

Mastering Systems Integration; Early Validation

by *Gerrit Muller* TNO-ESI, USN-SE

e-mail: `gaudisite@gmail.com`

`www.gaudisite.nl`

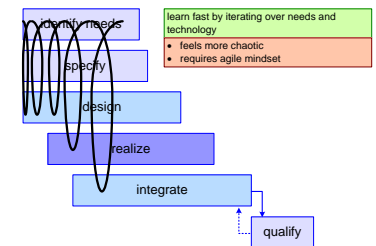
Abstract

The core principle of systems integration is early validation; are the assumptions of the needs, specifications and design decisions valid? it is better to fail early, then to hit faulty assumptions, unknowns, or uncertainties late in development.

Distribution

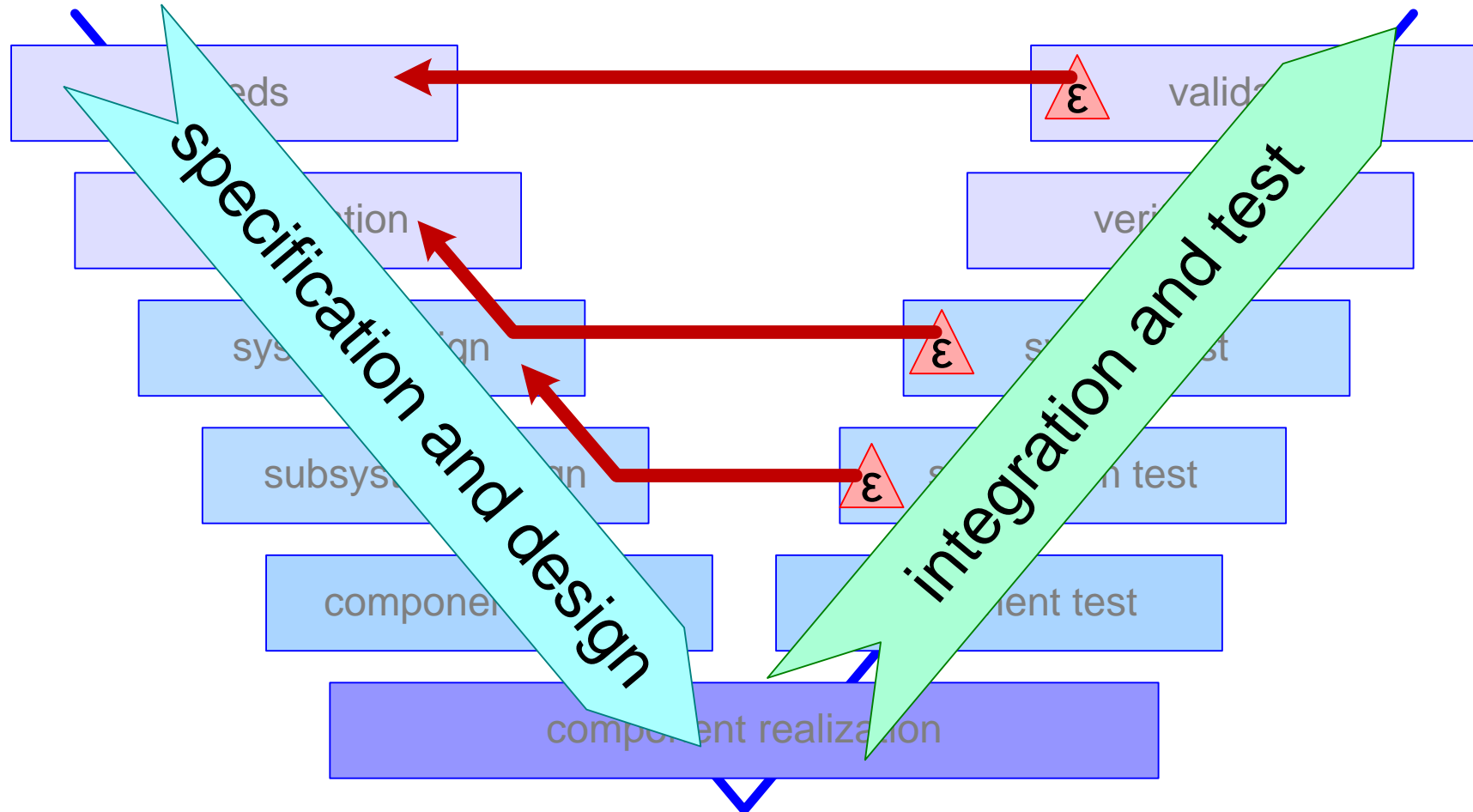
This article or presentation is written as part of the Gaudí project. The Gaudí project philosophy is to improve by obtaining frequent feedback. Frequent feedback is pursued by an open creation process. This document is published as intermediate or nearly mature version to get feedback. Further distribution is allowed as long as the document remains complete and unchanged.

