

Software Testing in Practice

Guest lecture at UAntwerpen
April 28, 2025

Koen De Hondt

mediagenix

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Agenda

Introduction

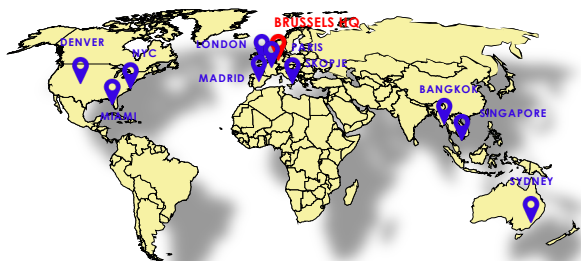
Setting the stage

Testing a complex software product

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mediagenix



A Trusted Partner to the media industry for 30+ years

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2bn+
Viewers



2,500+
Services



200+
Media Groups



400+
Experts



10,000+
Users

3

Content Strategy



Strategic
Planning



Strategic
Budgeting



Content
Intelligence



Audience
Intelligence



Recommendation



Curation



Conversation



Promotion

Personalization



Content Value



Title Management
& Discovery



Metadata
Enrichment



Production
& Acquisition



Contracts
& Rights



Linear
Scheduling



On-Demand
Scheduling

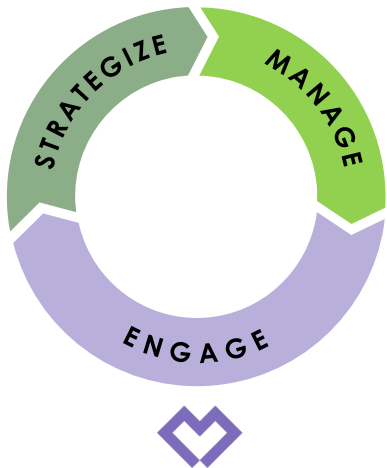


Scheduling
Automation



★★★★
Ratings
Prediction

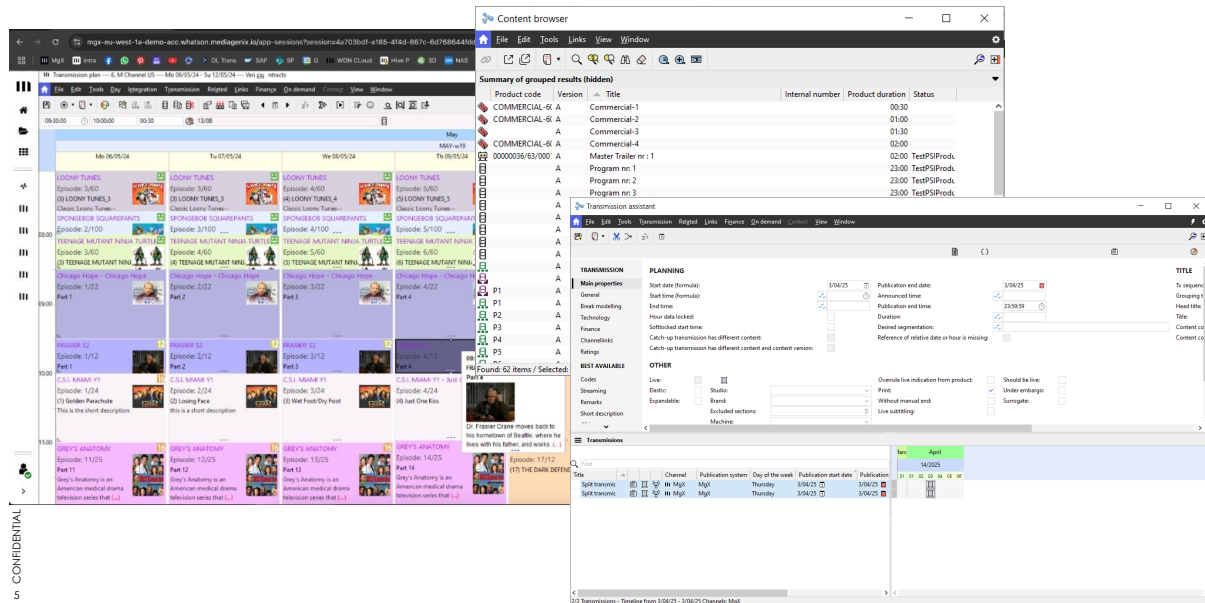
Scheduling



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Scheduling



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Koen De Hondt

1990-1999 Teaching and research assistant at VUB
 1992 One of the founders of Mediagenix
 1998 PhD Computer Science
 1999-2002 Object Coach at Mediagenix
 2003-2008 Team lead in QA team of EMC-BDG
 2008-2024 Web development positions at three companies
 2024- Program Manager at Mediagenix

