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The Premier Software and Product Delivery Event

Software. Everyware.

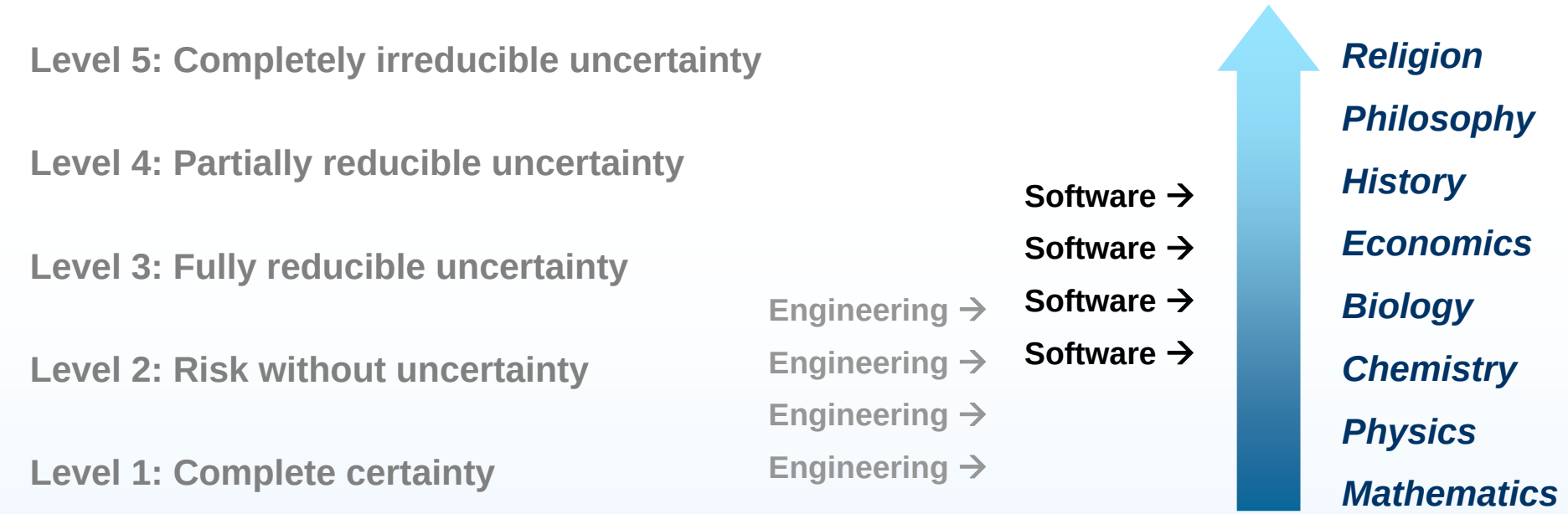
Measured Improvement in Software Economics

Walker Royce

Chief Software Economist

IBM Software, Rational

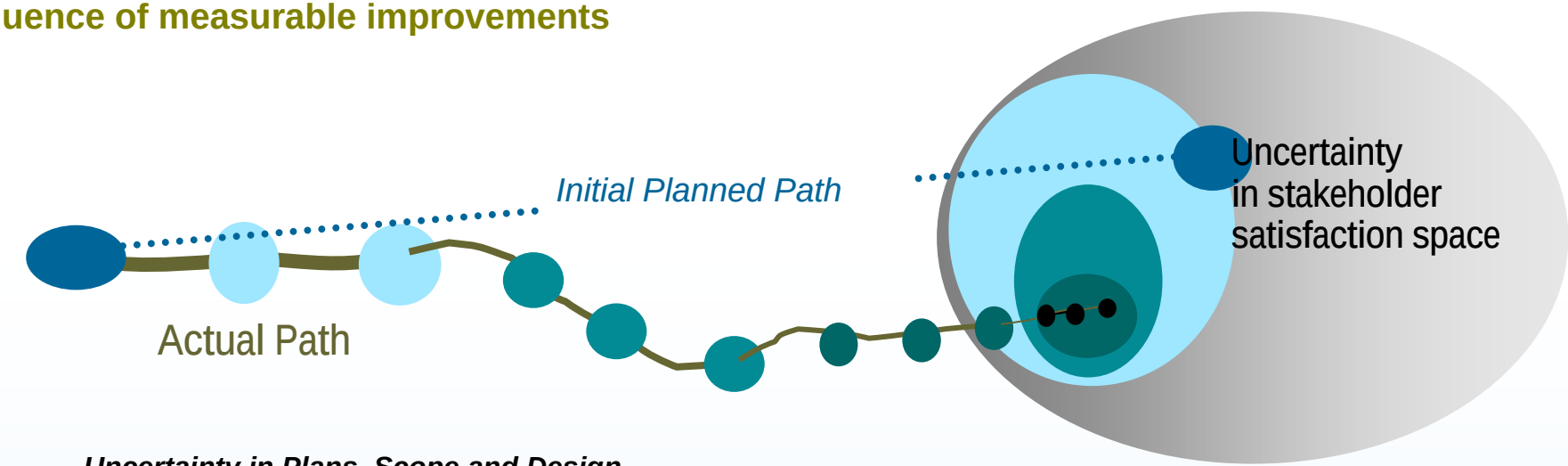
Software Delivery is an Economic Discipline



