Off-shore testing (how) does it work?

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Test & Quality competence
RUP competence

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Agenda

- Introduction
- Definitions, articles and figures
- Relationship with off-shore “partner”
- Software development process
- Example’s (60/40 and 20/80 percent)
- Test process / method, some details, experiences and things to know
- Lessons learned
- Summary and questions

Introduction

- Who am I?
  - Worked in the Result Centre from the beginning
  - Implemented testing within the Result Centre
  - Worked on several projects with a test team in Bangalore
  - Trained testers and test automaters out of Bangalore in the Netherlands
  - I give training and presentations about RUP & Testing (internal and external) also in cooperation with IBM
- Who are you, in my audience?
  - Who knows something about Testing?
  - Who knows something about off-shore software development?
  - Who knows something about off-shore testing?
  - Who has real experience in off-shore testing?
- I want to share information about…

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On-shore… near-shore… off-shore… are you sure?

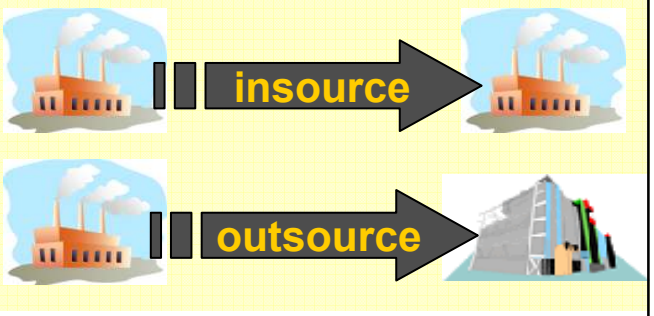
Stakeholder

on-shore

off-shore

near-shore

near-shore



Articles about off-shore

Computable 27 April 2007

ICT in India

About 1,2 million people are working within the ICT in India. Every year about 300.000 ICT students graduate. India contains about 65% of the world wide off-shore market.

Automatiserings Gids 30 November 2006

Outsourcing of testing… a high risk.

More and more outsourcing of testing become popular. But can it be successful? It needs special attention otherwise it can become a big disappointment. Defining outsourcing in clear services can be very helpful.

Automatiserings Gids 10 November 2005

Offshore for testing…

Our experience is that there aren't many good testers in India. But beware they will make up arrears in a few years because they are smart and very eager

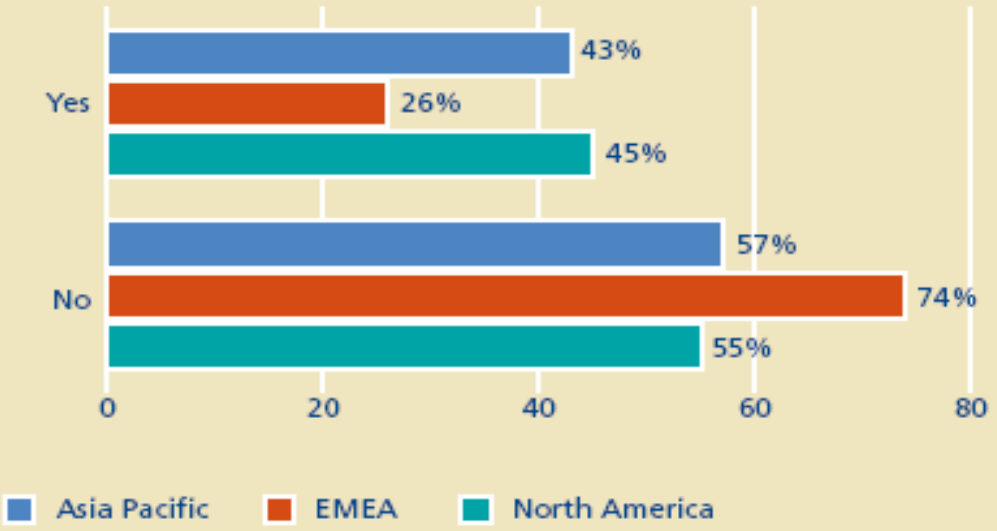
Automatiserings Gids 3 Juli 2007

Outsourcing 'booming business' in India

The export of software and -services for companies in India will increase by 30% till 40 billion next year. Last year the growth was 33%. This according to the Indian National Association of Software and Services (NASSCOM).

Figures about off-shore

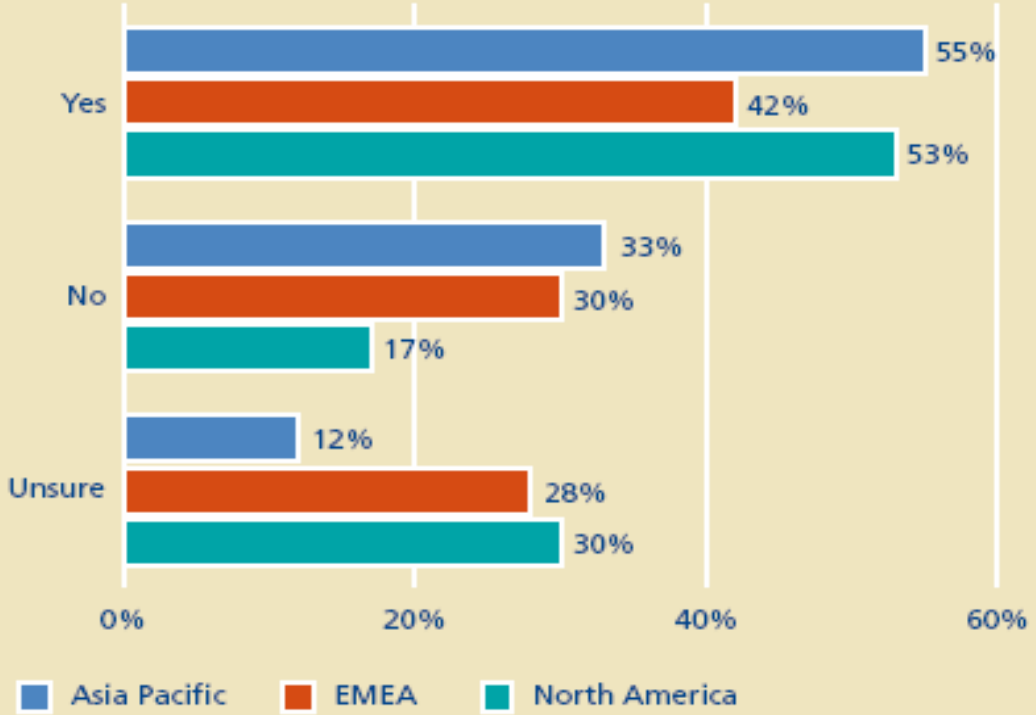
Figure 14: Operations currently being offshored



Question: Do you currently offshore any of your operations?

Source: Technology Fast 500 Deloitte Touche Tohmatsu, 2007

Figure 15a: Plans to offshore operations in next five years



Question: Do you have plans to offshore any of your operations in the next five years?