Has software quality in his DNA

Practices test-driven development
 Loves pair programming

Uses Smalltalk since 1988
 Actively contributes to Pharo (pharo.org)
 Blogs on Smalltalk: all-objects-all-the-time.st

Has 15 years of experience with Ruby on Rails

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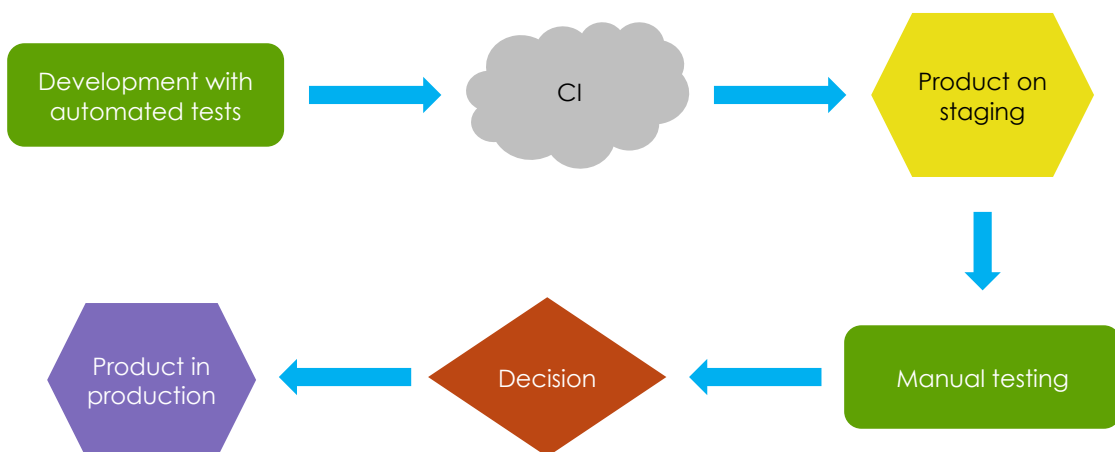
Ideal Situation



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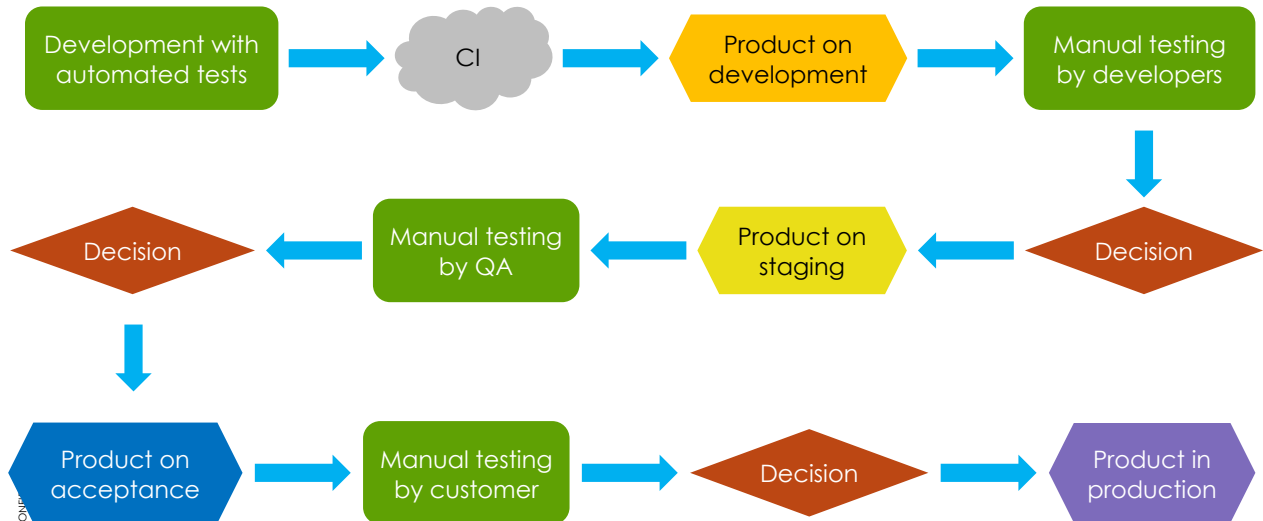
More Realistic Situation