Lo, Andrew, and Mark Mueller. MIT Sloan School of Management, Moody's/NYU 6th Annual Credit Risk Conference, New York, March 2010.

Economic Governance: Measurement and Steering

Sequence of measurable improvements

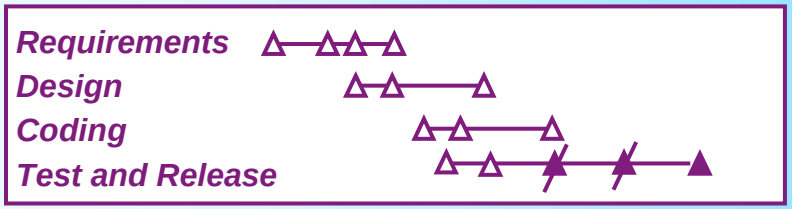
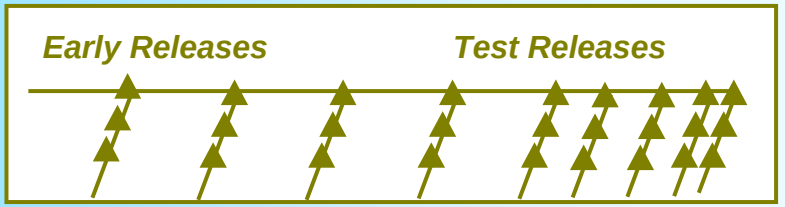
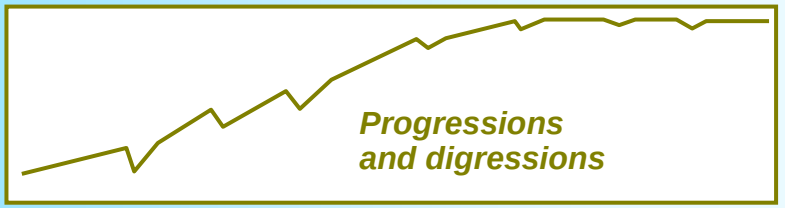
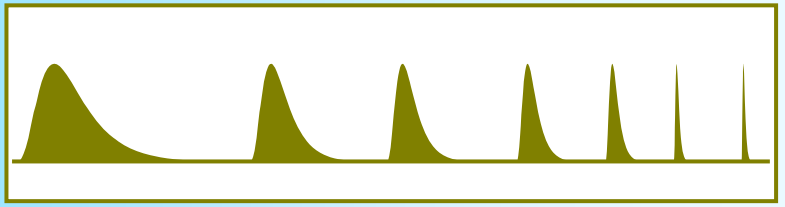


Managing uncertainty requires **MEASUREMENT** → *Measurement builds* **TRUST** → *Trust improves* **EFFICIENCY**

