Visualizing, Justifying, Managing Software Architecture Modernization

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To SOA in Healthcare

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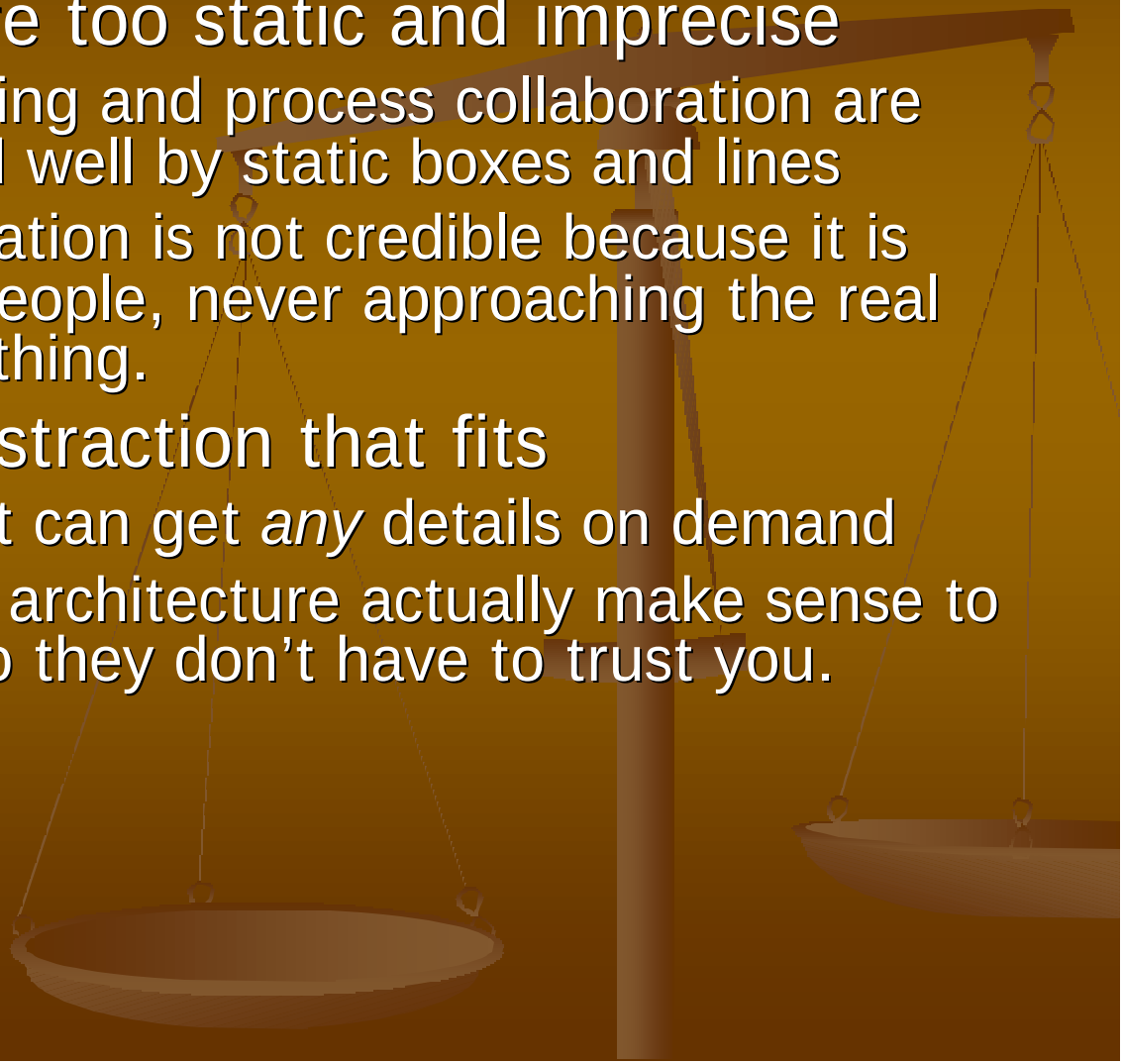
When Presenting HIT Architecture to CxOs

When presenting a systems solution to CxOs:Visio and PowerPoint are too static and imprecise