Source: Technology Fast 500 Deloitte Touche Tohmatsu, 2007

EMEA = Europe, Middle East and Africa

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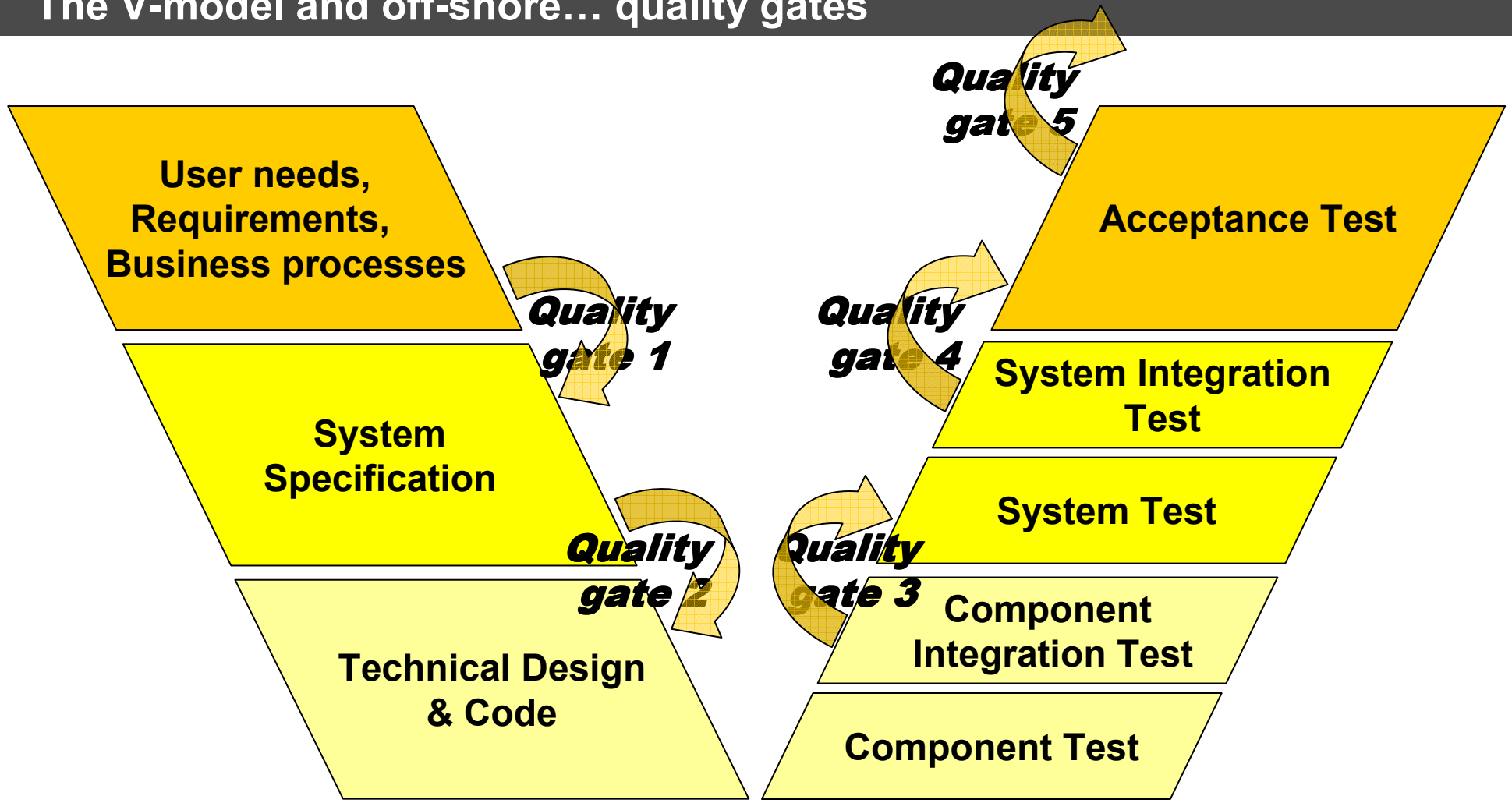
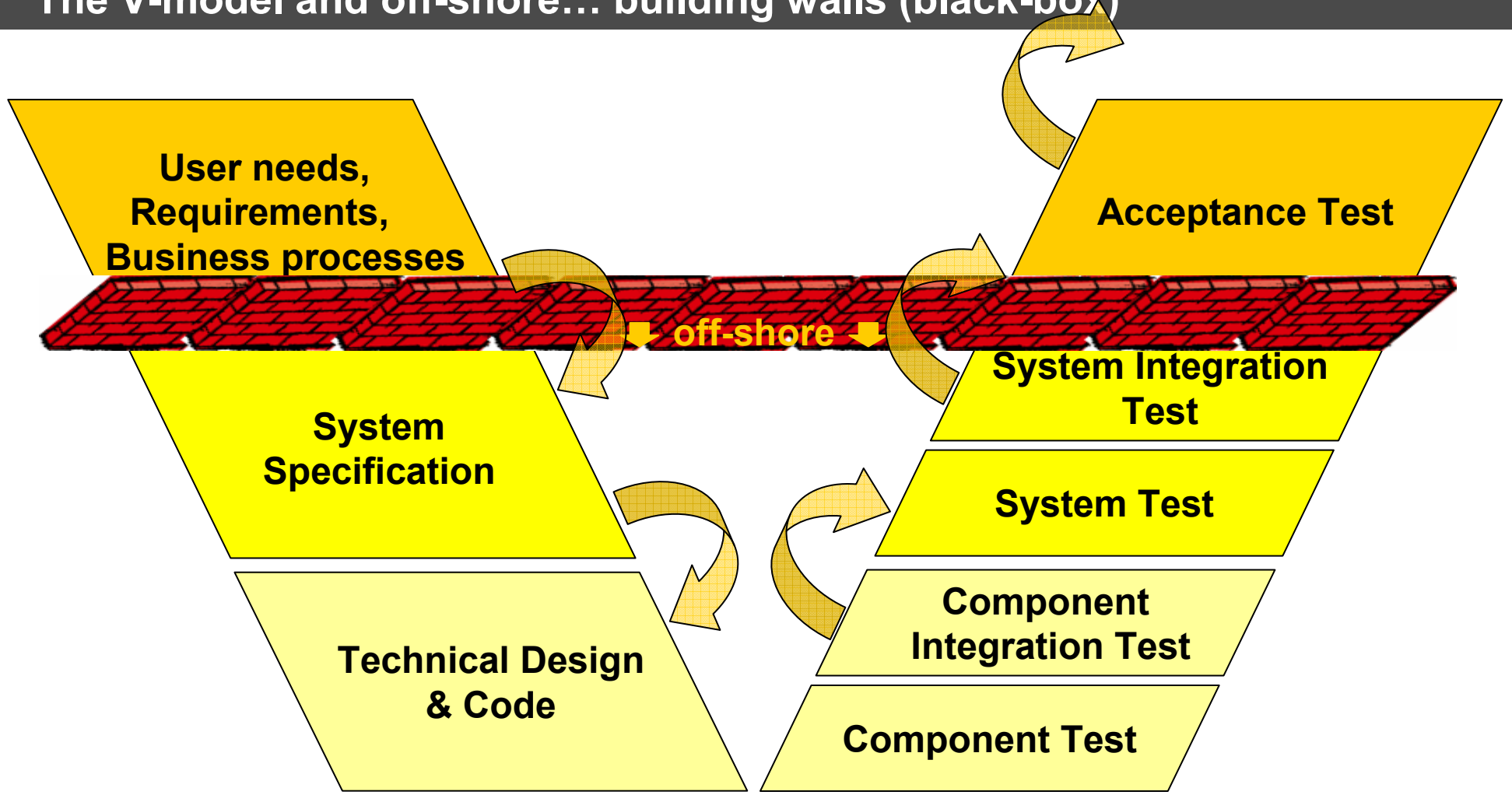
The V-model and off-shore… quality gates



terms according to: ISTQB

The V-model and off-shore… building walls (black-box)



