

*TEST ENVIRONMENT*  
*door Michiel Vroon*

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**Donderdag 12 februari 2009**

voordracht georganiseerd door het



**TECHNOLOGISCH INSTITUUT**  
*Discussiegroep Software Testing*

met de steun van



*cronos*  
e-business integrator



systematically delivering success  
**quasus**



tesco  
testing your software



**ps.testWare**  
Your devil's advocate

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Ingenieurshuis - K VIV, Antwerpen

Test environment

Stick or pillar

Michiel Vroon



test management and consultancy

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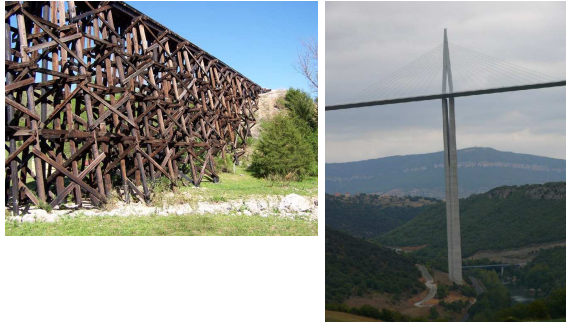
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Stick or pillar?



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Stick



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### Test environment



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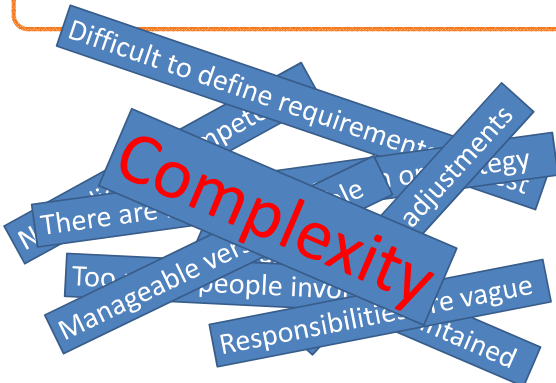
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### Some causes



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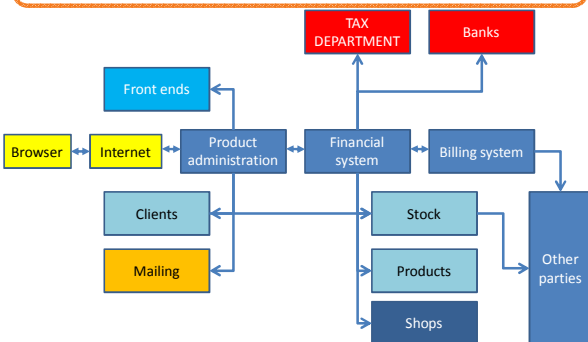
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### Complexity end-to-end



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### Some solutions

- Define single point of contact
- Work with environment types
- Set up processes
- Arrange test data
- Use master/copy
- Install shared environments
- Have an authorization strategy



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### Define single point of contact

- Test environment coordinator
  - Responsible for setting up and maintaining environment
  - Single gateway to all parties involved
  - Combination of technical and testing skills
  - Communicator and project leader
  - In bigger organizations:  
*dedicated department of test environments*



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### Department of test environments

- Clear and single point of contact for organization
- Maintaining test environments as competence
- Insight into use and costs of test environments
- Clear overview of all systems and connections