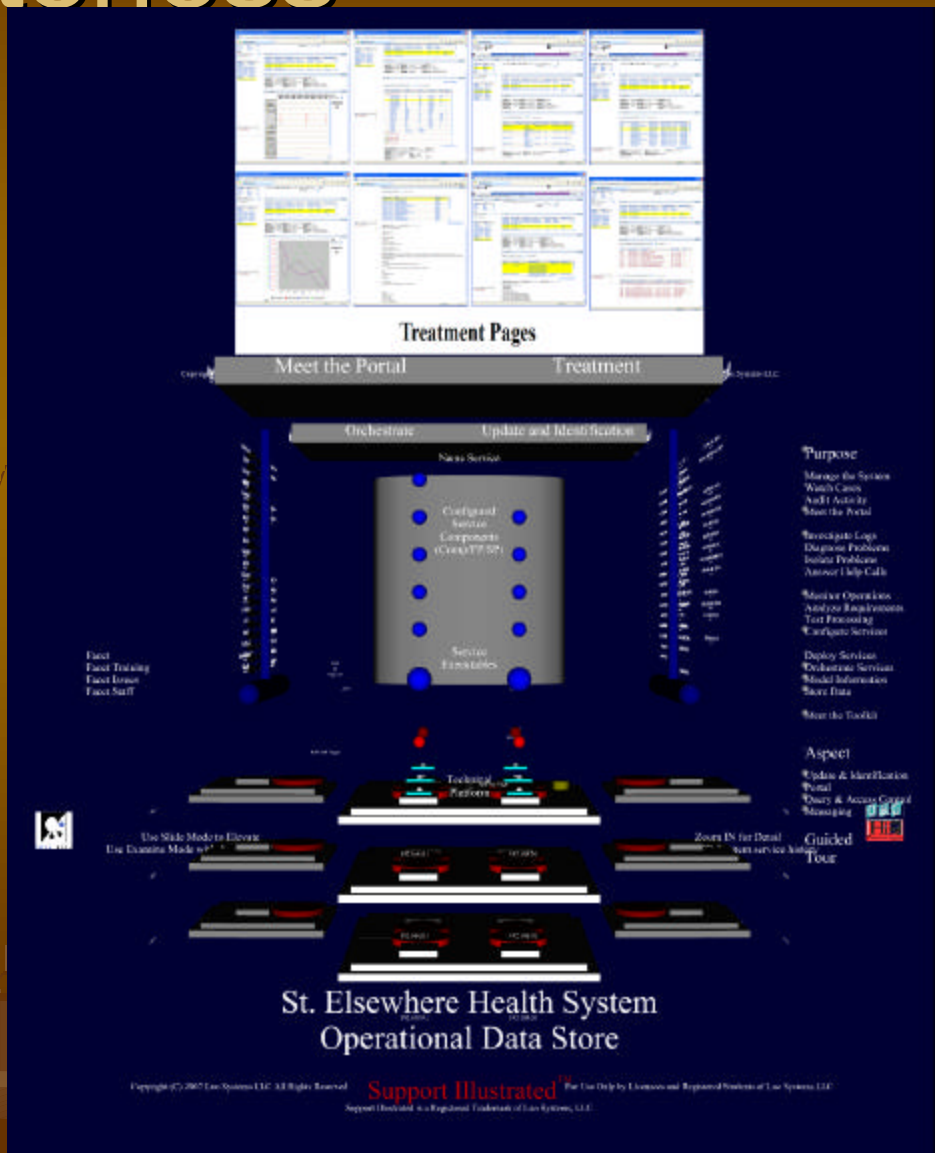
- Innovations in timing and process collaboration are not communicated well by static boxes and lines
- Presentation animation is not credible because it is created by sales people, never approaching the real complexity of the thing.

- Need a level of abstraction that fits
  - Very high level but can get *any* details on demand
  - Makes technology architecture actually make sense to business people so they don't have to trust you.



