

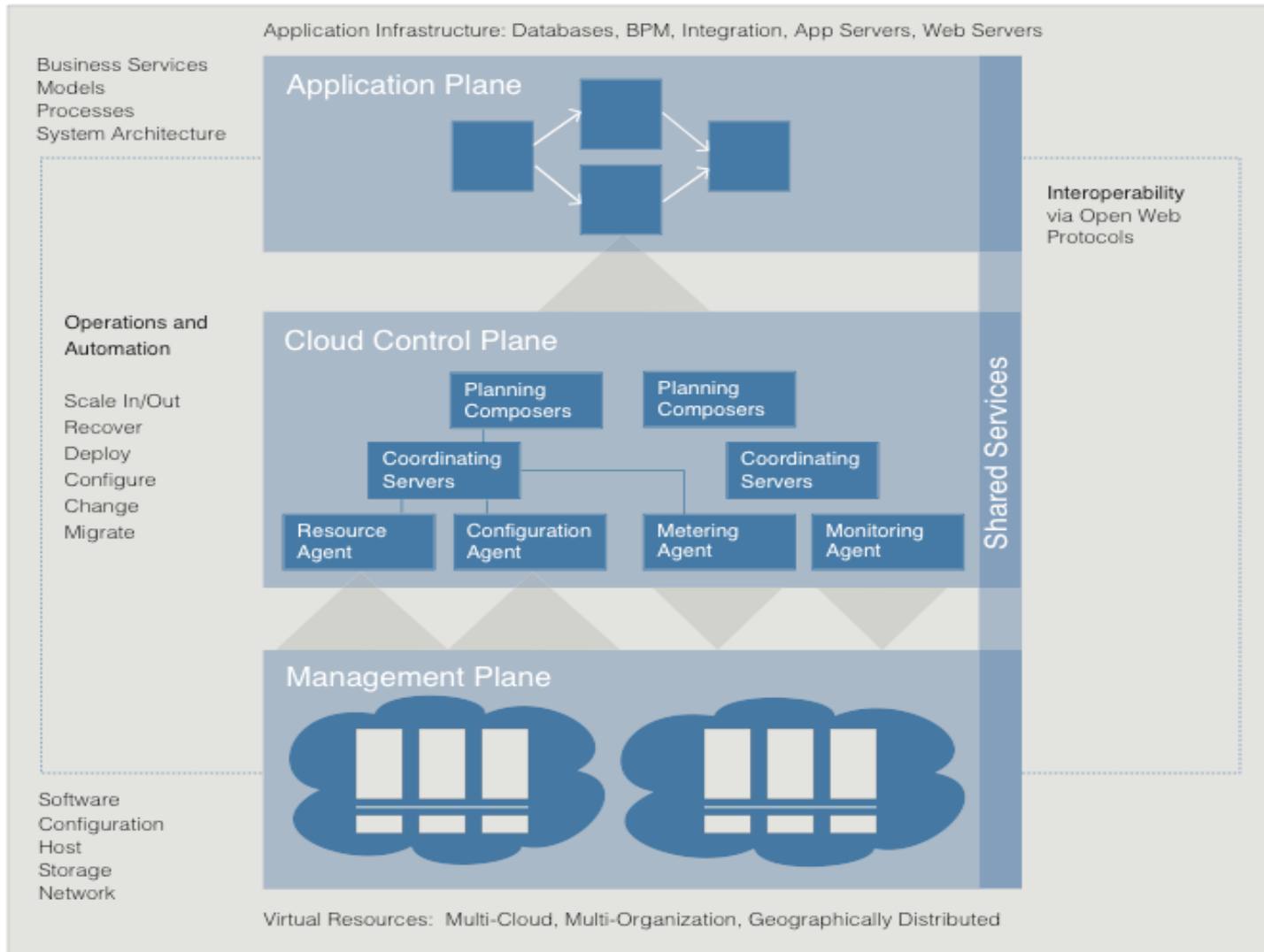
**ELASTRA**

**Cloud Interop Roadmaps Workshop**  
Cloud Portability Through Application and  
Capability Modeling

*Stuart Charlton, CTO*

*December, 2009*

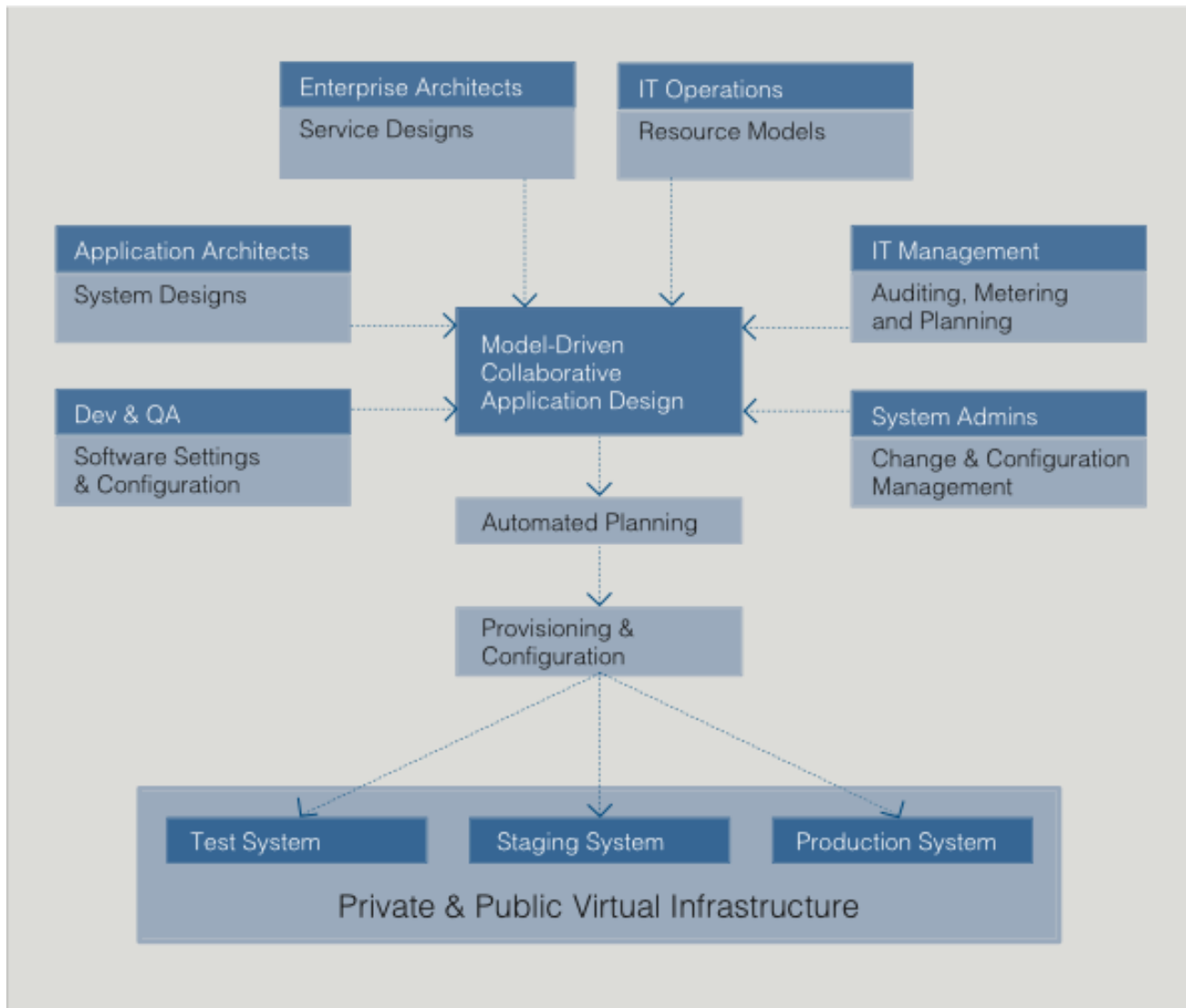
# A view of an open, distributed cloud



# Claims

- **Users are concerned with the following scenarios** in increasing order of difficulty (anecdotally)
  - » **Reducing lock-in** on particular cloud or virt. providers by standardizing definitions, semantics, and APIs
  - » **Migration of full application configurations** across clouds
  - » **Migration of live deployments** across heterogeneous clouds (with bounded downtime)
- **Migration (portability) is unachievable** solely at the management plane
- **Interoperability standards** are likely only achievable (for now) in the management plane