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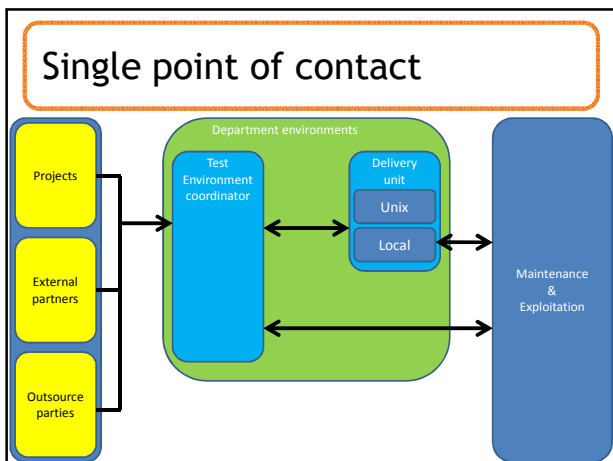
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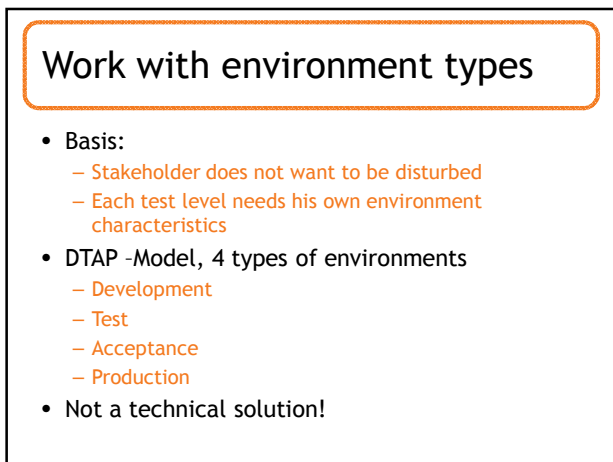
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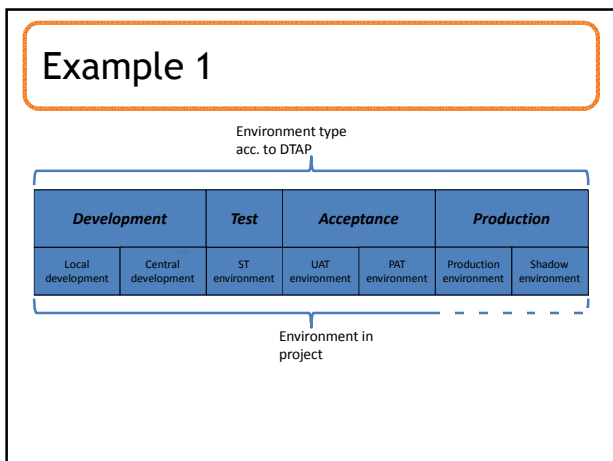
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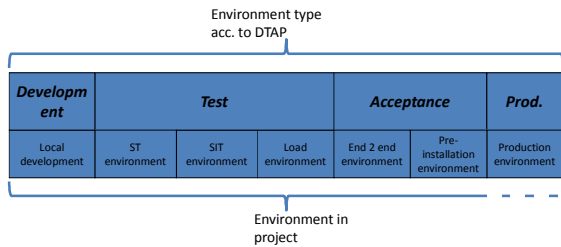
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### Example 2



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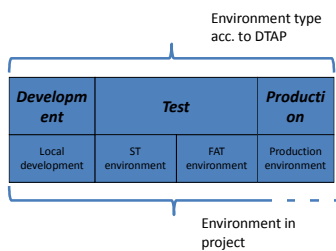
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### Example 3



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### Set up processes - 1

- Define what to deliver when and by whom
- Connection with other processes: design, build, test and implementation
- Concrete and fixed deliverables
- Example process TMap Next

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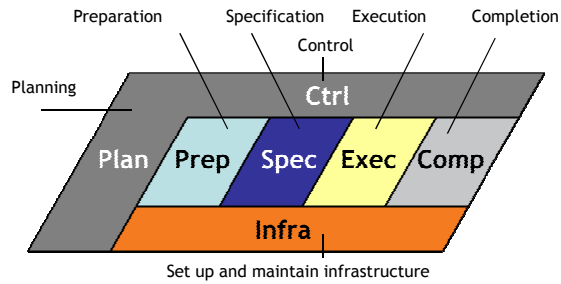
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### TMap life-cycle model




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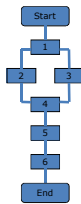
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### Set up and maintain infrastructure

1. Specifying the infrastructure
2. Realising the infrastructure
3. Specifying the infrastructure intake
4. Intake of the infrastructure
5. Maintaining the infrastructure
6. Preserving the infrastructure




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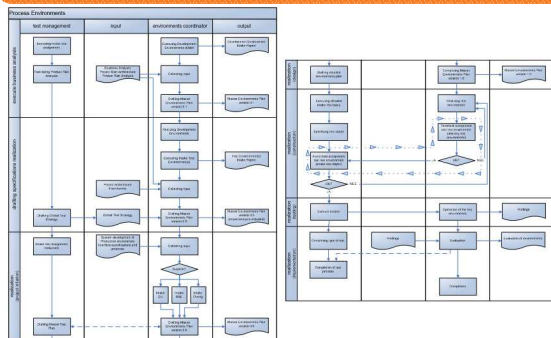
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### Complex processes




