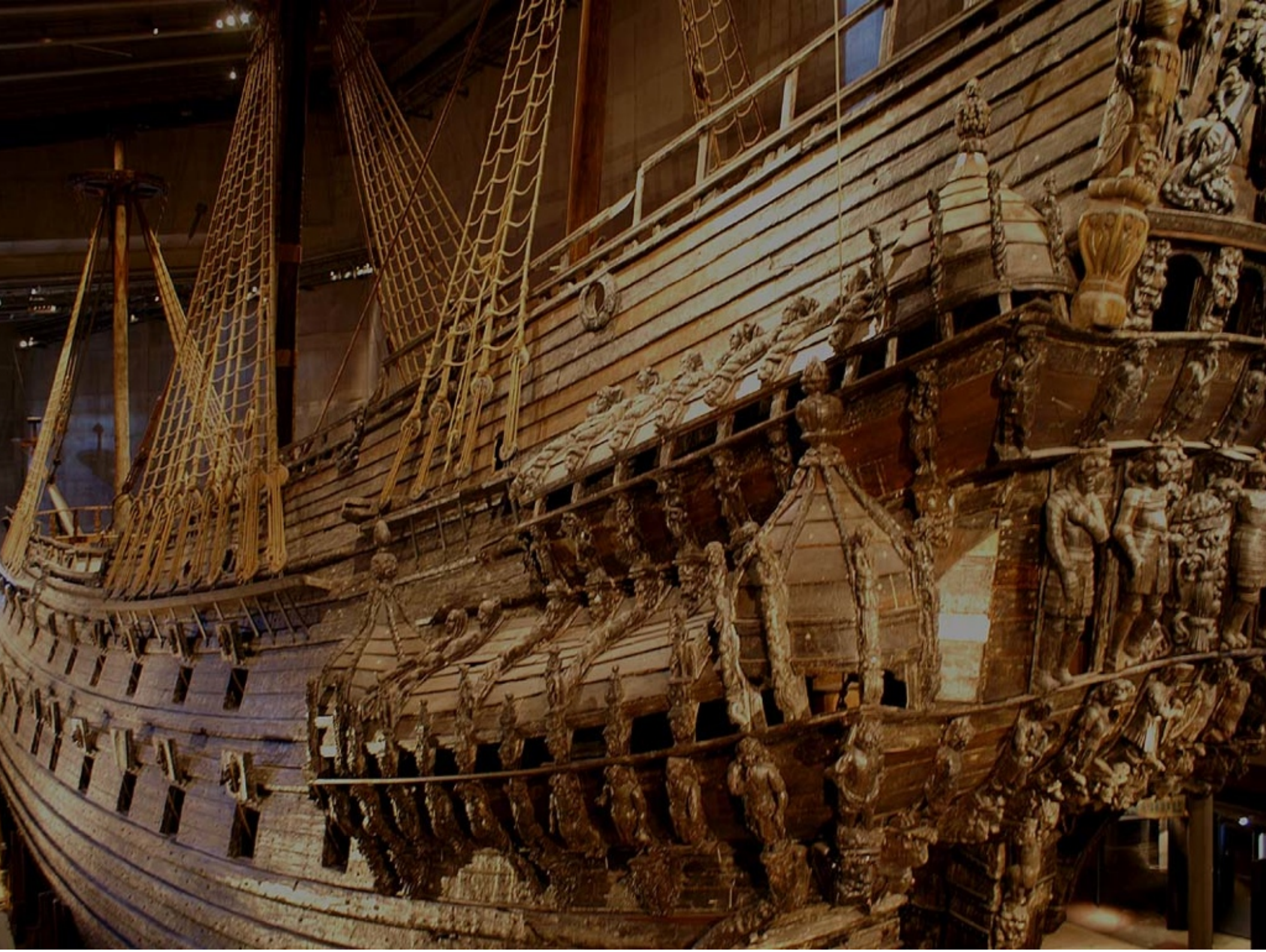
Architecture Tradeoffs



"I don't know the key to success, but the key to failure is trying to please everybody"

- Bill Cosby

architecture tradeoff analysis method

"we need lightning-fast response time to keep up with the backlog of calls"

performance

"over time we are expecting the entire company to use this system"

scalability

"we are planning to acquire several businesses in the next 5 years"

extensibility agility maintainability

"the budget and timeframe for this system is very, very tight"