January 27, 2026
status: planned
version: 0.5

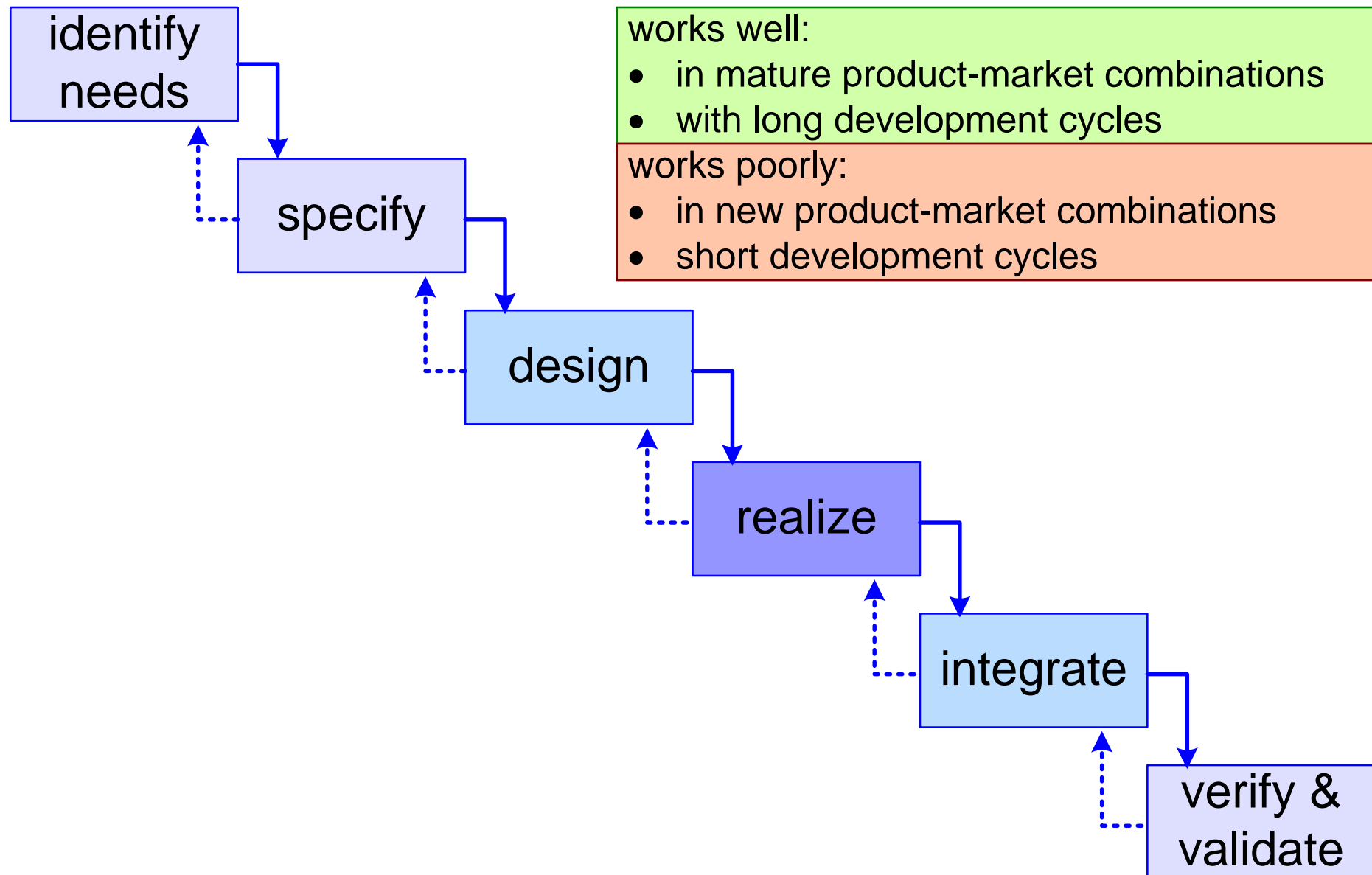


Most Problems are Found Late

