

# Mastering Systems Integration; Introduction

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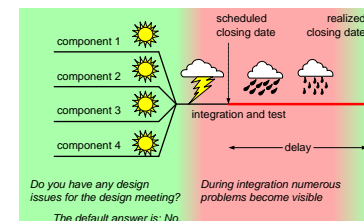
## Abstract

This presentation introduces the ideas behind the course Mastering Systems Integration. Systems integration requires cooperation from many project members, such as project leader, product manager, architect, lead designer, integrator, and tester. Integration is more than a simple aggregation as the reverse of the decomposition. The purpose of systems integration is to detect anything nasty that has not been foreseen as early as possible.

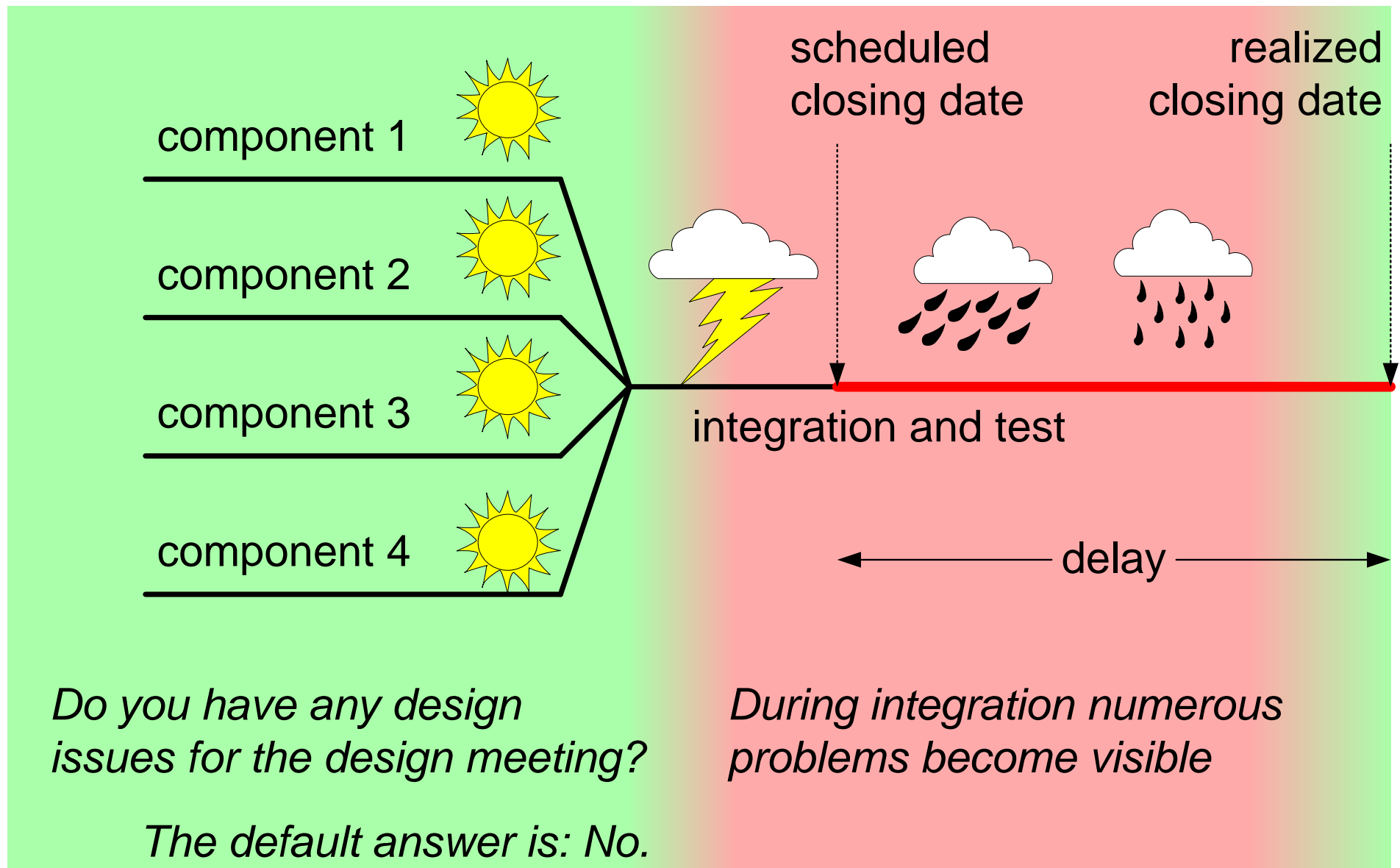
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# Integration uncovers hidden problems