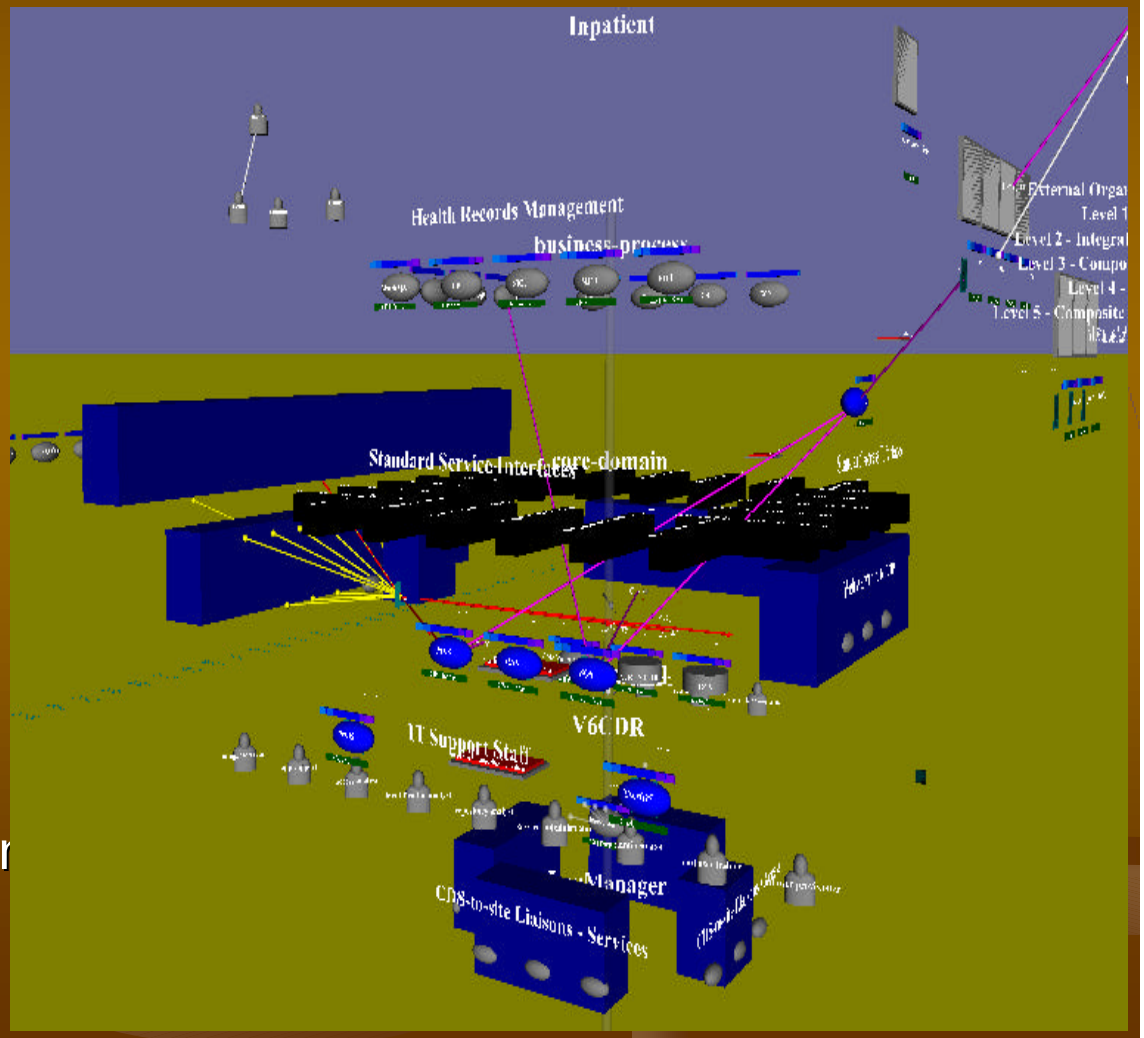
Even from One Facing 3D Adds Concreteness

- Nearly-Tangible
- Clear “Stacks” of dependencies
- To Zoom in or pan from this one direction has some usefulness
- Simply put the details in small fonts so the “Macro” view still works



But Immersiveness makes a World of Difference

- Not bound by the physics of the real world.
- Visit any component from many vantage points never losing context
- Objects can be invisible from one side only
- Travel through things and teleport
- Can be generated from XML models and configurations
- Navigation not like a flight simulator. “Can” the viewpoi sequence if you want to.
- Hit home at any time.