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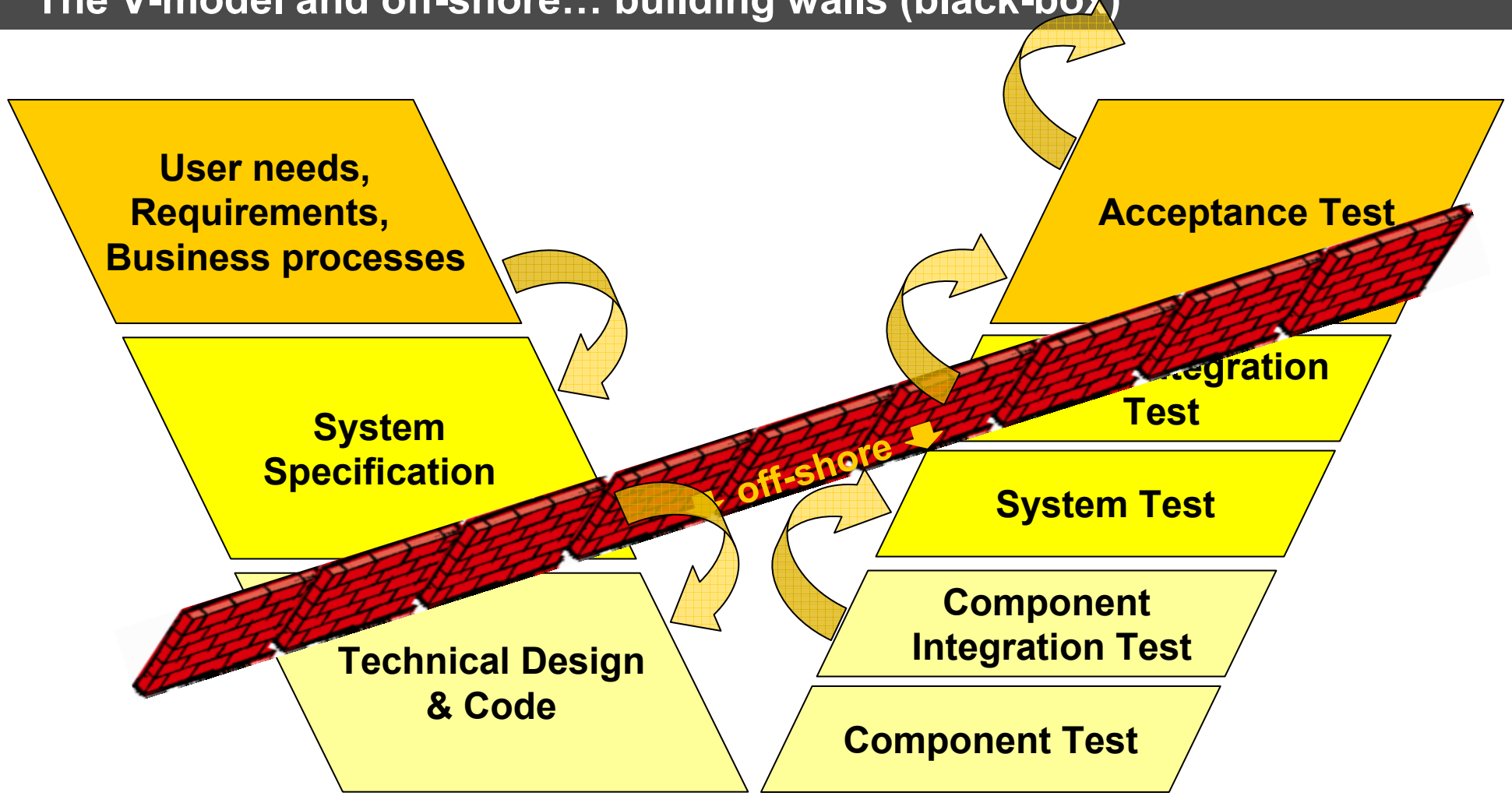

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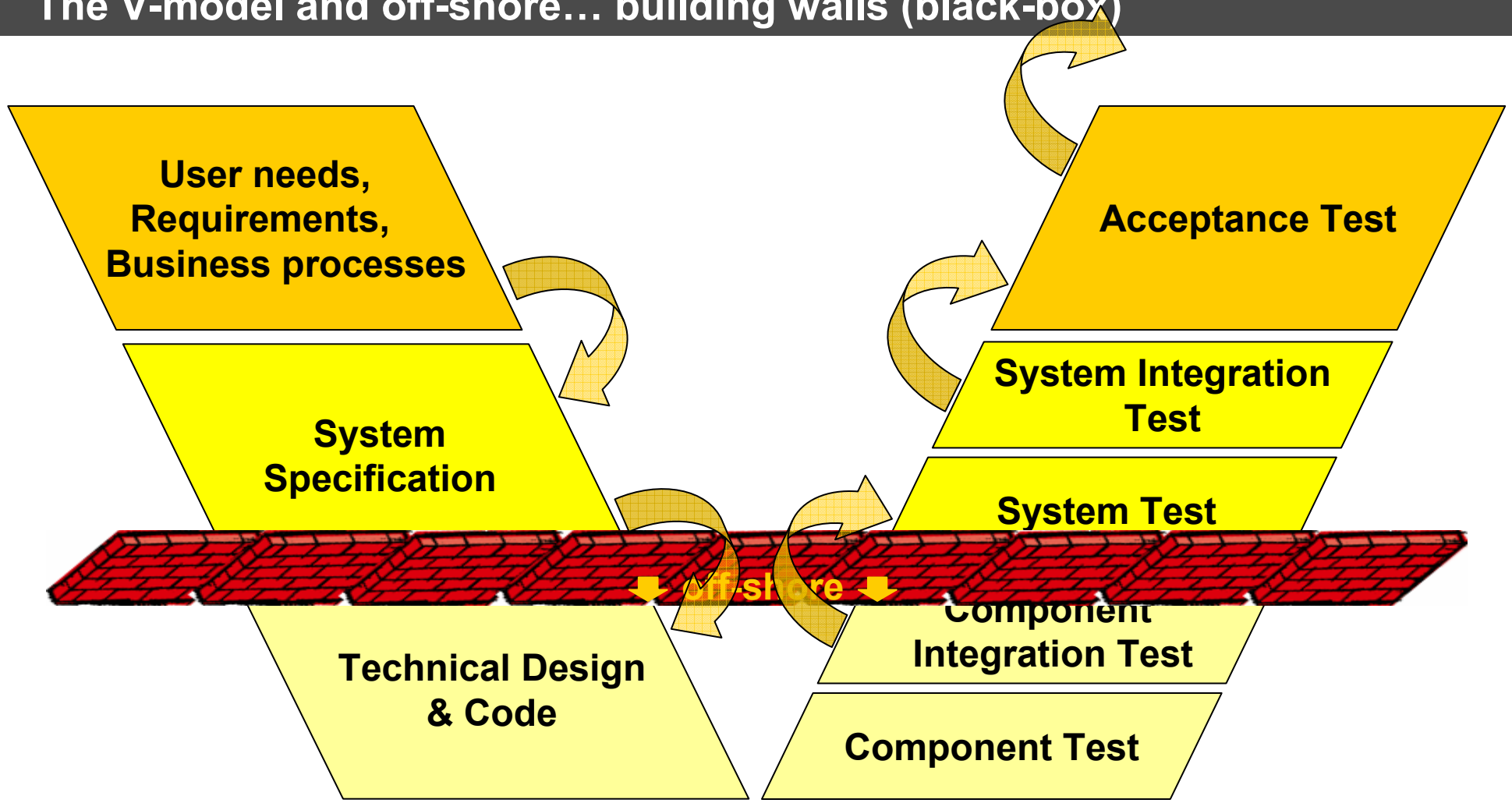