# Project Team; Contributions to Integration

## Operational

### Project Leader

- *planning*
- *organizing*
- *resources*
- *progress*

## Technical

### Architect Lead Designer Integrator

- *key functionality*
- *key performance parameters*
- *concept selection*
- *system design*
- *integration sequence*

### Tester

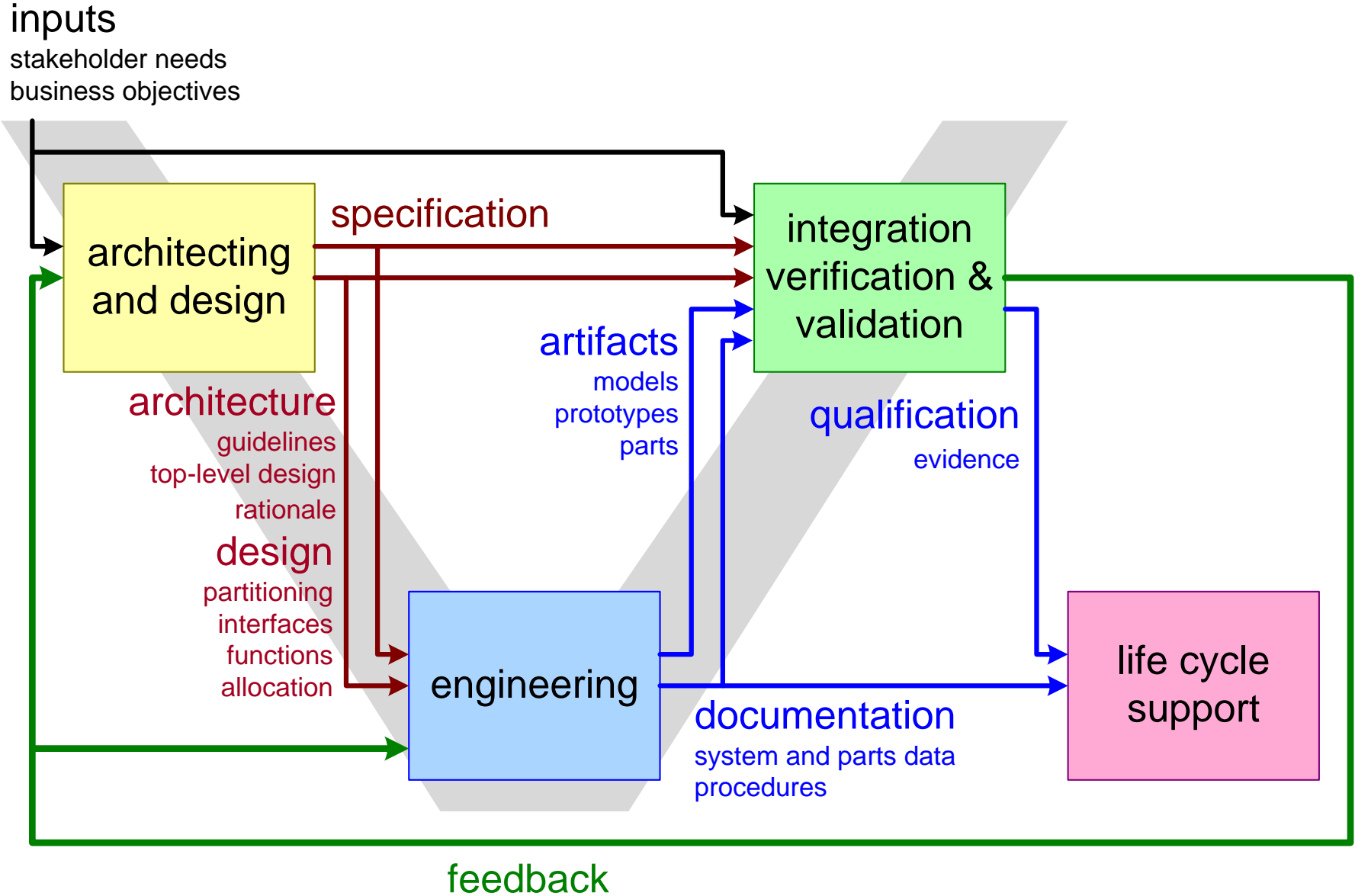
- *testing*
- *test configuration*
- *testware*
- *test specifications*
- *test reports*