The Open Group Service Integration Maturity Model

Level	Description	Comments
Dynamically Reconfigurable Services	Compositing of Local and remote **dynamic service selection and dispatching**. Invoke terminology mapping if needed, of the right versions.	Choose the right versions of the right services at run-time.
Virtualized Services	All business functionality is invoked through a broad **façade** – an abstract, stable, set of services that doesn't change as apps, components, and platforms come and go.	End users see business as usual even during massive overhauls under the façade.
Composite Services	**Assemble** components and control them according to described (not written) **workflows**.	BPMN – graph and go, BPEL engines
Service	Components invocable via ubiquitous protocols; **shared infrastructure** for security, transformation, service management.	WSDL, Net, J2EE, CORBA as infrastructure, centralized administration.
Componentized	Sharable, **replaceable functionalities** are factored out of the apps, with well-defined interfaces	HL7 V3 Roles, IHE Actors as units of sharable and replaceable functionality
Integrated	Data **Replication**, e.g. HL7 2.x	Poorly standardized data, disjoint processes
Silos	Standalone Apps. **Phone skills are a must**.	Before your time ...?

Visualizing OSIMM Levels
Context, Baseline, Target, Migration Path

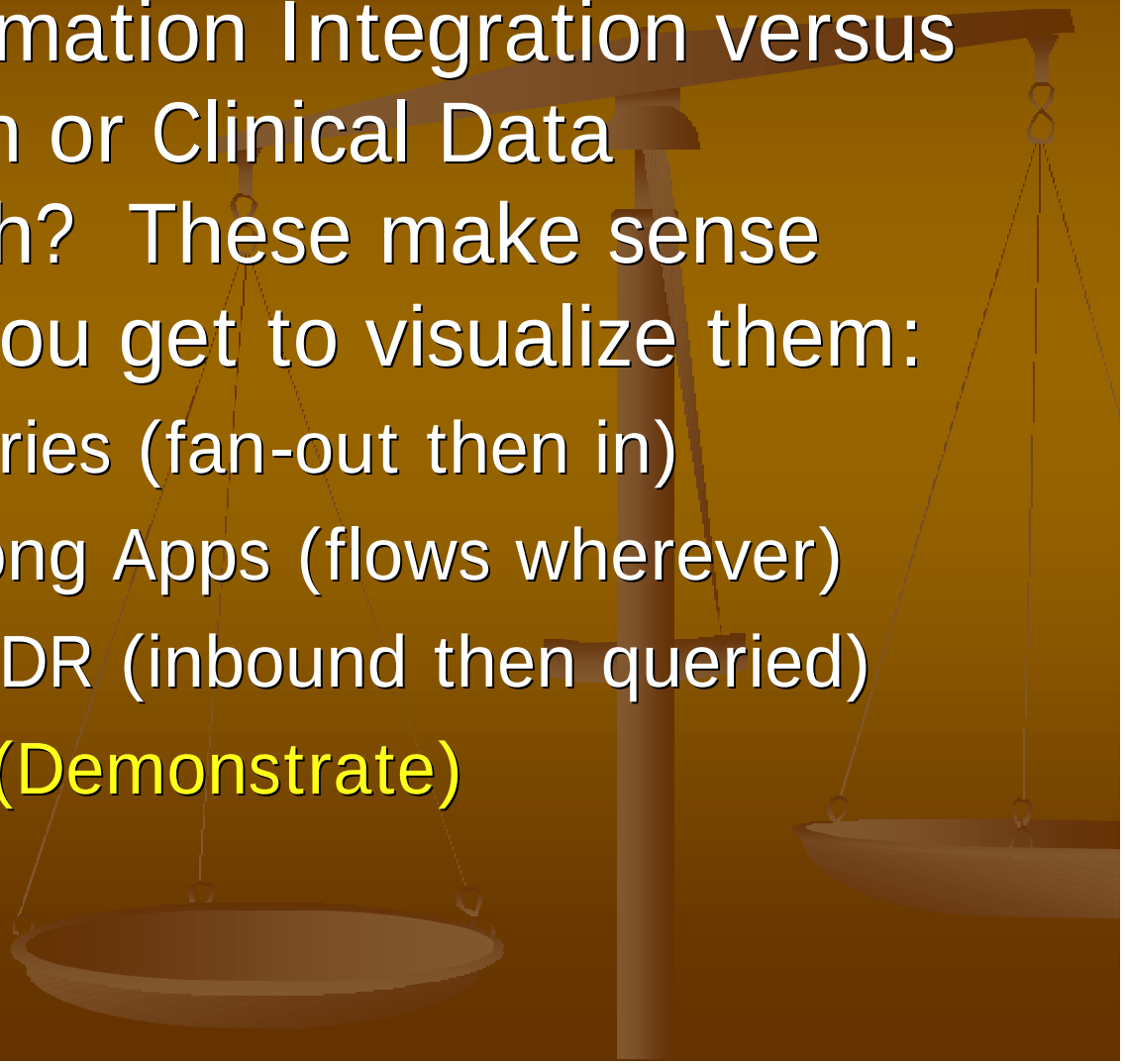
- The 3D layout reflects the target level's key patterns and the facings accommodate the major perspectives of interest for your audiences.
- Progressively Materialize your configuration, pointing out key features and. Stay at the "macro" vantage points. Zoom in or drill down only to the level of detail they need.
- Show alternative solutions and timelines with staffing implications
- The center cylinder and lower levels get built out with infrastructure while the first floor gets common components