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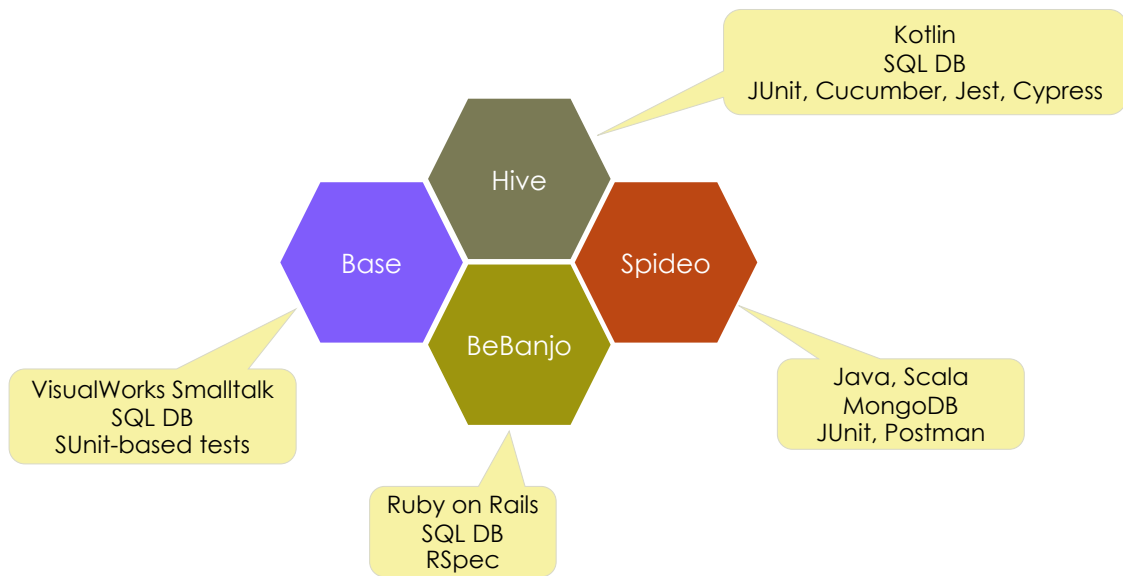
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More Complex Situation



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Mediagenix Platforms



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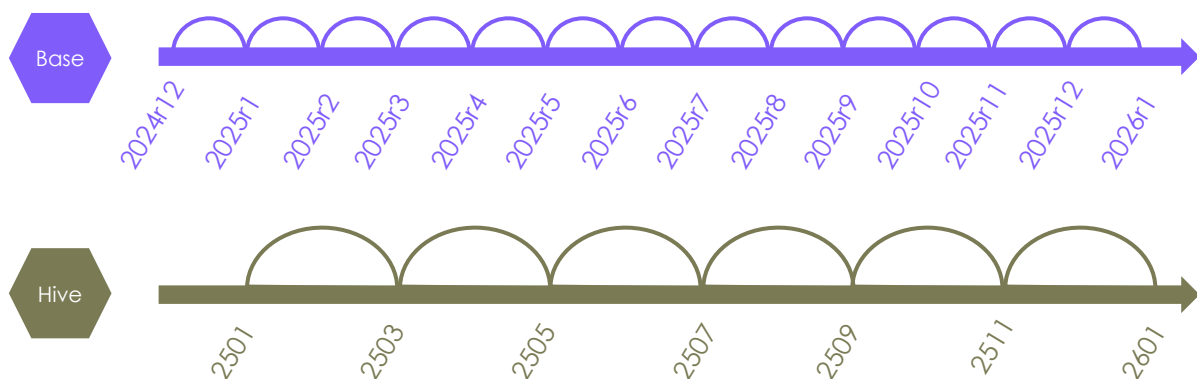
Integration of Platforms