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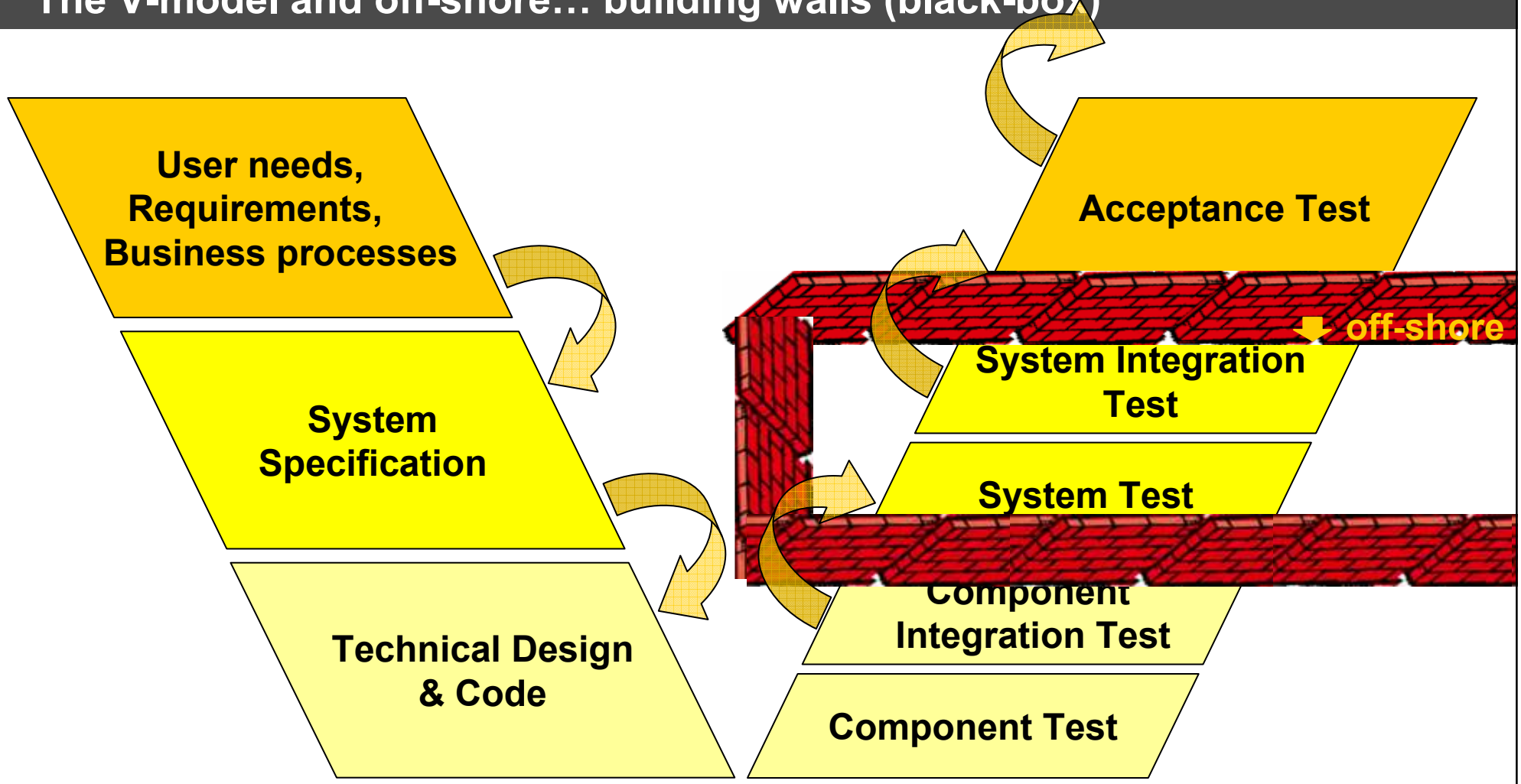