## Commercial

### Product Manager

- *customer needs*
- *customer value*
- *system specification*

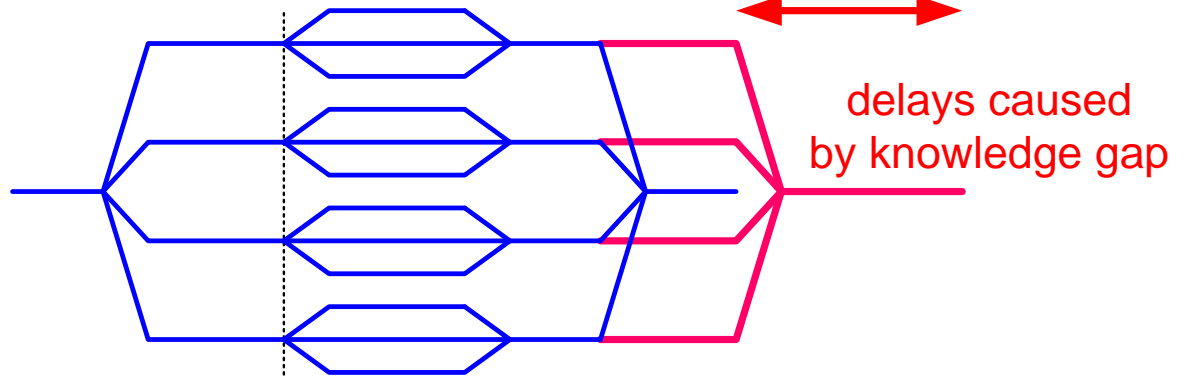
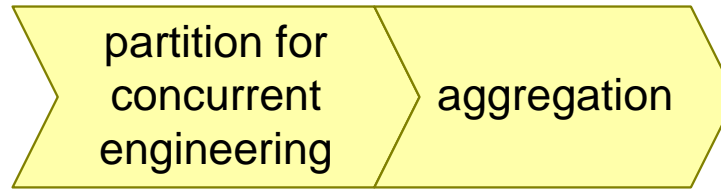
# The Role of Integration in Development



# The Pain of Systems Integration

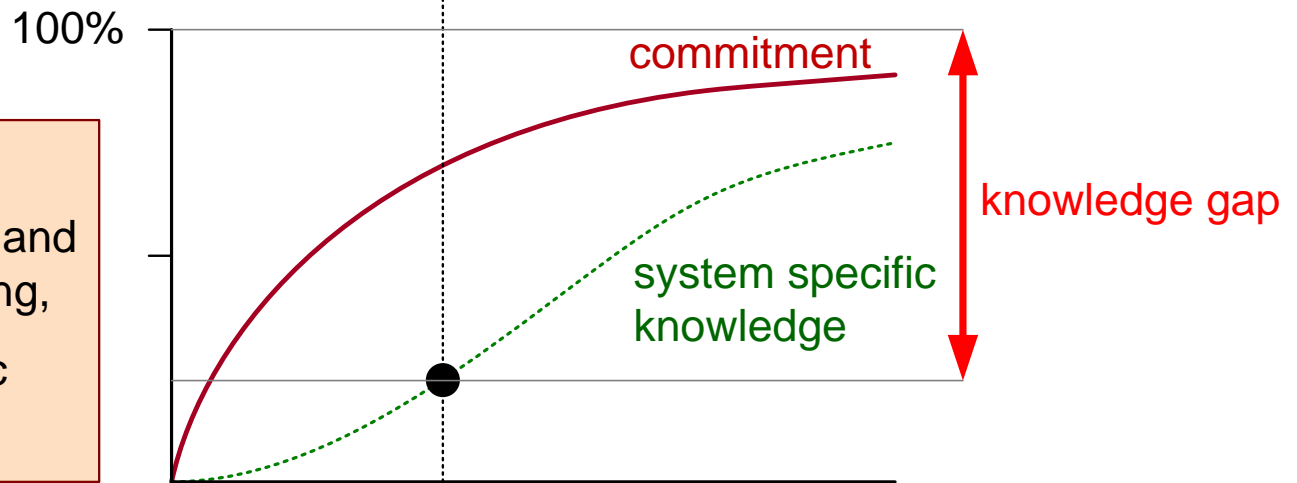
*traditional project management focus*

- time
- cost
- resources



*problem*

when specifying parts and during project planning, the system specific knowledge is low



after: *Systems Engineering and Analysis*, Fifth Edition  
 Benjamin S. Blanchard • Wolter J. Fabrycky  
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# Systems Integration Approach

Systems Integration starts when the project starts

The Integration perspective **drives** the project schedule by addressing the **major risks** from

**volatility, uncertainty, complexity** and **ambiguity**

Systems Integration strives to **Fail Early**; it is an early verification and validation

Systems Integration requires **multidisciplinary teamwork**, e.g.

**Integrators, Testers, Architects, Designers, Engineers, Project Leaders, Product Managers**, and others

Systems Integration complements Systems Architecting