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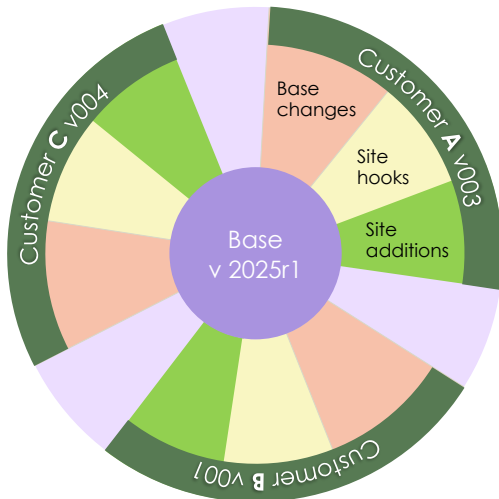
Release Schedule



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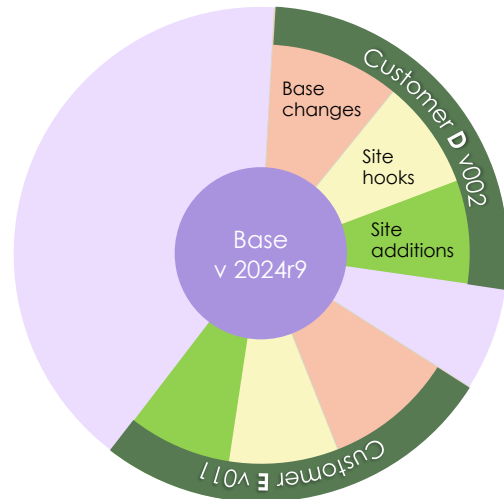
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Software Architecture: Base and Customizations



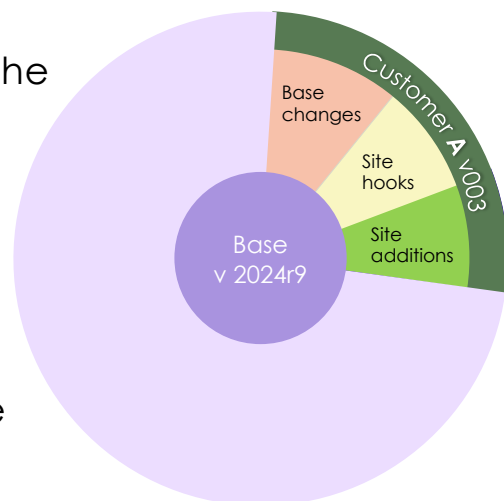
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The Testing Challenge

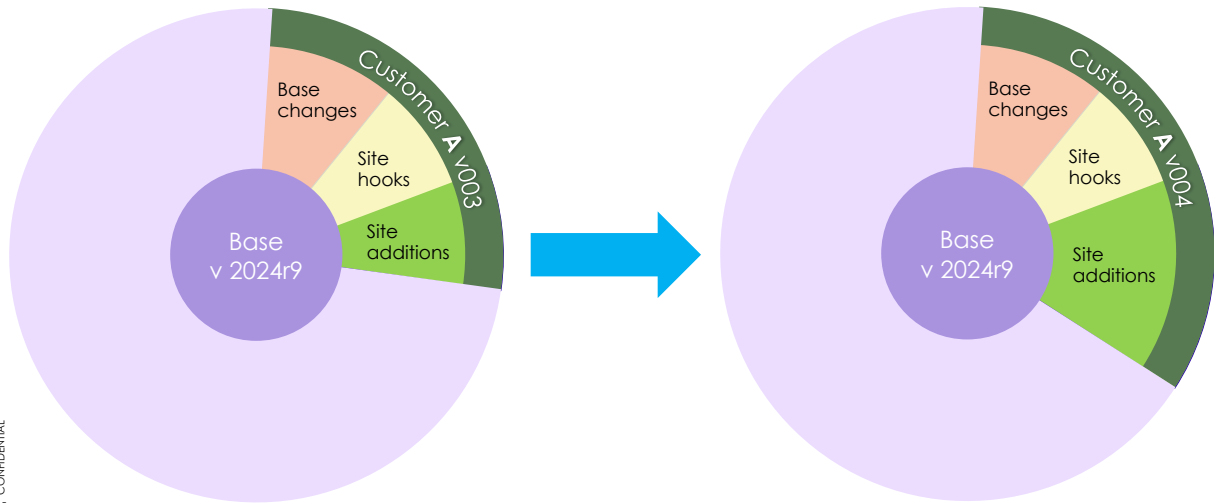
- How do you test Base and all the customizations?
- What is the impact of customizations on Base tests?
- Example: an extra mandatory field impacts all tests that save data