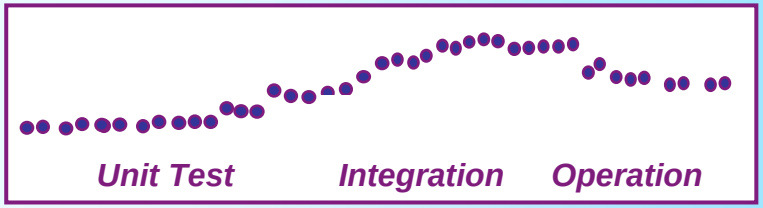
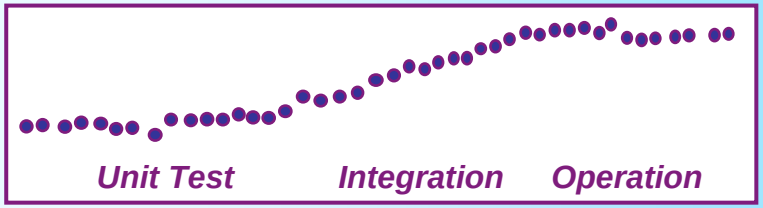
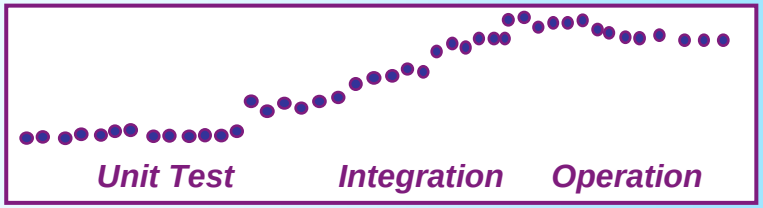
Pivotal Culture Shifts

Integrate	Collaborate	Optimize
Plans/management Plan for integration to precede unit testing	**Progress measures** Quantify progress trends from the integrated code and test base	**Quality measures** Quantify cost-of-change trends to demonstrate true agility
Avoid false precision in plans and requirements	**Don't** attack the easy things first	**Don't** rely on subjective and speculative measures

Measured Improvement:
Progress Econometrics

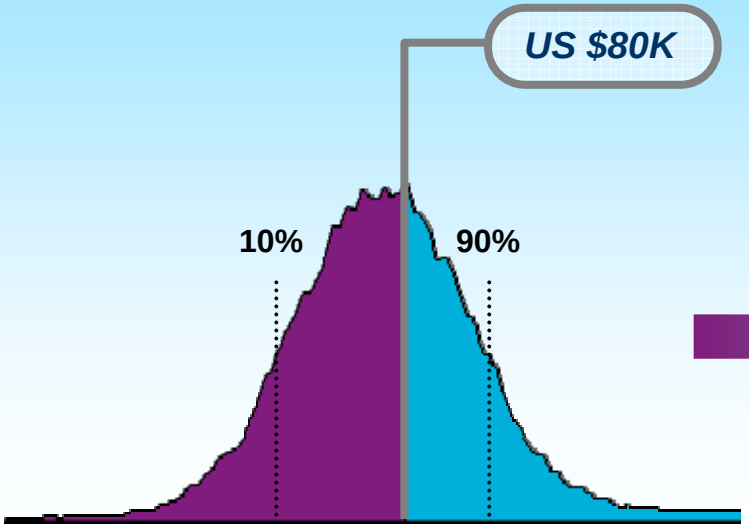
Conventional Engineering Governance		Modern Economic Governance
	**Planning Progress**	
	**Technical Progress**	
	**Economic Progress**	

Measured Improvement:
Quality Econometrics

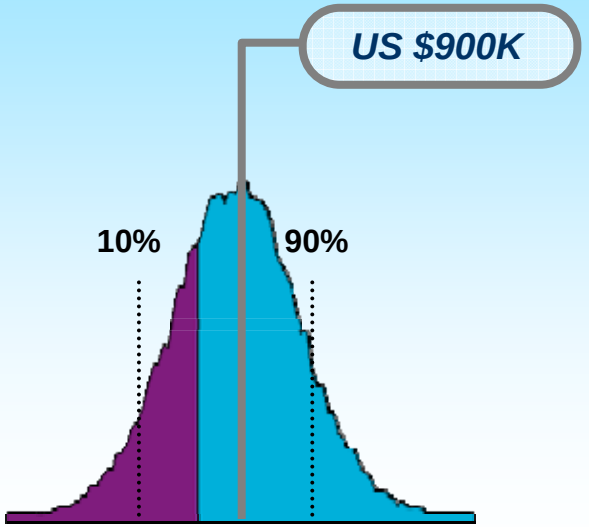
Conventional Engineering Governance		Modern Economic Governance
	**Maturity** *Defect Trend*	
	**Modularity** *Change Volume Trend*	
	**Adaptability** *Cost of Change Trend*	

Measured Improvement:
Quality Econometrics

Net Present Value using Conventional Governance



Net Present Value using Economic Governance



Improving Software Economics

VOLUME OF CODE
- Quality/Performance
- Integration first
- Manage scope
- Asset-based reuse