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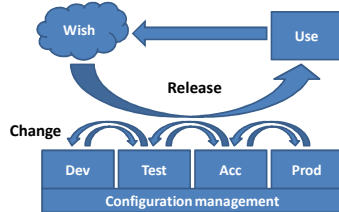
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## Set up processes - 2

### Maintaining the environment

- Configuration management
- Change management
- Release management




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## Arrange testdata - testdata is hot



"Someone got my Social Security number and stole my identity. Thank God - I hated being me!"

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## Arrange test data

- Application data
  - Dynamic data
    - Data to support the goal of the application
  - Static data
    - Configuration data
    - Selection data
    - Authorization on application
- Environmental data
  - System date
  - Network configuration
  - Authorization on environment




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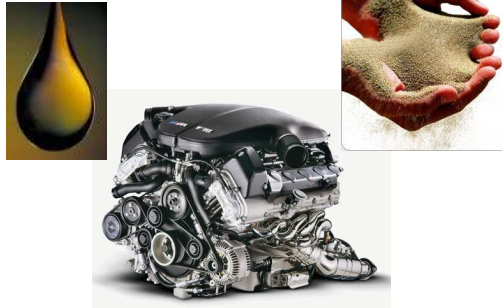
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### Oil or sand?



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### Issues with test data

- Define test data
  - Production data
    - Legal issues
    - Scramble (formal procedure)
  - Specific test data
    - What level of detail and the amount?
- Naming test data
  - Real names
  - Functional names
  - Test related names

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### Issues with test data

- Input test data
  - Regular system functions
  - Direct in database
  - Manual or automatic
  - Data history
- Maintaining test data
  - Cumulative
  - Periodic restore
  - Cleaning test data
- Ownership test data

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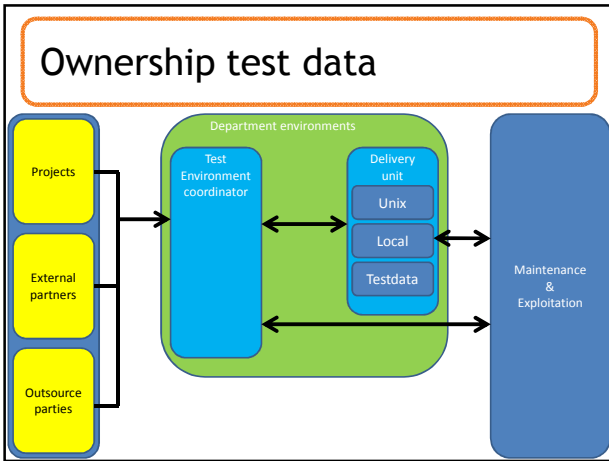
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### Use master/copy

- Principle for setting up new environments
- Each environment is exact copy of one other environment (the “master”)
- Controllable way is setting up new environments
- Known end result (quantity and quality)
- “Press on the button”

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### Issues “master/copy”

- What is the master?
  - Production system
  - Separate master, maintained next to production
- What is in the master?
  - Application
  - Test data
- Who maintains the master?
  - Project
  - Maintenance department
- Clean up!!!!

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### Install shared environments

- An end-to-end environment
- Shared use by different projects
- Well defined user processes
- Always up and running
- Continuous maintenance



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### Issues shared environments

- Use of the environment
  - Formal request
  - Analyze the impact
  - Timeframe
- Different versions
- Test data
  - End-to-end consistent
  - Simultaneous use
- Connections between systems
- Maintenance

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### Have an authorization strategy

- How to deal with authorization in the environment?
- Test users or real life users?
- Impersonal users (roles like “guest”) or personal users?



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## Wrapping it up

Some solutions:

- Define single point of contact
- Work with environment types
- Set up processes
- Arrange test data
- Use master/copy
- Install shared environments
- Have an authorization strategy



It involves a lot of people!

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## Work together



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