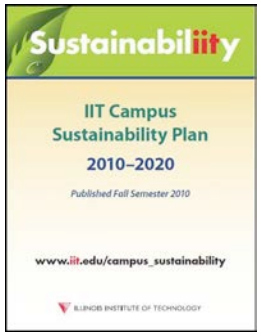
Sustainability?

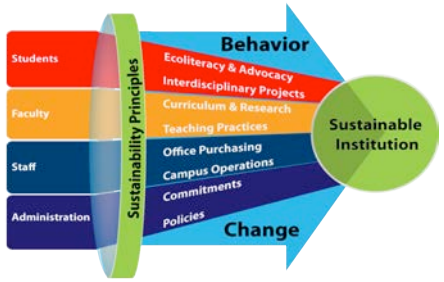
- From our personal experiences to a bottom-up approach

- Our vision
  - We are getting to a Cyber-Physical System (CPS)-based world
  - Small-scale solutions are there
  - They might be very wrong, they might be defined as islands
  - We cannot ignore them

(MEE compliant) Scenarios

- SmartCampus
  - Heat Regulation
  - Sunscreen
  - Power conservation
  - Power, water…
- Try to google « sustainable campus »…





Issues

- Site wise:
  - Silos of sustainable regulations
  - Underlying models are not explicit
  - Context of usage & constraints are also not explicit (we don't know what we don't know)

- Sustainable dimension wise:
  - No cross-fertilization
  - (Small to medium) failures are not « advertized »
  - So they cannot be analyzed nor improved

Emerging challenges

- Making the loops more effective
  - Model is explicit (context, constraints)
  - Failures & improvements are available
- Making the loops composable
  - Reason on what's compatible with what

Enabling Technologies from the Inside

- How to apply existing models from other disciplines into our framework?
  - Simulation to Implementation
  - Openness
- Big data
  - Software infrastructure to manage data size
- Ultra-Large CPS
  - Architectural issues

Enabling Technologies from the Outside

- How to apply existing models from other disciplines into our framework?
  - « fractal » interpretation of the model
  - Ease knowledge transfer
  - Security & privacy for open data

- Big data
  - How do you know the relevance of data?
  - How do you display the model based on these data?