(Demonstrate)

Making Complex Things Very Simple

- Enterprise Information Integration versus Data Integration or Clinical Data Repository - Huh? These make sense immediately if you get to visualize them:
  - Distributed Queries (fan-out then in)
  - Replication among Apps (flows wherever)
  - Replication to CDR (inbound then queried)

(Demonstrate)



Your Migration Strategy is Approved Now You Need Blueprints for Bids

- Abstract, Coarse-Grained Architectural Building Blocks (ABBs) need to be spec'd out with required functionality and interfaces
- Compliant Products or Implementations need to be identified and evaluated
- All this needs to be unequivocal so vendors can't fleece you and bidding is fair
- Bids include their "binding" solution models
  - When you swap their tiers into place, they are responsive if they geometrically coincide. Gaps will be obvious
  - Bid models are contractually binding

The Accountability extends past the Award!

- Allocate Facings - North South East West
  - CIO's global model allocates one facing per Implementation Team (fronted, integration, services, canonical data, infrastructure below)
  - Team Leaders - Allocate one facing per Team member
  - Teleport from a global model to a team model
  - Surf from team model component to implementation artifacts
- Each party's facing then shows
  - Absolutely everything they are accountable for.
  - All specifications for the audiences needed level of detail
  - Who is waiting on them and who they wait for
  - What is actually in existence (not semi transparent)
  - ETA Timeliness for each component
- Status updates are then simply a walkthrough with drill-downs for trouble spots.

So What Must Be Materialized

- Interfacing roles and interactions of participants
- Animations of key protocols (interactions)
- Use Cases for each component (link to them)
- Skill sets of staff and users
- Enterprise canonical data models
- Platform and infrastructure alternatives
- Component service interface specifications
- Solution building blocks (SBBs) components
- Dependencies and Non-dependencies (swappables)
- Deadlines

(Demonstrate)

Presenting or Exploring: How to Navigate the Scene

- Select component display options
- Navigate in “modes” (look at, examine, slide)
- Surf to other resources including other scenes
- Swap Tier Sets in or out
- Facings, Predefined Viewpoints and Sequences
- Unfolding to Project Timelines and business
- Actually Going Inside a Component
- Passing through panels, entering components
- Select Phase (Plan, Implement, Test, Operate

(Demonstrate)

Conclusion

- Intellectual Manageability is a key maker or breaker of massive technology projects
- Visualization is the maker or breaker of intellectual manageability
- Animated immersive models are the ultimate visualization of complex systems
- This approach offers unprecedented
  - Communication of Architectural Plans
  - Accountability of bidders and builders

Contact Info

More Demonstration and Discussion as Time Permits

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