PROCESS
- Steering
- Good practices
- Maturity
- Domain knowledge

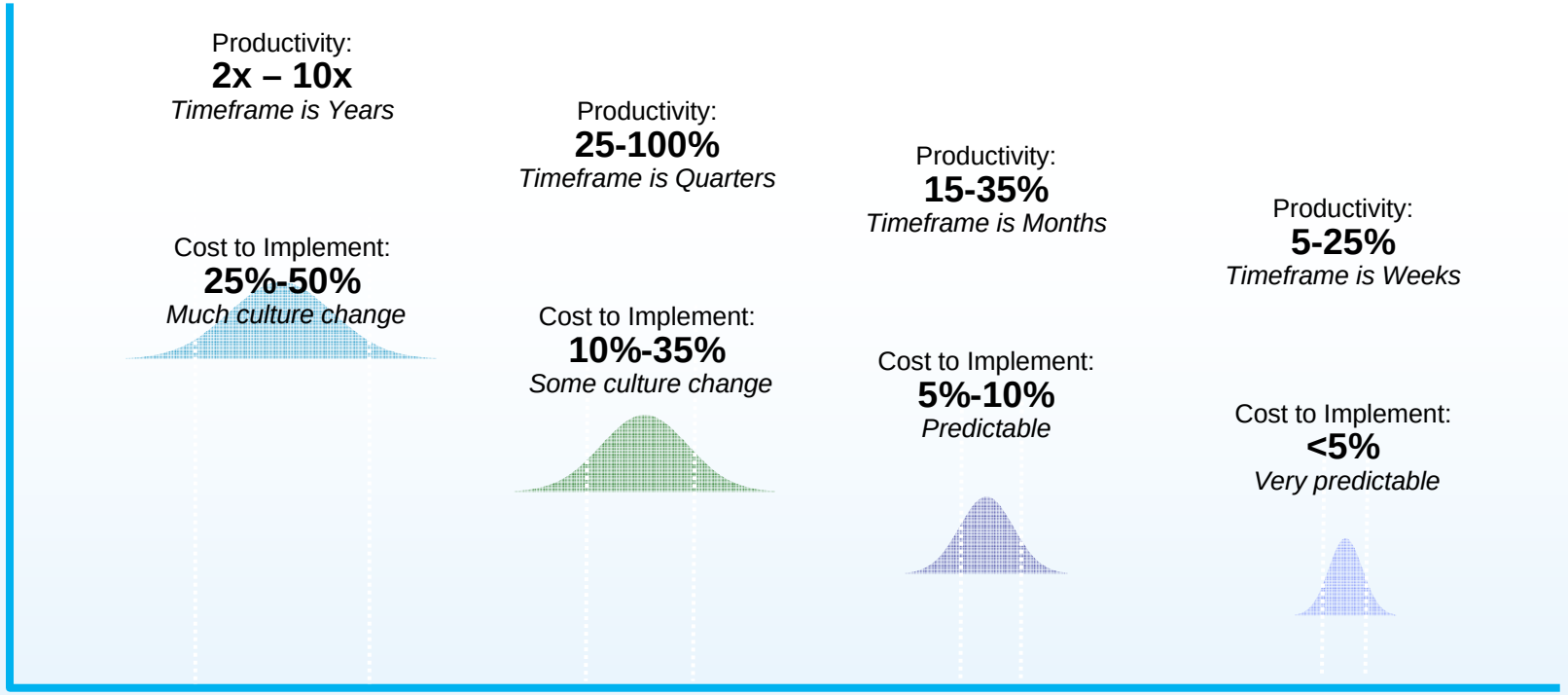
Resources = **Complexity** / ***Agility*** * **Collaboration** * **Automation**

TEAMWORK
- Synchronization
- Skills
- Experience
- Motivation

TOOLING
- Process enactment
- Measurement
- Instrumentation
- Manage complexity

Productivity Improvement Leverage

Economic Impacts



The Moral of This Story

Better software economics is a result of:

1. Measured improvement for improved predictability

- The foundation of economic governance
- Measurement helps you manage uncertainty

2. Agility for improved operational efficiency

- Best measured by cost of change trends
- Best achieved by accelerating integration testing

If you play better defense you can play more offense!

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