An Architecture Journey

Jeromy Carriere
Vice President, Architecture
Fidelity Investments

It begins

It begins

- Nortel
- Base skills as a developer
  - Methodology
  - Design
- No "architect" title; architects were just the most experienced technical guys around
- Architecture just becoming a broadly recognizable discipline
  - 1996 – Garlan and Shaw ("Software Architecture: Perspectives on an Emerging Discipline")
- Lesson: big systems are really hard to get right; thinking about "architecture stuff" up front is necessary for success
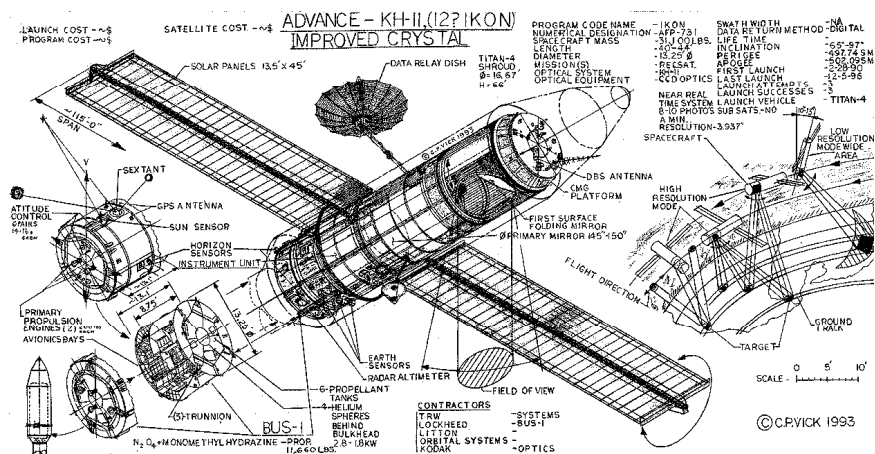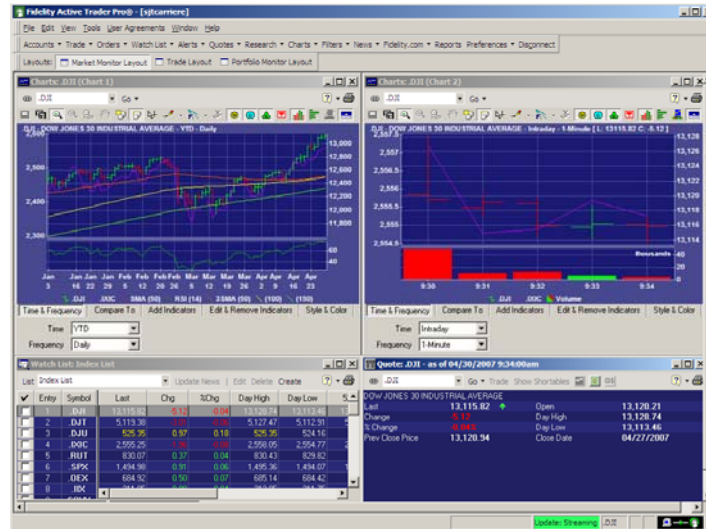
What does architecture mean for this system?

What does architecture mean for this system?


What does architecture mean for this system?

What does architecture mean for this system?

The turning point

▸ Lucky that it came early
▸ SEI – theory and breadth
▸ Architecture developing a set of well-defined practices and approaches
   ▸ Representation
   ▸ Analysis
   ▸ Reconstruction
▸ But still mostly theory
   ▸ With some notable exceptions
▸ Lesson: architecture is the bearer of quality; but remember that reasoning about architecture is reasoning about the *potential* of a system

Software Architecture Reconstruction
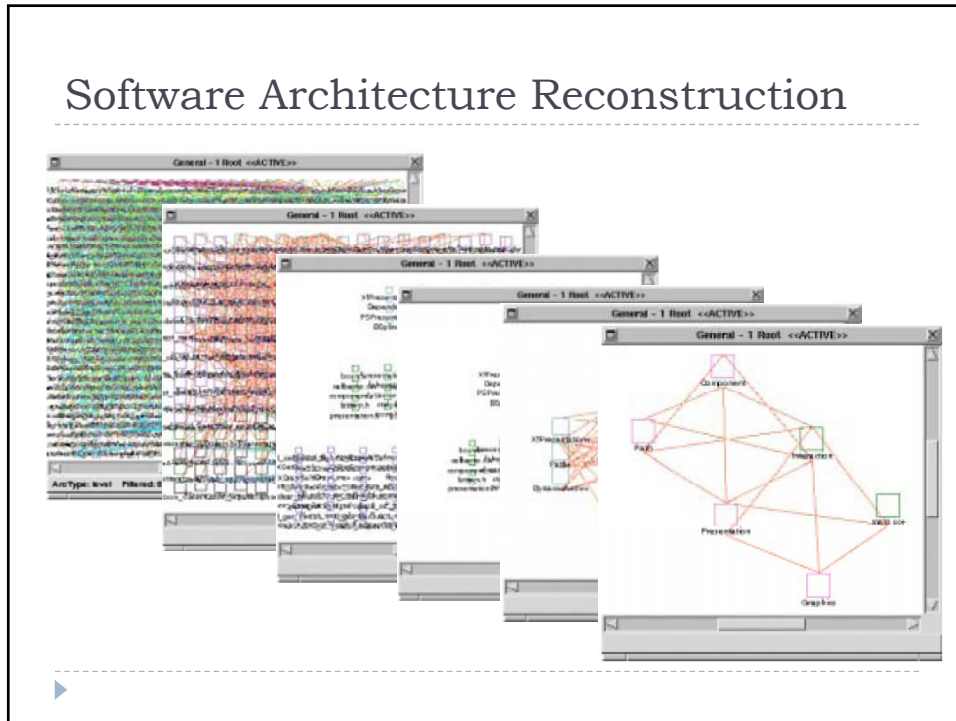
The bubble

- ▸ Quack.com; a quick history
  - ▸ Architecture quality from a business perspective
  - ▸ Putting theory into practice – perhaps in a surprising way
- ▸ What happened to architecture in these days?
  - ▸ So far as I can tell, not much; we were pretty distracted
- ▸ Lessons
  1. Architecture *does* matter (quality really does live there)
  2. Performance and flexibility really do trade off
  3. Reprioritizing architectural qualities is extremely risky
  4. Don't forget saleability!