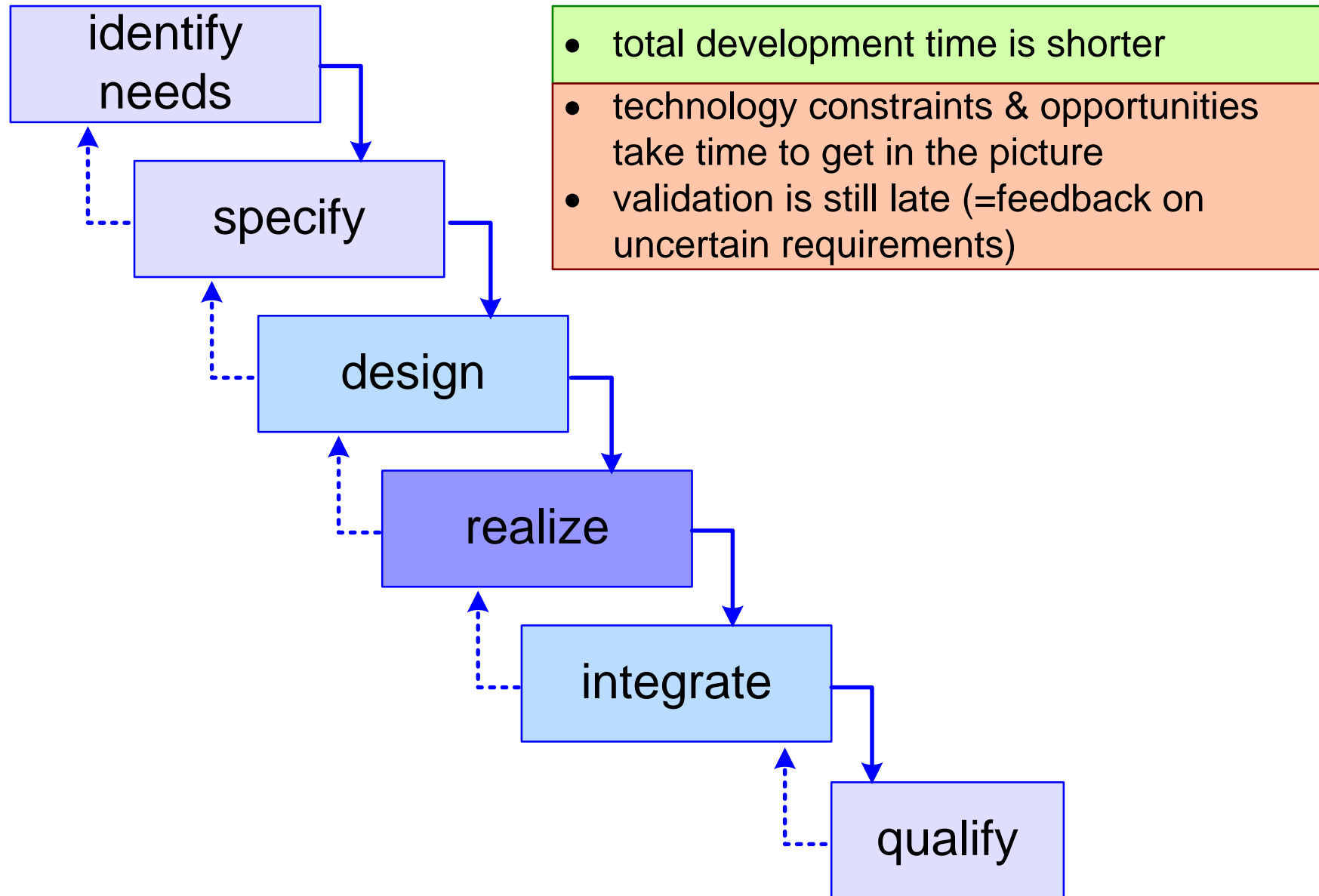
failures found during integration and test can be traced back to unknowns, unforeseens, and wrong assumptions