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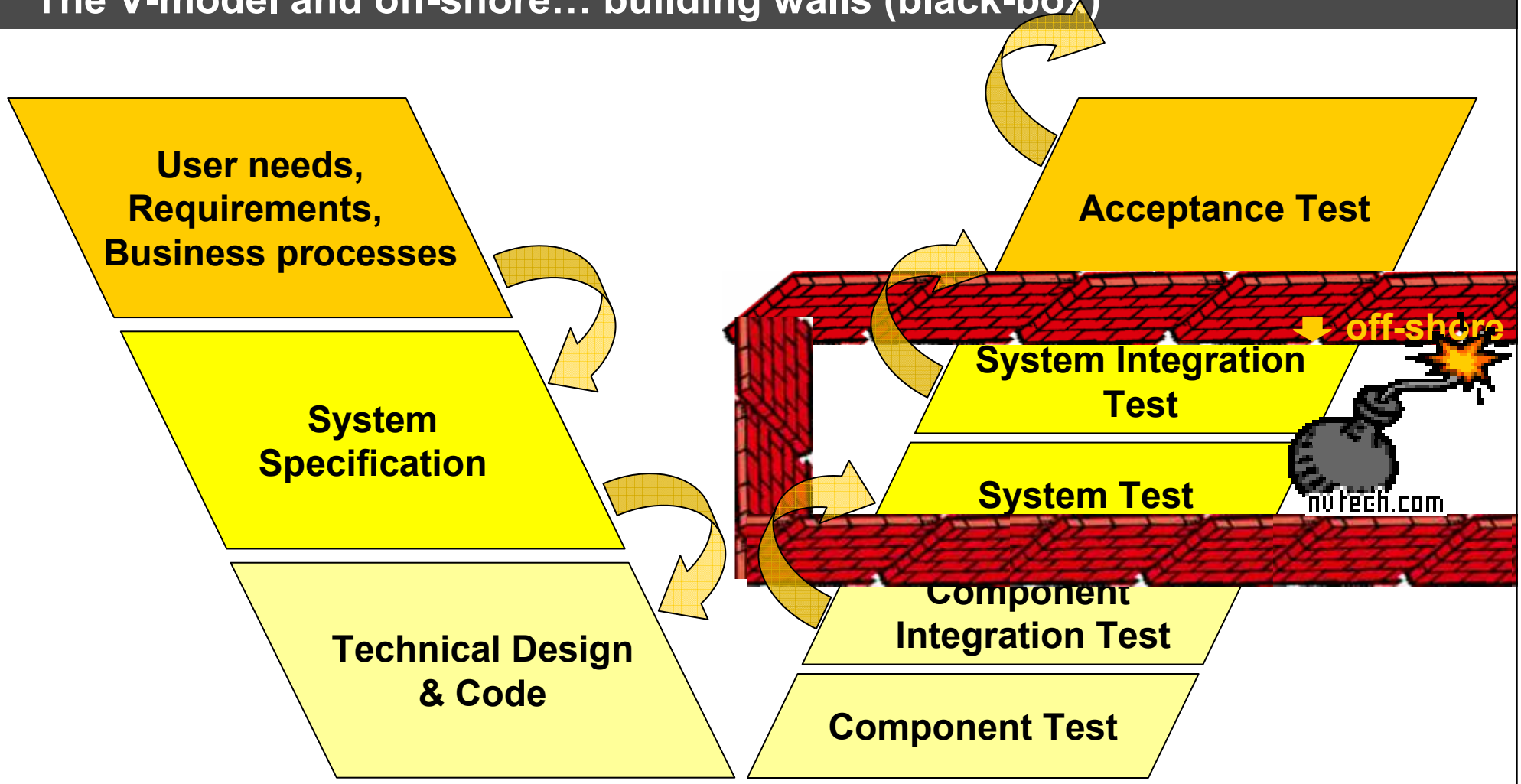
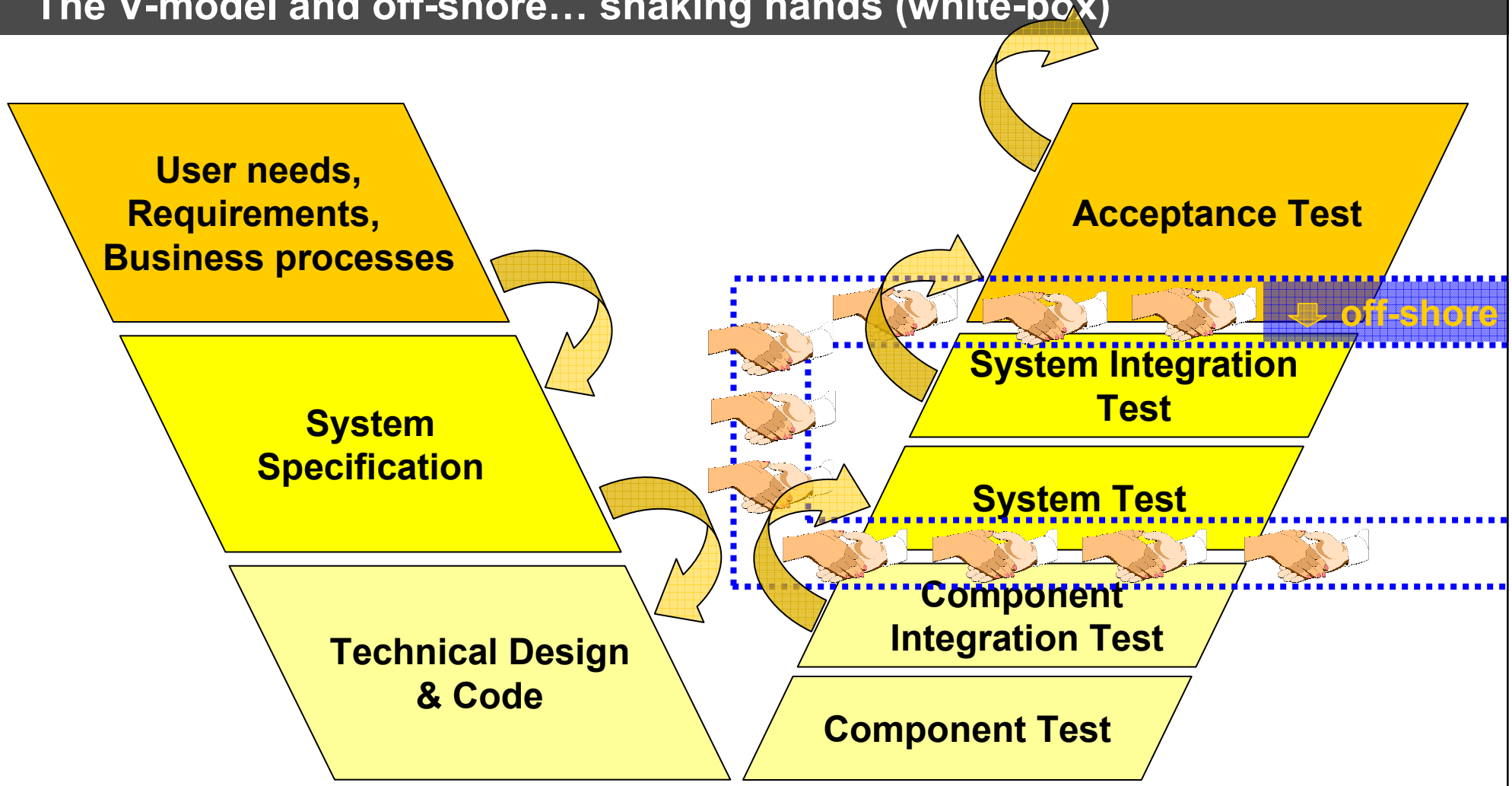


terms according to: ISTQB

The V-model and off-shore… shaking hands (white-box)



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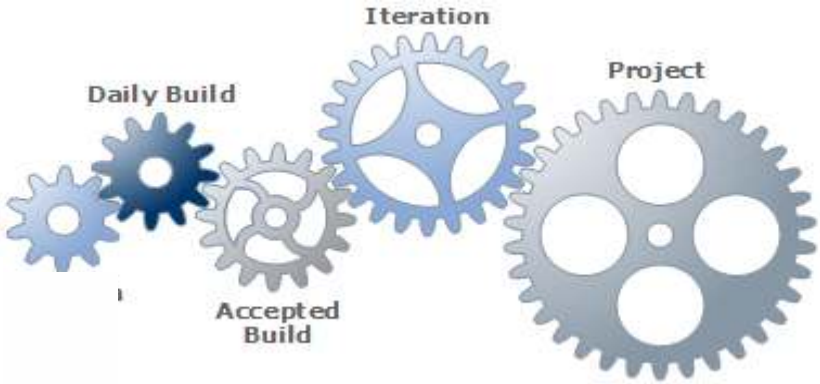
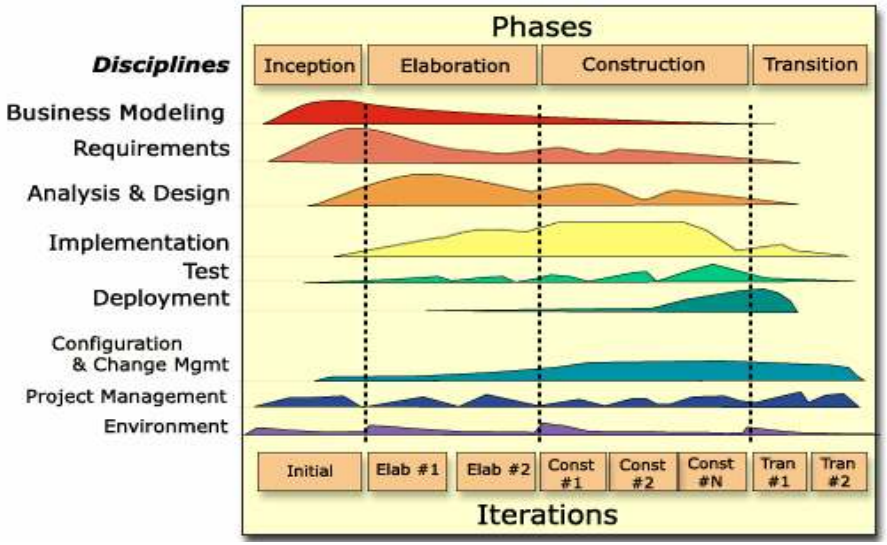
Use a standard or well defined software development process

