

Transformative Governance for Global Change

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Sustainability is a social challenge

We are not destroying the environment, we are rendering it uninhabitable

We are destroying our future as a species

AND WE KNOW IT!

Society seems convinced that something needs to be done

Scientists are generating ideas about what can be done

Governments wish to do something, but not many are willing

The current crisis offers an opportunity for change

Yet little happens ...

WHY?

Convergence of Recent Governance Paradigms

Anticipatory Governance

- Guston, 2008

Reflexive Governance

- Voss et al., 2007

Earth System Governance

- Biermann, 2007

Governance for Sustainable Development

- van Zeijl-Rozema et al., 2008

Risk Governance

- Roco, 2008

Key Features of Transformative Governance

Anticipatory Competence

- Inter-generational equity and legacy

Systems Thinking Competence

- Feedbacks, non-linearity; cross sectors/scales; cascading effects

Normative Competence

- Values, goals; dissent, conflict, power; balance of interests

Transformative Competence

- Between innovation and sustainability

Collaborative Competence

- Negotiations, mediation, coordination among multiple actors

The Reality of Our Shortcomings

Path dependency

- Bureaucratic fossilization of disciplinary structures

Power isolates and corrupts

- Loss of contact between government, science and society

Fragmented vision

- Insufficient for evaluation of multidimensional choices in complex systems

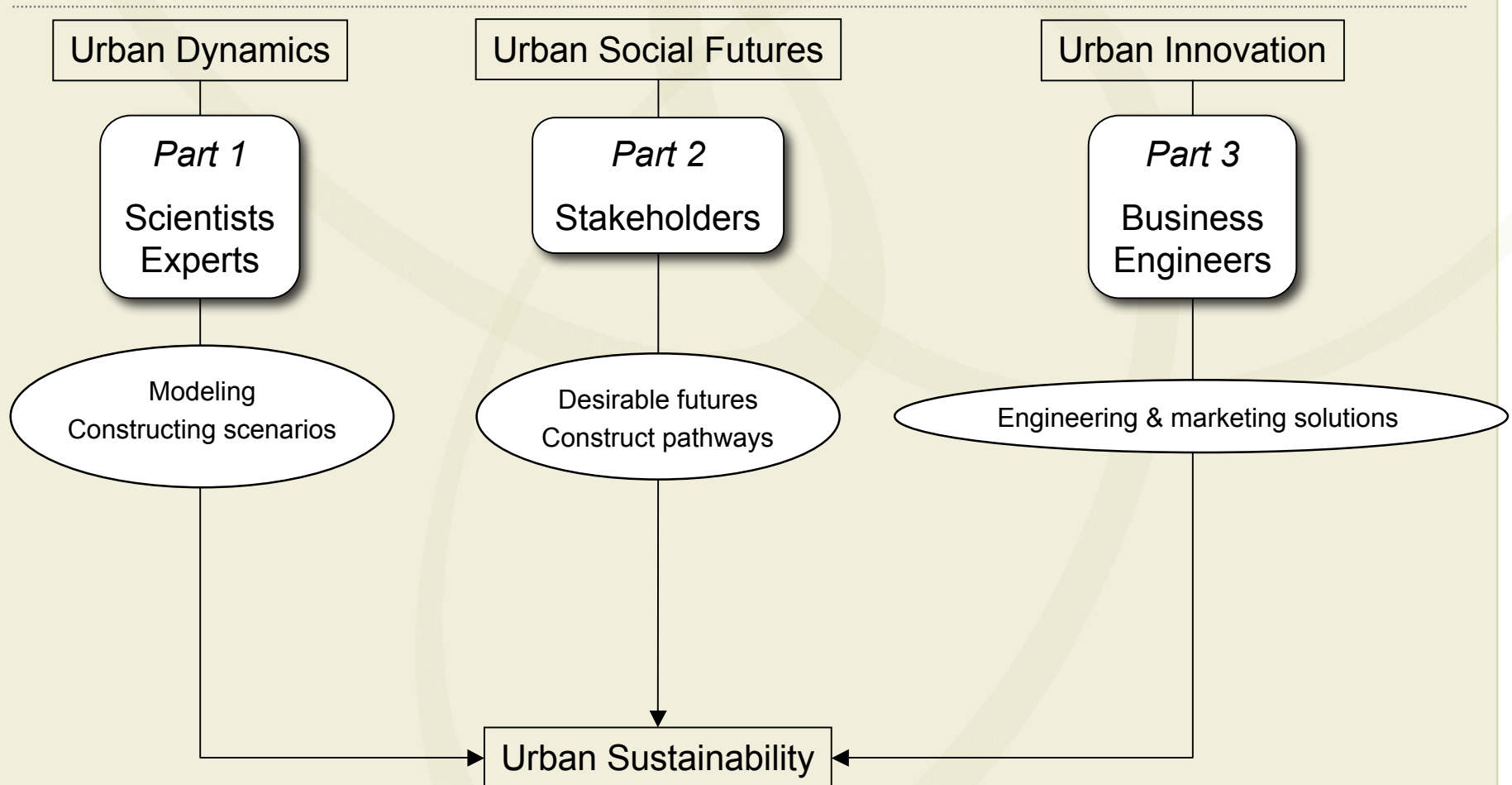
Short time horizon

- Limited knowledge of the system; lack of strategy (re-active rather than pro-active)

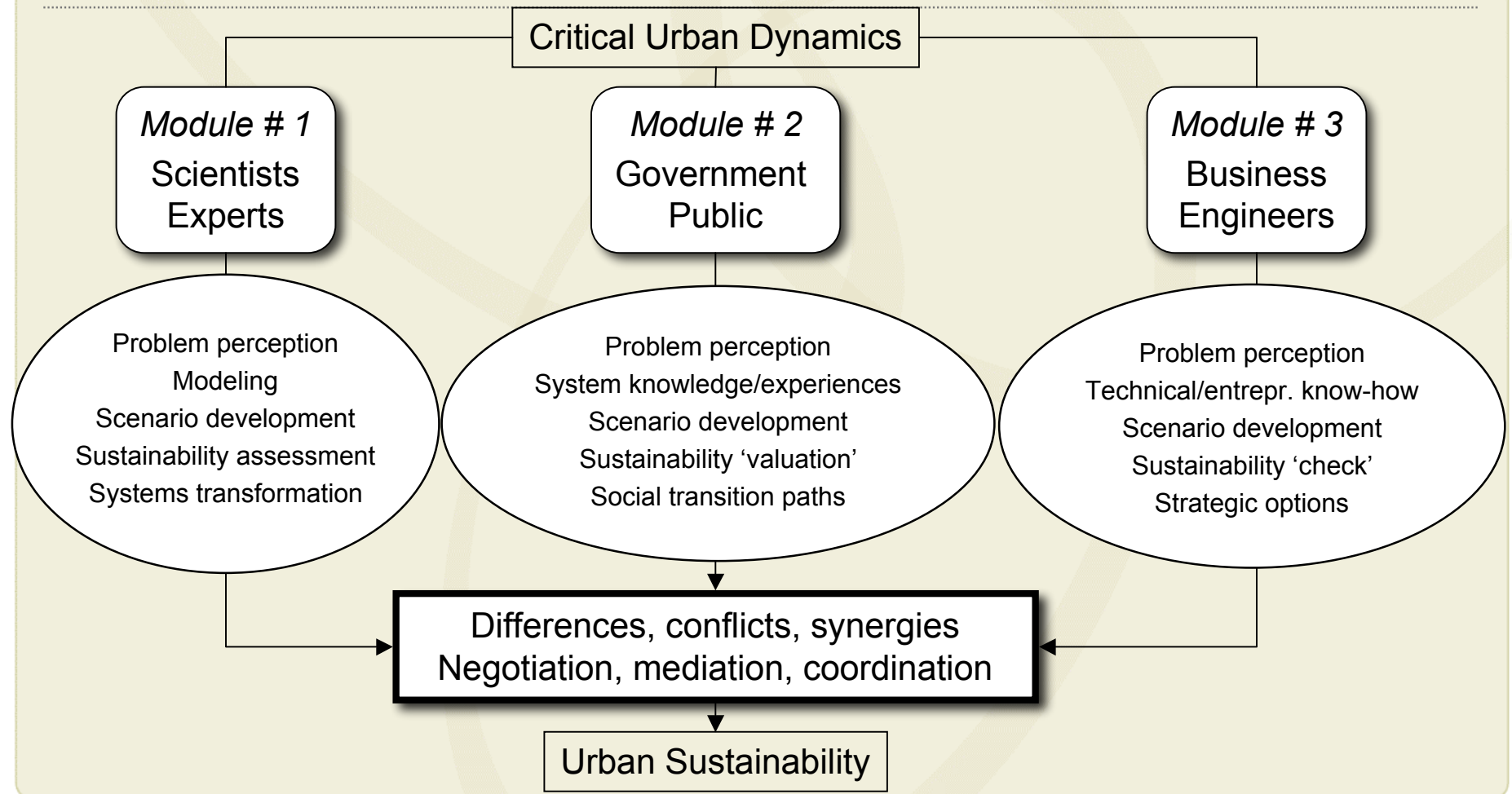
Example – **Research:** Project '*Alpha*'

- NSF Program
- 16 Co-PIs from various academic institutes
- Budget: more than \$20 Mio.
- Goal: “seeks to help chart paths along which society’s *consumption of resources* and *generation of wastes* can be brought into balance with the *carrying capacity of the environment*”

Project *Alpha* – The *Eclectic* Version



Project *Alpha* – The *Transformative* Version



Conclusions

To attain sustainability, we must simultaneously:

- Learn from, and educate all stakeholders
- Transcend boundaries between scientists, government, engineers, business, the wider public
- Develop a long-term strategy and step-by step implementation measures
- Transform scientific practice from question-driven to solution-oriented
- Promote true intellectual fusion between all concerned