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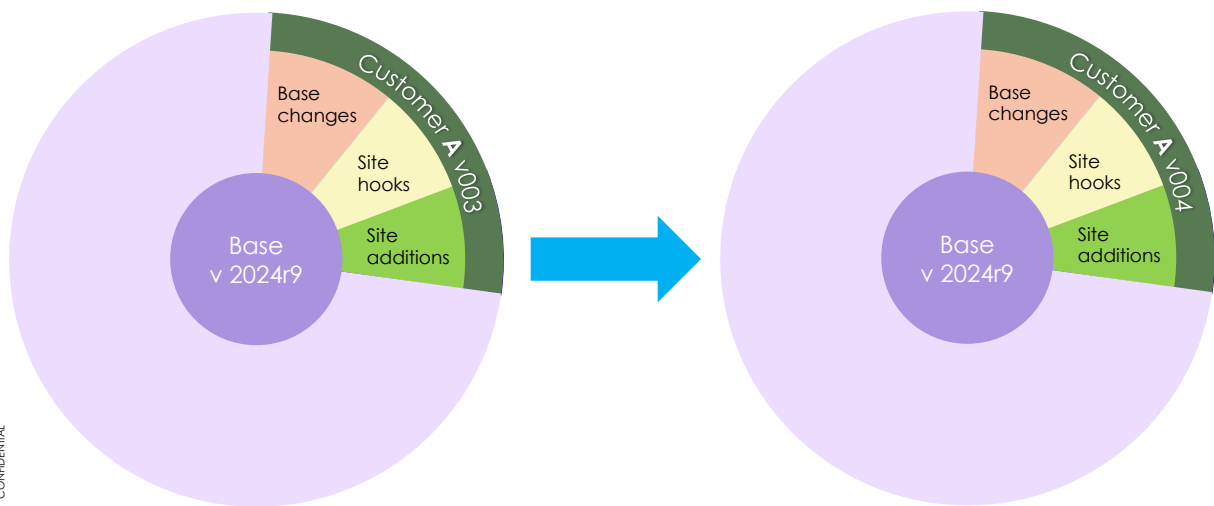
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Software Evolution: New Functionality



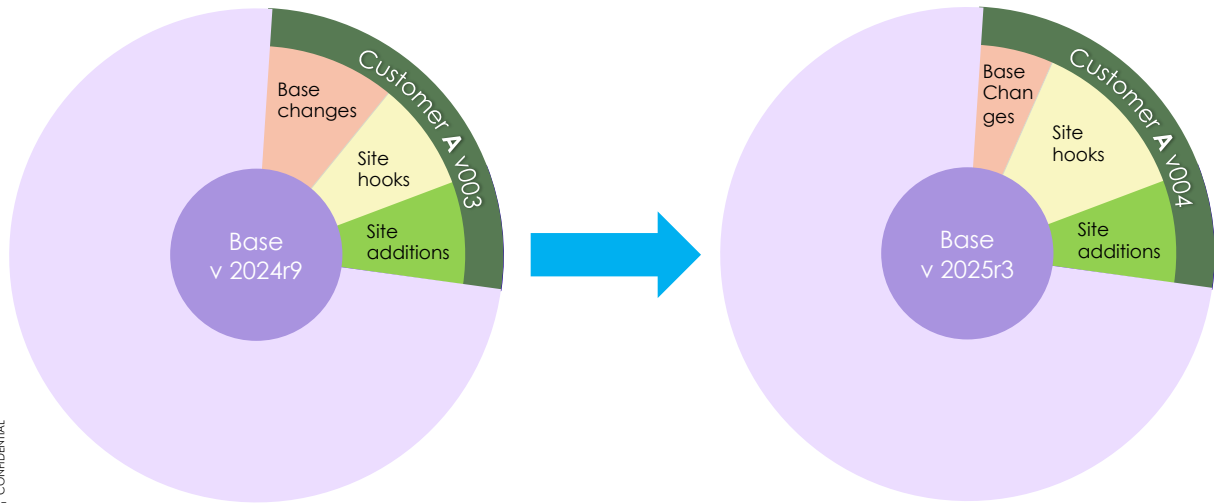
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Software Evolution: Bug Fix