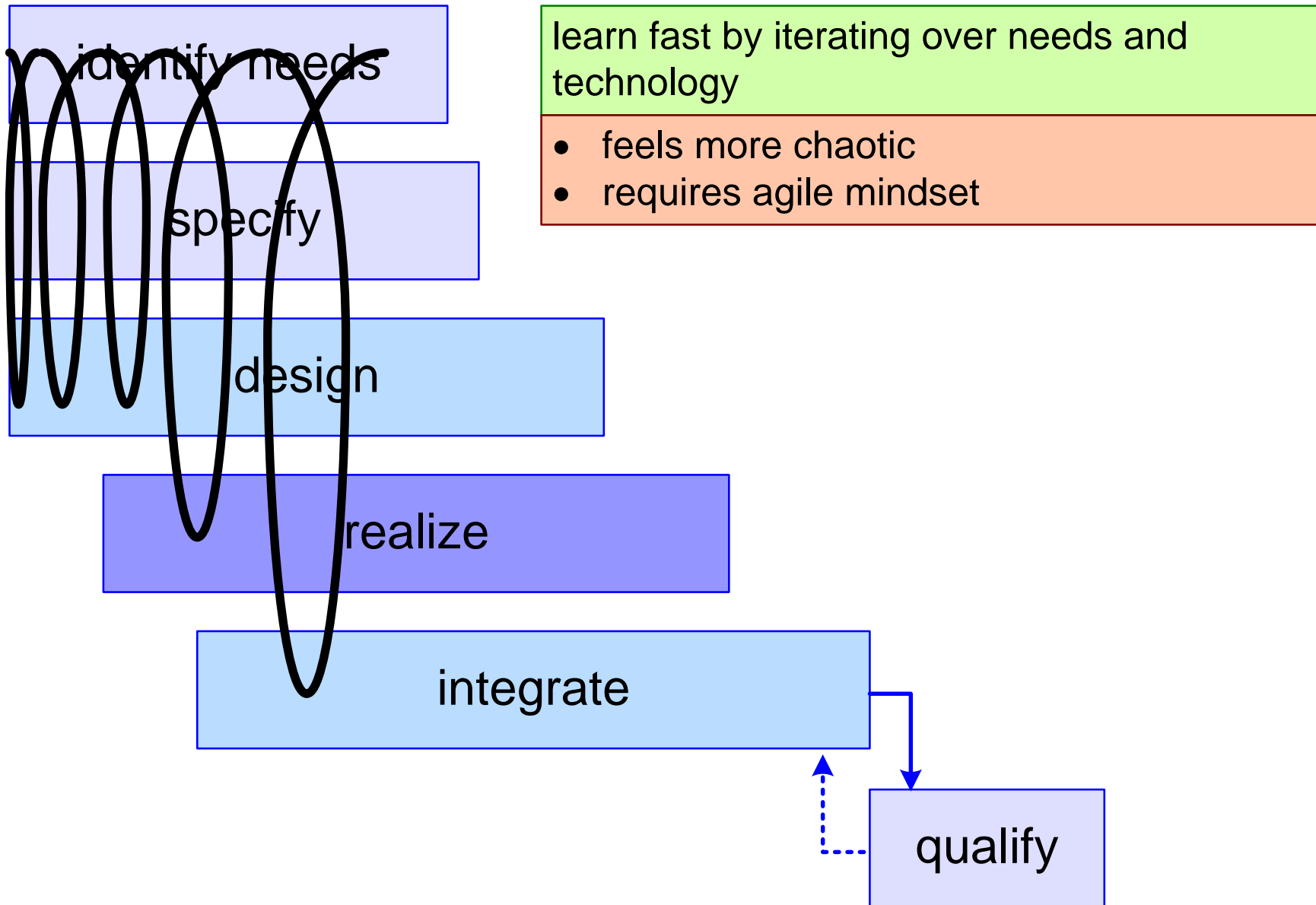
Waterfall model



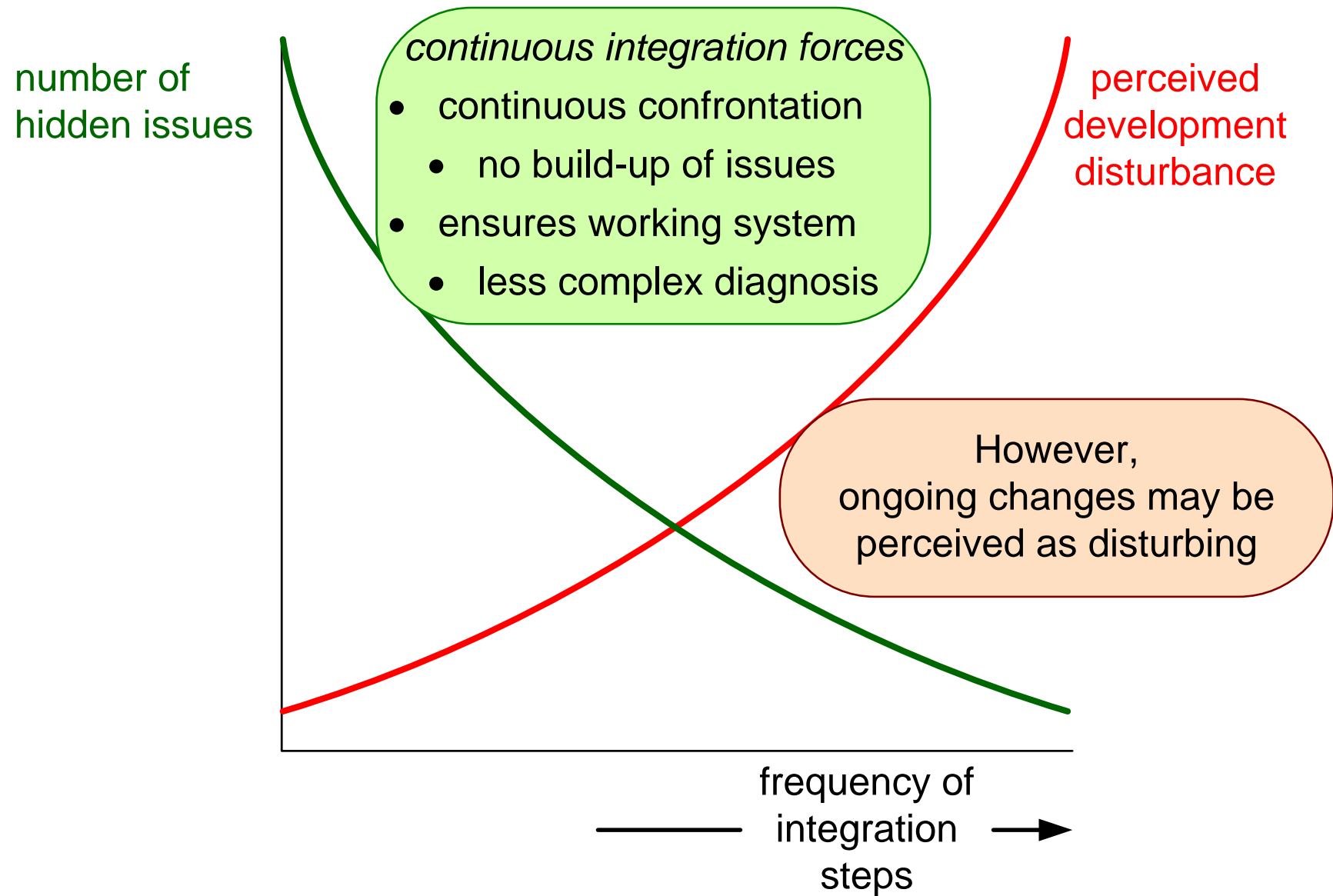
Concurrent Engineering



Iterative Approach



Continuous Integration



Development Processes From Waterfall to Agile