MSF for Agile Software Development

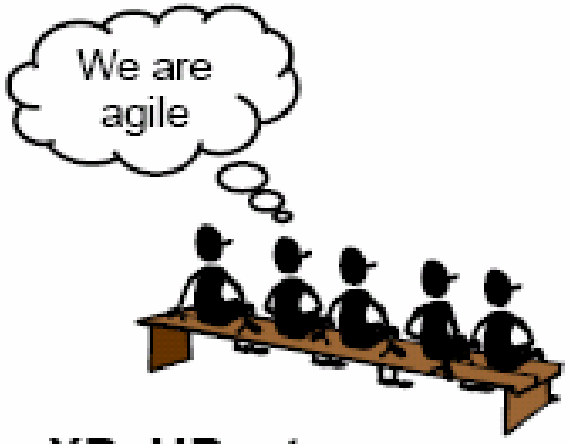
Microsoft Visual Studio Team System



RUP® Rational Unified Process®

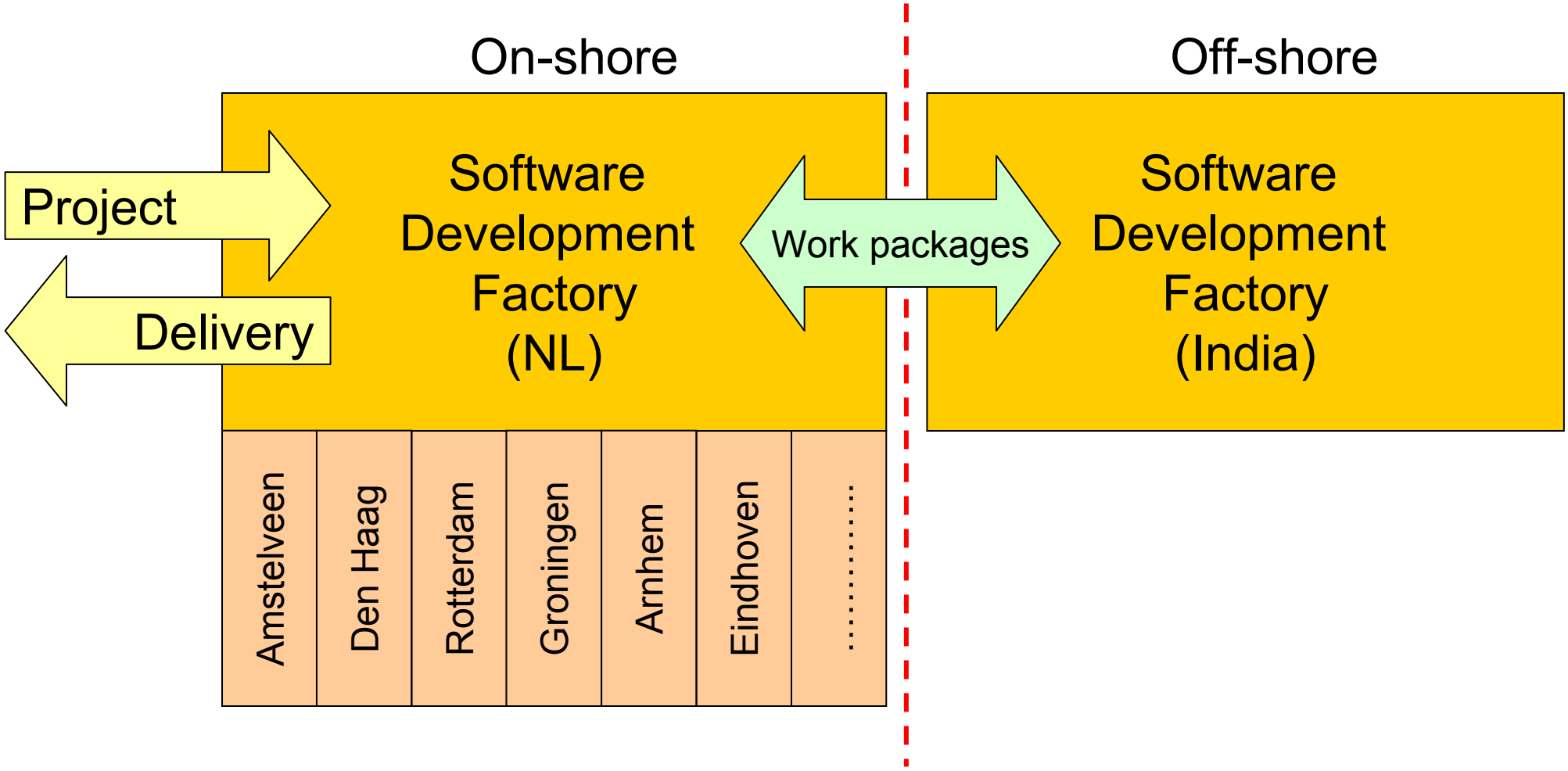


Rational. software



XP, UP, etc.