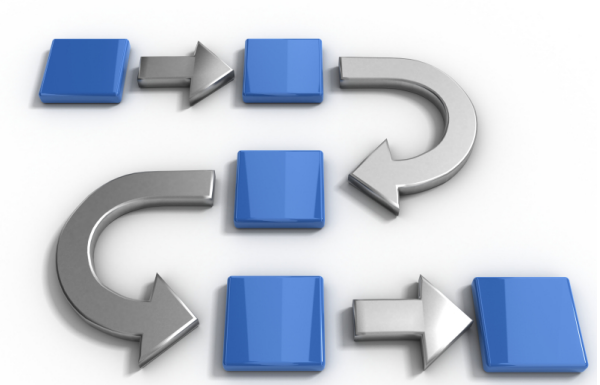
feasibility

architecture tradeoff analysis method

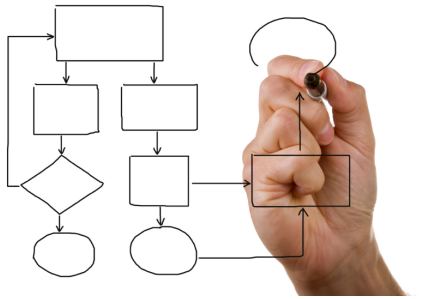
proposed architecture →

business drivers →

quality attributes →

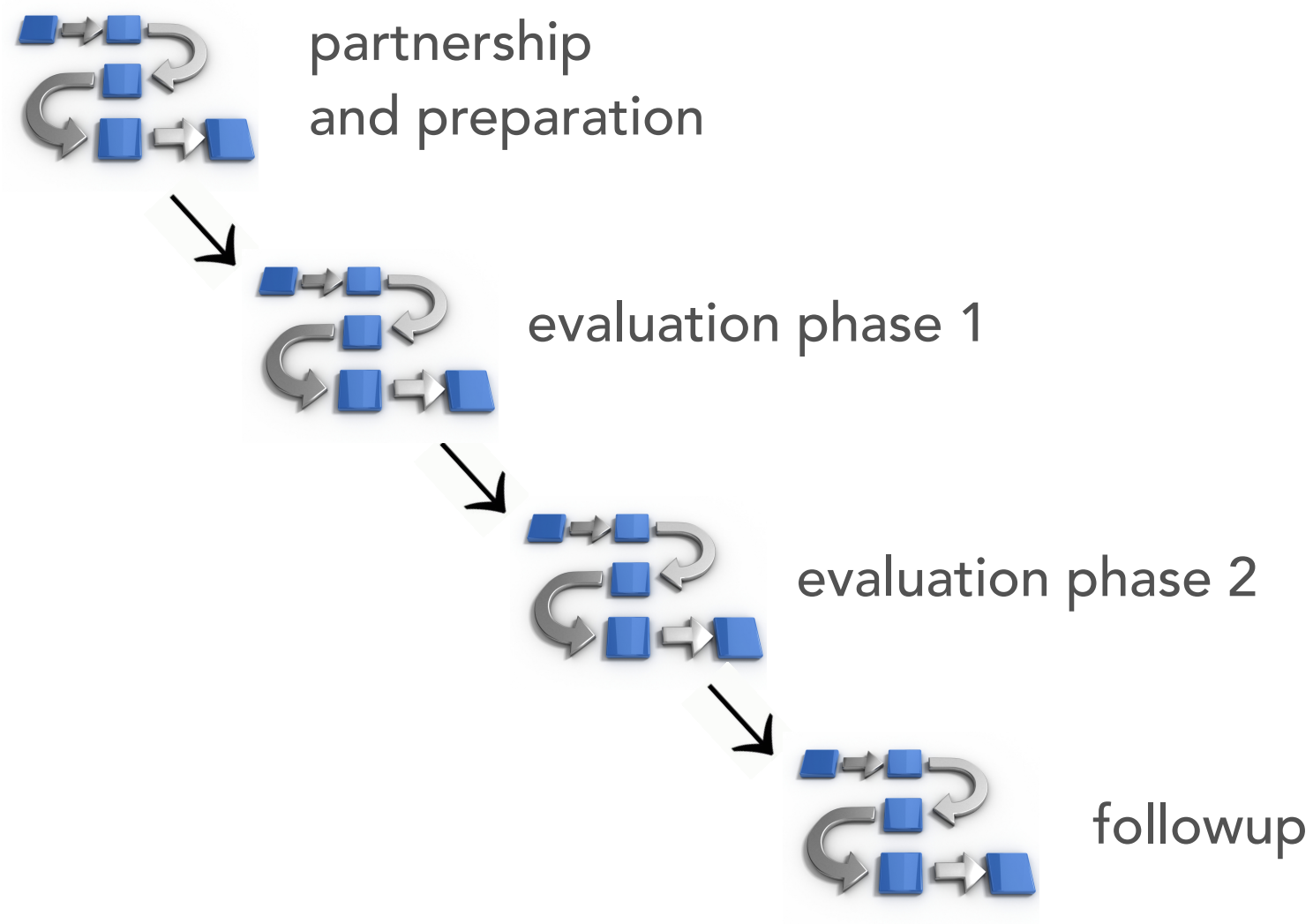


ATAM →

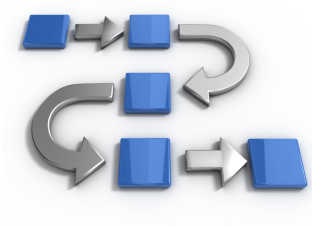


validated and approved architecture

formal ATAM process



formal ATAM process



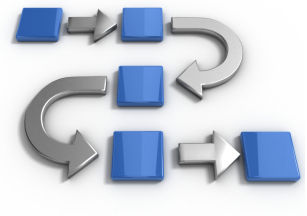
partnership and preparation

introductions and roles

establish agenda, logistics, and rules

explain the ATAM process

formal ATAM process



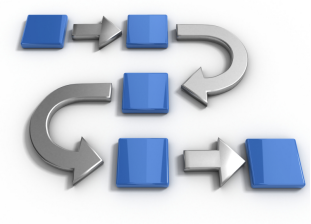
evaluation phase 1

present architecture and business drivers

articulate approach and quality attributes

defend architecture through scenarios

formal ATAM process



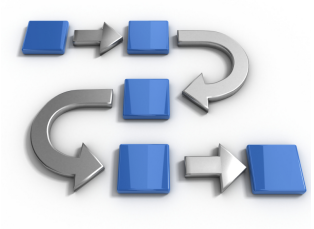
evaluation phase 2

prioritize scenarios and business drivers

defend revised architecture against scenarios

discuss tradeoffs and present results

formal ATAM process



followup

finalize architecture based on scenarios