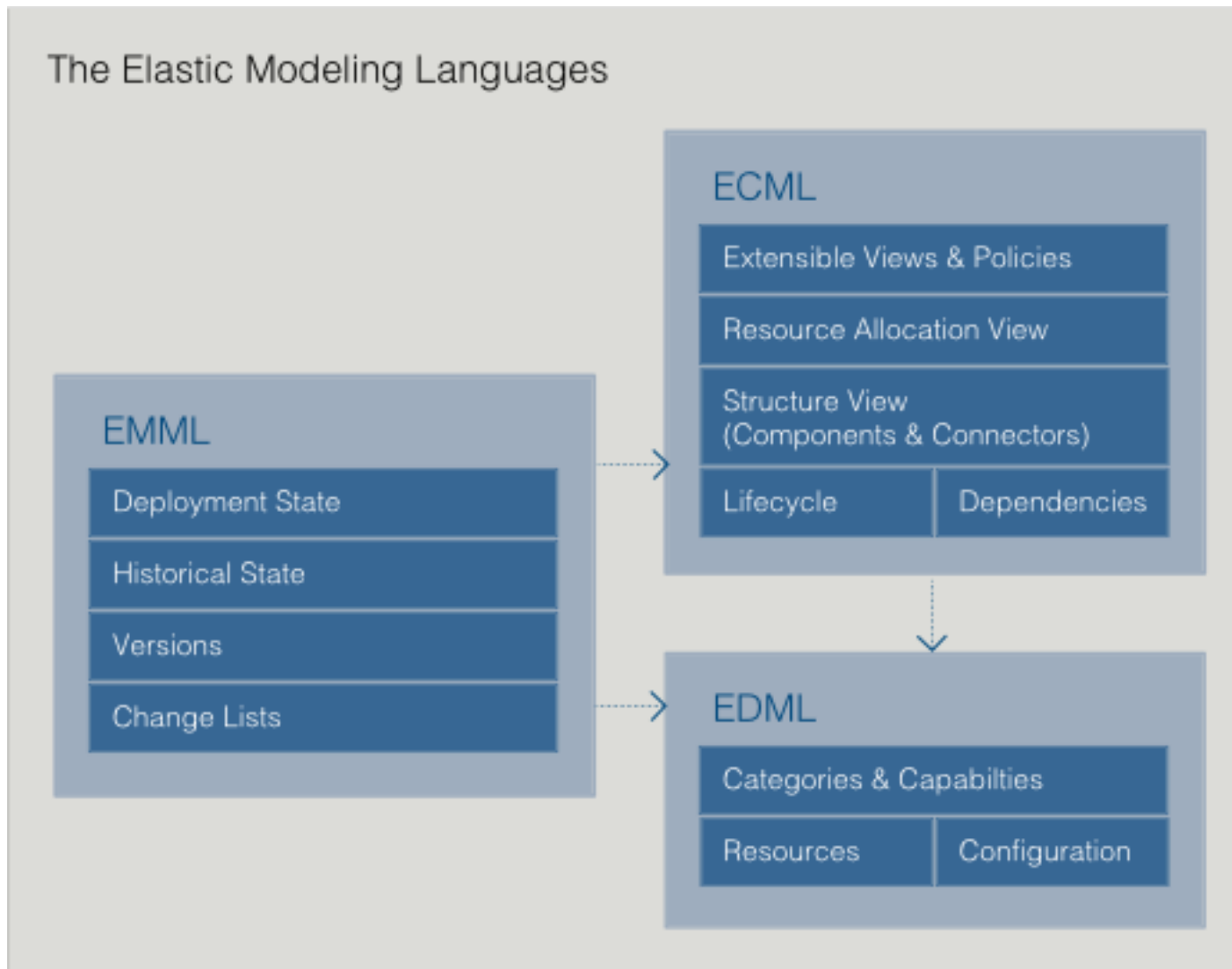
# Configurations are a multi-stakeholder problem