Clear software development process for on- and off-shore



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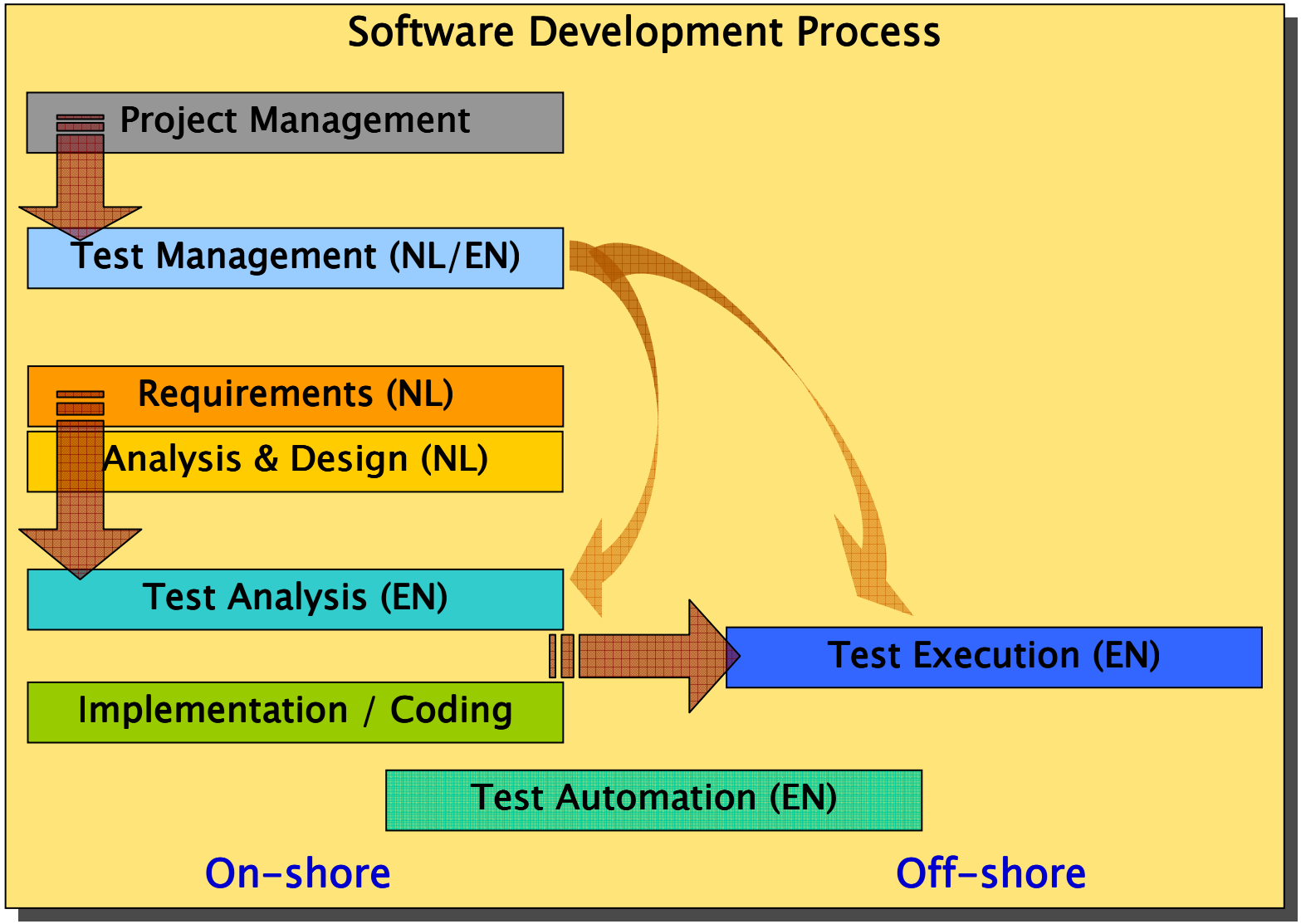
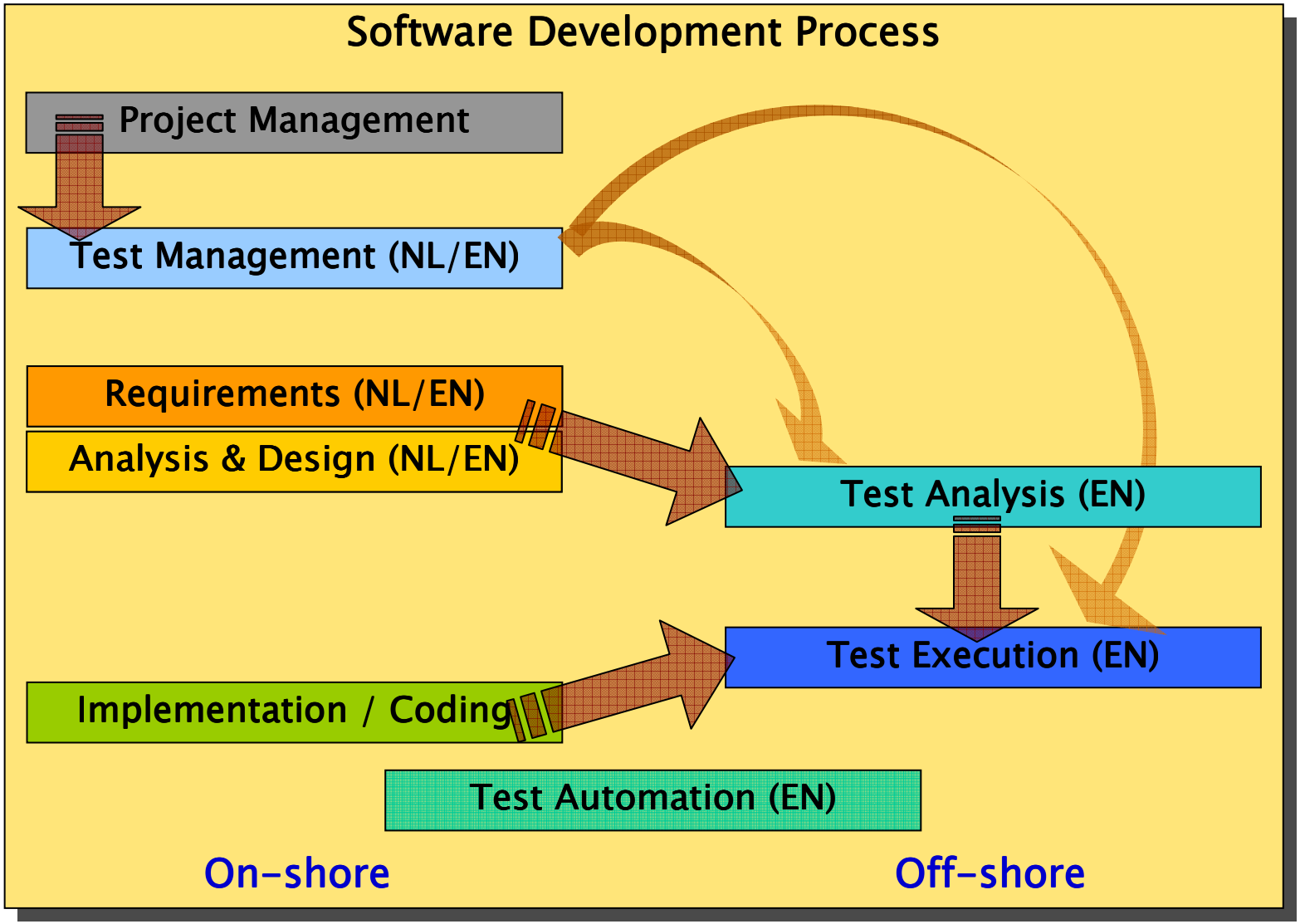
Software Development Process – Testing (60/40)



Software Development Process – Testing (20/80)



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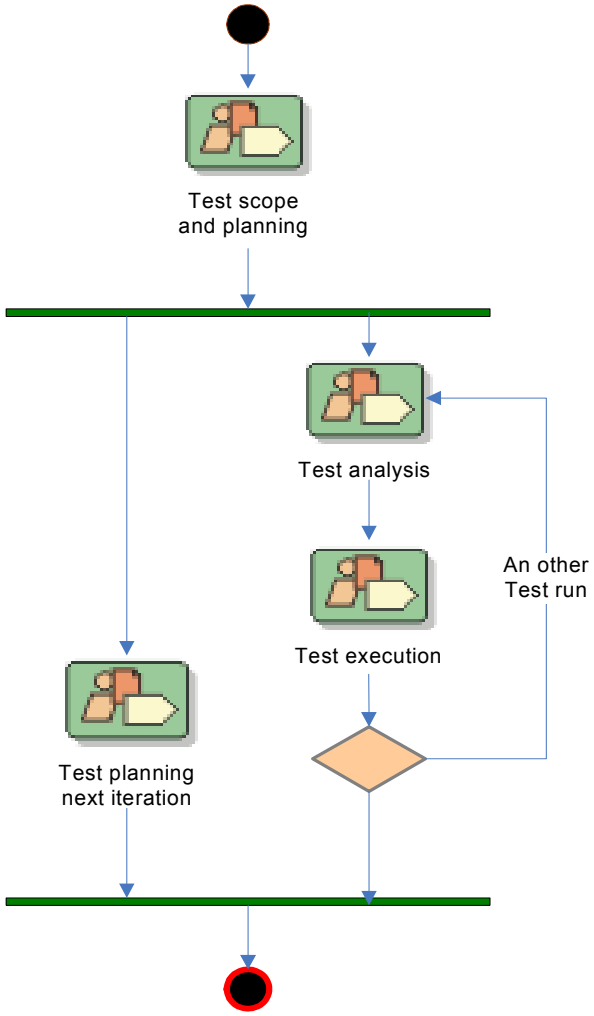
Test process, some details, experiences and things to know (1)