document and distribute results

document consensus on architecture contract

formal ATAM process

issues with the formal process

assumes the architecture is complete

stakeholders are busy and often distributed

assumes a one-time process with no change

assumes all scenarios are known up front

agile ATAM process

focus on the *goals*,
not the *process*

agile ATAM process

create an architecture presentation

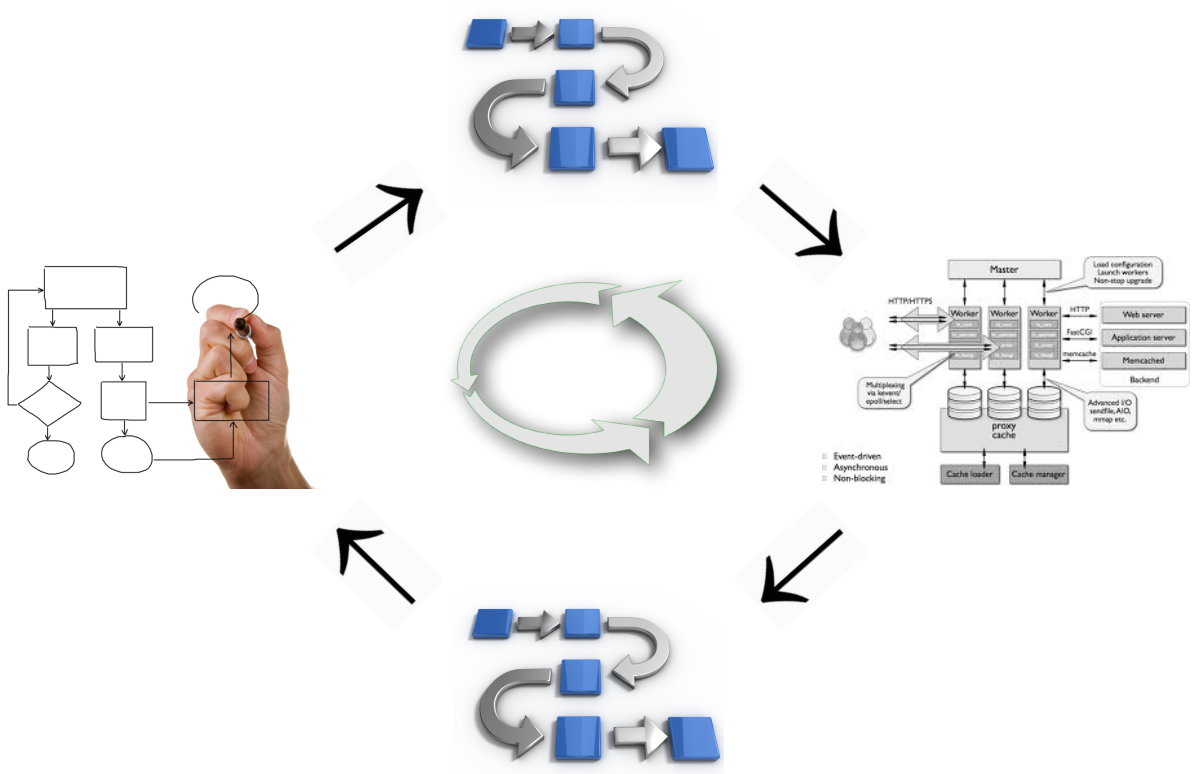
validate the architecture and establish trade-offs

identify and mitigate risk

get stakeholder buy-in

agile ATAM process

begin with a conceptual architecture and repeat throughout the project



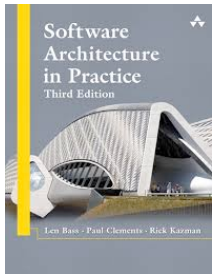
agile ATAM process

meet with smaller subsets of stakeholders more frequently

agile ATAM process

make ATAM part of the evolutionary architecture process, and keep stakeholders involved early and often

for more information



Software Architecture in Practice 3rd Edition,
Bass et.al, Addison Wesley

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