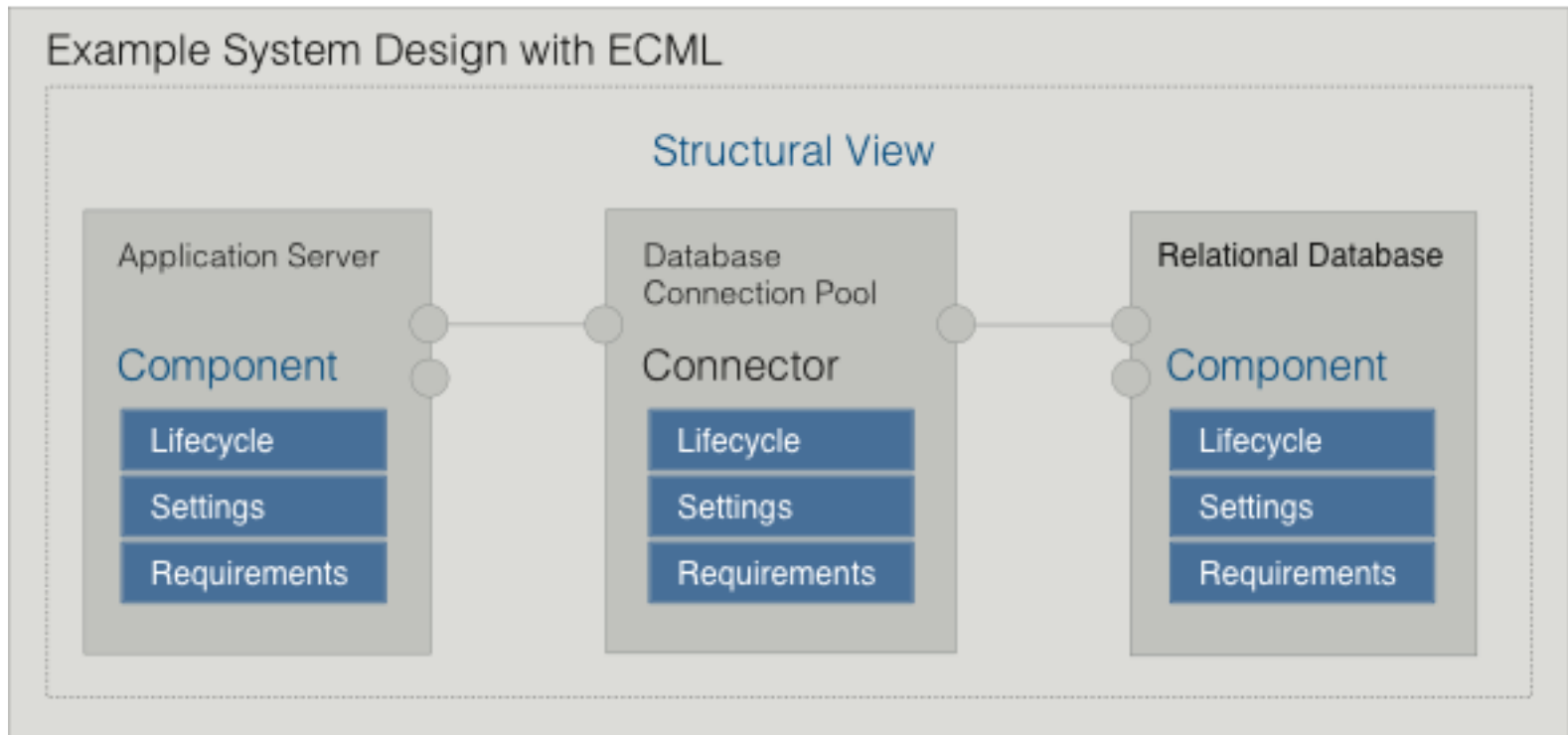
# Suggested focus of interoperability standards

- **Standardized semantics** of infrastructure capabilities
  - » E.g. CIM Profiles for Resource Allocation, Allocation Capabilities, Memory Resource, etc.
- **Standardized exchangeable documents** describing infrastructure capabilities
  - » CPU architecture, sockets, cores
  - » Memory quantity, Disk quantity
  - » Symbolic capabilities (e.g. is this storage local or network?)
  - » VLAN topology & constraints
- **Validation & Brokerage** of compatible images to infrastructure
  - » E.g. Matching / Comparing / Orchestrating an OVF's Virtual Hardware Section as a start
  - » ....But how much can we realistically shove into OVF?

# Elastra's Current Approach



# Elastra's Current Approach



# Four Desirable Characteristics

- **Distributed, Autonomous Control**
  - » Ownership & stewardship of descriptions of systems are normally decentralized
- **Open Document-Exchange**
  - » The trouble with APIs
    - ▶ comparing desired vs. current state, exploring hypothetical scenarios
  - » Today's common attempts: model marts, CMDBs
- **Hyperlinked Web Documents**
  - » No monolithic documents / deployment descriptors
- **Logical Modeling**
  - » Agreed upon elements shouldn't just be "tag soup", they should be grounded
  - » Visual notations & translations (e.g. UML profiles) should be available so a ***platform-specific*** deployment model can correspond to a ***platform-independent*** service model

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Thank You

*December, 2009*