Back to reality

- AOL → AOL/Time Warner → Time Warner
  - (More important to me at the time: AOL→AOL/TWX→TWX)
  - A complex organization, grown by M&A
- AOL Voicemail project
  - Extremely complex organizational dynamics
  - Solution architecture
- Lesson: autonomy of organizations and systems is paramount → SOA

TWX – June 2000 through January 2003

-

And to today

TWX - TIME WARNER INC - 10 Years - Weekly

Jun 2000, Jan 2001, Jul 2001, Jan 2002, Jul 2002, Jul 2002, Jan 2003, Jul 2003, Jan 2004, Jul 2004, Jan 2005, Jul 2005, Jan 2006, Jul 2006, Jan 2007

20%, 10%, 0%, -10%, -20%, -30%, -40%, -50%, -60%, -70%, -80%

TWX   .IXIC   .DJI

▸

Another bubble? (nope)

▸ Kinitos (since renamed NeoEdge Networks)
▸ CTO
  ▸ What's this job got to do with architecture? Maybe not much
▸ Lesson: if you don't know where you're going, you're not going to get there, regardless of how good your map is

The evil empire
What's so wrong with building software for money?

- Microsoft
  - "Architect Evangelist" (we tried changing it)
  - Is this an oxymoron?
- But useful
  - Architecting for business value
  - Domain depth
  - Microsoft Certified Architect Program
  - The beginning of LAAAM – the Lightweight Architecture Alternative Assessment Method
- Lesson: technology doesn't matter; it's about the people, the process, and the consistency of practice

The Microsoft Certified Architect Program

- Vision
  - "Create a high-bar certification program that, through a _peer board review process_, certifies individuals who can successfully produce an architecture that solves business problems"
- Targets practicing architects with verifiable experience
- Architects certify architects; mentoring program
- Not focused exclusively on technology; and not focused exclusively on Microsoft technology when considering technology
- Two tracks: Infrastructure Architect and Solution Architect
- Seven competencies
  1. Technical depth
  2. Technical breadth
  3. Leadership
  4. Strategy
  5. Organizational dynamics
  6. Process/lifecycle
  7. Communication

Microsoft Certified Architect Program
Roadmap
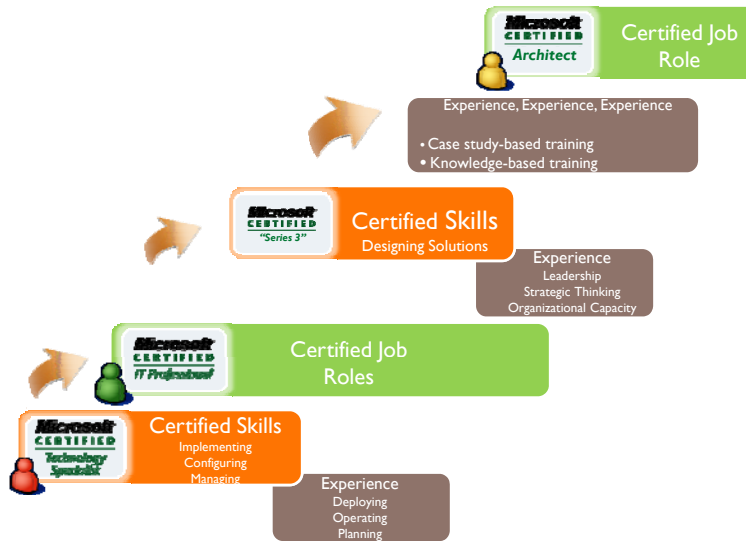
Putting it all together

- Fidelity Enterprise Systems Architecture
  - Governance
    - Architecture blueprints
    - "IT Roadmap"
    - Standard Technology Stacks
    - Must standardization be the black cloaked exterminator of innovation?
  - One size does not fit all. But what are the sizes?
- Consistency of practice
  - Applying certifications like MCAP and The Open Group ITAC
  - How many architects should there be in a 10,000 person federated IT organization building and maintaining 2500 applications?
- LAAAM in practice
- Lessons
  1. Architecture validation is critical, but hard to institutionalize, even in a process-oriented organization
  2. The deepest problems in IT are still communication and understanding
  3. Don't let "pragmatism" become a disguise for shortsightedness

The Lightweight Architecture Alternative Assessment Method (LAAAM)

- Derived from Architecture Tradeoff Analysis Method
  - Preserves foundational ideas of scenario-driven analysis, driven by a utility tree
- Intended to be applied in 1-1.5 days with a broad but small(ish) stakeholder group
  - Not intended to achieve the fidelity of analysis of ATAM
- Rather than evaluating individual architectural decisions, LAAAM assesses "strategies" – large-grained approaches to system architecture
- Assesses each strategy/scenario pair along three dimensions: fit, development cost, operations cost
- Uses hierarchical ranking (rank order centroid), not weighting