- The test process must be defined, agreed upon, very clear and always available.
- The master test plan must…

Test levels	TA	TE
IT	NL / India[2]	NL / India[2]
RT manual	India	India
RT automated	India / NL[3]	NL
ST	India	India
PT	NL	NL

Table 3 : What will be done in NL and what in India per test level

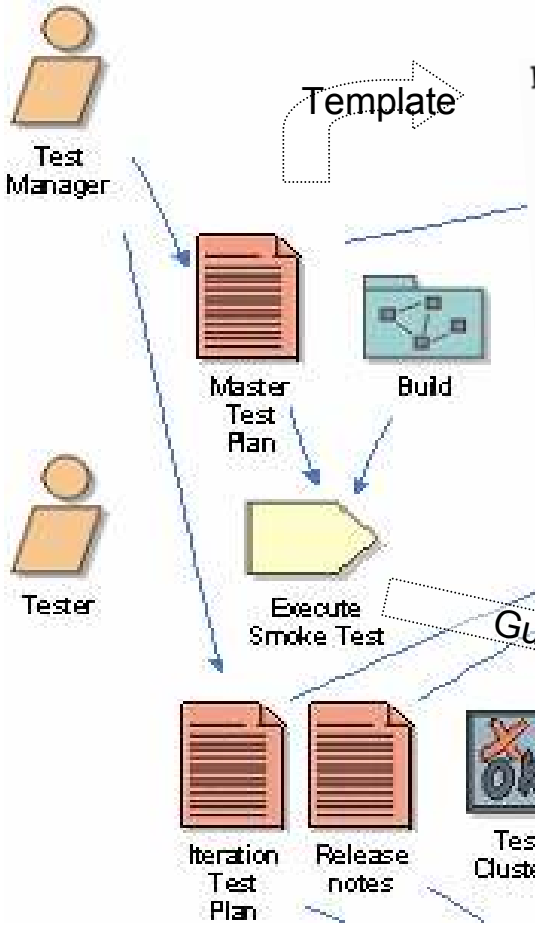
3.4 Test approach IT, RT and ST

A (structured) System Test (**ST**) consists of test analysis (set up or adjust test clusters) and test execution focused on the correct functional behaviour of the system. A well-prepared, structured test analysis makes it relatively easy to execute a System and a Regression Test.

The Regression Test (**RT**) consist of re-execution of (parts of) the System Test to prove that all functionality still works as it should. As an example: The use cases delivered in iteration X, and did not change in iteration X+1 will be tested during the RT again.

The (external) Integration Test (**IT**) consists of test analysis and test execution focused on the different interfaces to subsystems.

Test process, some details, experiences and things to know (2)



During the whole iteration (so this can be parallel to the previous paragraph):

- When a new release is delivered - this can be the daily build - determine if it's useful to deploy this release to the test environment. The test manager (with assistance of the test lead) will determine this.
- In case of a new release perform a smoke test.
- When the smoke test is passed the test execution can start.
- The test execution can consist of issues that are resolved and new / changed delivered functionality. For every complete test run the test results (sheet) must be filled (so not for testing a few issues).

State
In the column you fill in, if the use case has Passed, Failed, Partly passed or N/A the smoke test. For example, Passed

Passed	The Use Case doesn't crashes and behaves properly
Failed	The Use Case Crashes
Partly Passed	The Use Case doesn't crashes, but not behaves properly
N/A	The Use Case will not yet be released for System Testing

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Lessons learned off-shore testing – 1 (culture / time)

- Culture:
  - Every employee who has direct contact with/ works together with a colleague from India is obliged to follow the **culture course**.
  - Offer people the opportunity to come work on-shore for a while. Advantage: transfer of knowledge easy / better and great opportunity for consultants from India.
  - **Consultants from India need context (top-down)!**
  - Personal contact is very important. Settle personal matters as private as possible.
- Time
  - Time difference (4½ hours during the wintertime, 3½ hours during the summer time).
  - **India has a lot of public holidays (and they differ from 'ours')**.
  - In India it's common to work 10 hours a day, but effective this is less that 8 hours.
  - In India it's also common to work at a Saturday (and even on a Sunday when required).

Lessons learned off-shore testing – 2 (common)

- When the scope and the test process is clear **India is capable to do a very good job at testing** (maybe even better than the Netherlands).
- The team in India:
  - **One lead tester**.
    - Be sure you ask him for estimations (test analysis and test execution)
    - Make him (her) responsible for the planning and progress
  - Take in account that every 'new' activity that the testers in India aren't familiar with cost a lot time!
  - Should follow a culture training.
- The team in the Netherlands:
  - Best practice: Test manager (part-time) and test analyst (fulltime)! Because the hierarchical structure in India. The Test Manager will communicate with the lead tester in India. The test analyst will communicate with lead tester and testers in India; because of the hierarchical structure **the (NL) test analyst will get more and better input from India**.

Lessons learned off-shore testing – 3

- Startup:
  - Get the **test scope and strategy clear** (much clearer than you need to have in NL)
  - Be aware that functionality that's obvious for us isn't obvious in India.
  - Make the planning very clear!
  - Let **lead tester in India give input to the planning**.
  - See each other (go to India or let the lead tester com to NL) during startup.
  - Let **development in India and System test in India be separated**, planning and progress separated to NL.
- Test environment:
  - Use (for instance) a standard software development environment; via terminal servers working in the **same environment**, you can even use virtual servers.
  - Version control via tooling (e.g. ClearCase)

Lessons learned off-shore testing – 4

- Test management:
  - **Check the day-to-day progress**.
  - Let the testers in India log / save / store **every test component** (also the draft versions) on shared environment (so you can check). Preferable is the use of version control (e.g. ClearCase).
  - Also **issue(s) maintenance via tooling**. Preferable is the use of ClearQuest (when this is the standard within the Software Development Process).
  - When planning is met also reward the team in India.
- Test analysis / execution:
  - Test scenario's setup in NL
  - **Test clusters can be setup in India** (review in NL with review records)
  - Test execution can be done in India (check in NL)
  - Test execution of the test scenario's can better be done in NL
  - Smoke test can be done in India

Lessons learned off-shore testing – 5

- Communication:
  - Daily progress via mail / chat / phone.
  - **Have a fixed (video) conference call on a weekly basis**.
  - Pay attention to the difference in culture
  - Let (lead) tester give a **recap** so you know if he / she did understand
  - If a (lead) tester say yes this doesn't always mean yes (use open questions)
- Configuration management:
  - **Setup daily (nightly) build**.
  - Setup install scripts; one button install on one of the environments (so pro- and demote is easy possible). So India can do the installation of a new release.
  - Use preferable technical separated OTAP* environments (at least logical separated).
  - Be sure that unit testing incorporated in the software development cycle! Check on coverage and on test results.

*) OTAP means Development, Test, Acceptance and Production environment.

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Summary

- Necessary for successful off-shore testing
  - A good relationship with your off-shore partner
  - A clear software development process and test process
  - An integrated test environment
- Blended (test) model
  - Some testing on-shore and some testing off-shore; 60/40 till 20/80.
- You have to invest first
  - Visit them or let them visit you
  - Maybe you think your software development and test process are clear enough… but they aren't! So first upgrade (or even adapt) the processes!
- Off-shore testing does it work? It can work but isn't easy! But when it's working…

Questions