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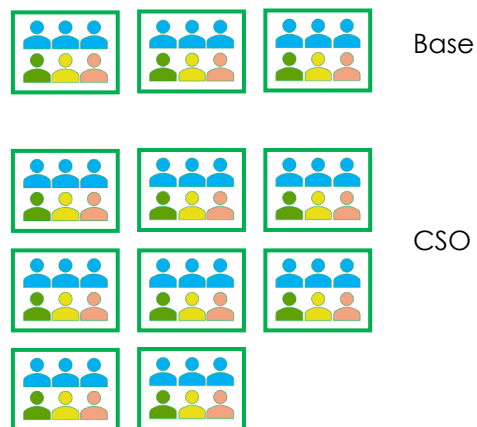
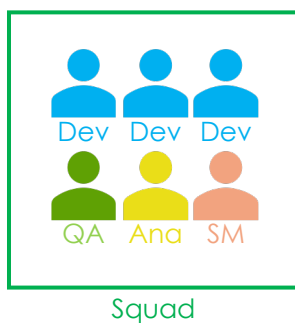
Software Evolution: Upgrade



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Organization and Roles



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Automated and Manual Tests



- Implementing tests in Smalltalk



- Writing test scenarios in an external test management system



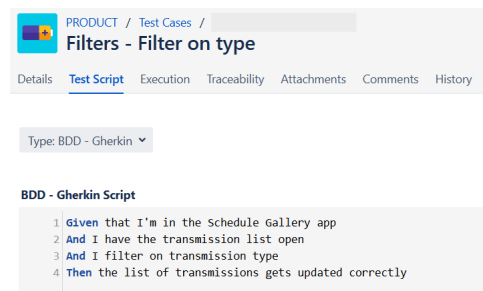
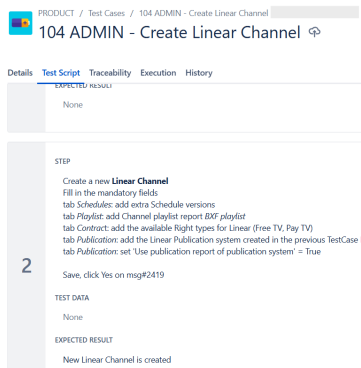
- Executing test scenarios manually
- Manual regression testing during upgrade projects
- Manual regression testing when integrated products change

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Manual Tests

- Step-by-step instructions
- Gherkin scripts (<https://cucumber.io/docs/gherkin/reference>)



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Statistics



Dev

220.000+ tests in Smalltalk



QA

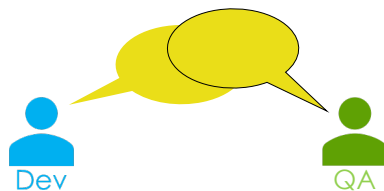
3800+ manual tests

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Process Issues Related to Manual Testing

- Who defines the acceptance criteria for a user story?
- Who writes the acceptance tests?
- What will be tested by automated tests and what will be tested manually?



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Issues with Manual Tests

- Manual execution is not scalable
- Different interpretations by different test executors
- Hard to avoid overlap with automated tests
- Test maintenance
- Are all 3800+ test cases still valid?

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Issues with Automating Manual Tests

- Automated tests do things differently from a manual tester
- Base is tested with an empty database
- Customizations are tested with customer databases
- Automating Gherkin scripts requires dedicated tools
 - