Urban Development Challenges for GSS

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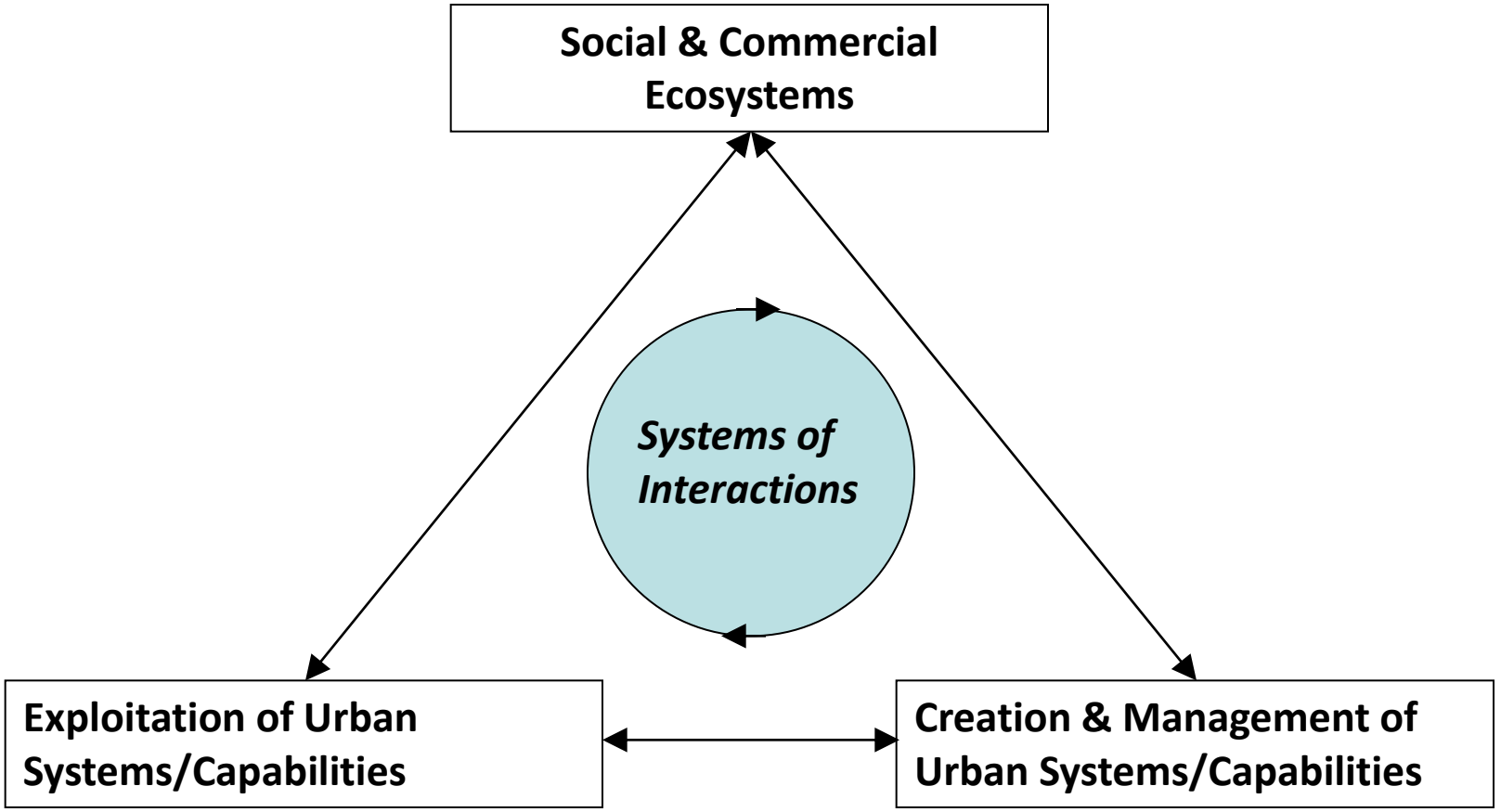
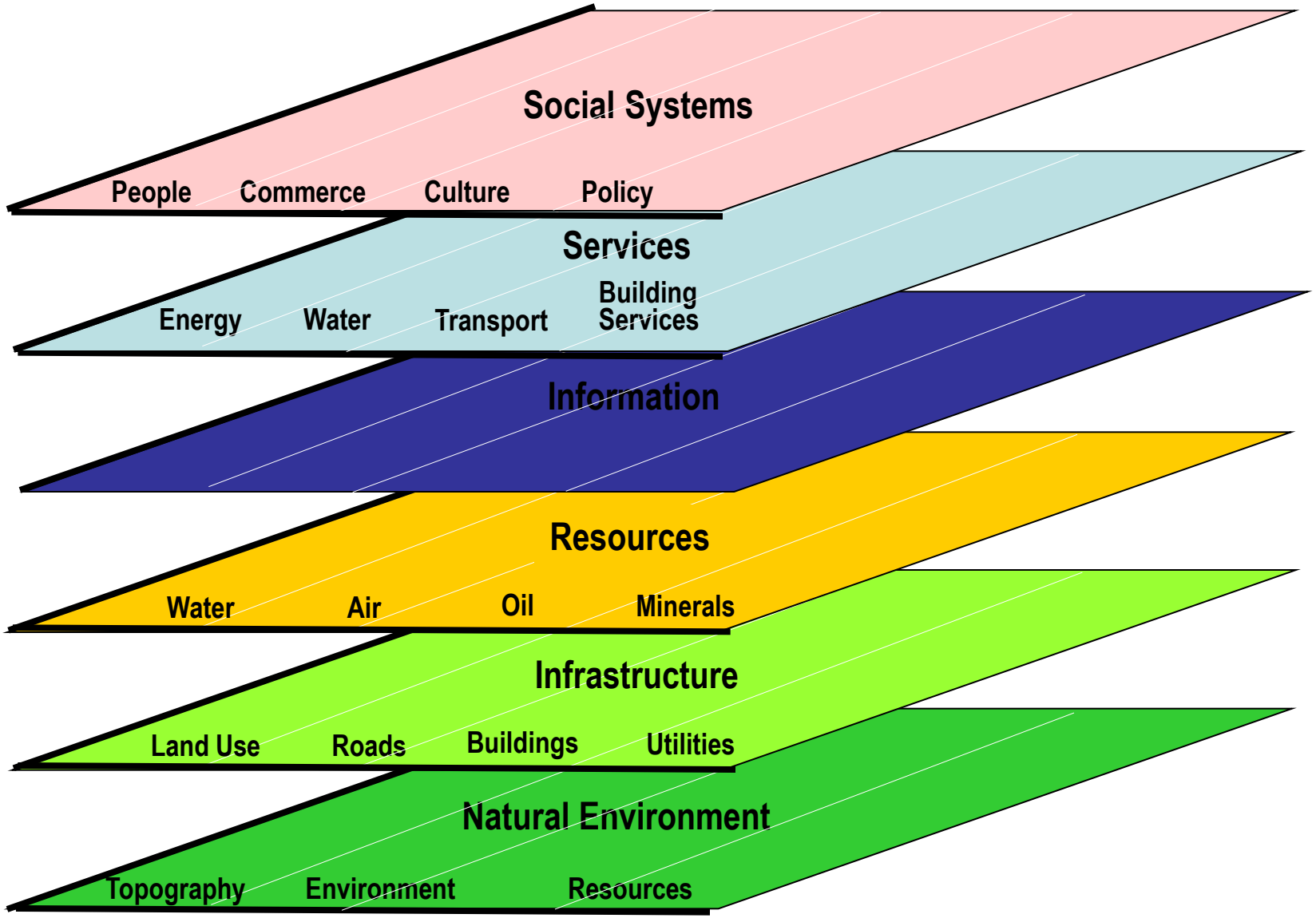
A People-Centric Point of View

The most important systems in a city are the ways in which people live their lives through interactions with one another and with the capabilities of the city.



Urban Systems are the composition of services and capabilities derived from the natural and built environments that we model as a large number of GIS layers



GSS Challenges

1. Formal representation of Urban Systems
   - Structures of components
   - Interactions (P2P, P2S, S2P, S2S)
   - Inter-dependencies (P<-S, S<-S)
2. Spatial, Temporal, and Domain Integration
   - "Single View of the Truth"
   - What real-world problems are we trying to solve?
3. The Need for Flower Collecting
   - Patterns & Principles to simplify model building
4. Scientific Modeling and Practical Modeling
   - Understanding and insight
   - Support for decision-making
   - Rule of one hand – tipping points
5. Resource consumption & production
   - Natural and Man-Made resources
   - By-products, waste
   - Economic outcomes
6. View of "what is the City trying to do?"
   - "Real-time" sensing of interactions, resource consumption & production
   - Match between intention and capabilities
   - City as a Design Problem – How well does it work?
7. Transformation of how the city works
   - Transition from Industrial Age to Information Age
   - Planning for One