Rapid Application Development

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The Need for Speed

- Response to urgent new requirements (in the field software changes)
- Rapid pace of technology evolution
- Budget constraints - reduced cycle time
- BUT, continued need for high assurance
"Be Quick, But Don’t Rush"
- John Wooden

How can we differentiate efficiency (quickness) from sloppiness (rushing)?
- Efficiency of thought
- Efficiency of motion

Efficiency of Thought

Doing the hard thinking once, up front
- Domain engineering
- Clean, scaleable, product line architecture
- Well chosen, rich set of components/objects/COTS software
- Attention to performance issues
Efficiency of Motion

Technologies and tools that allow us to capitalize on the efficiency of thought
- Domain models
- Component definition, and characterization tools
- Component assembly tools
- Analysis tools (performance, correctness)

Examples of Good Technology Accelerators

- Weaves (Gorlick)
- Instrumented Connectors (Balzer, Wile)
- C2 (Taylor)
Weaves

- Data-flow architecture
- Solid, well-engineered infrastructure
- Graphical tool for component assembly
- Hides complex, yet powerful technologies (OO, C++, thread libraries)
- Solves complex problems once (concurrency, persistence, etc...)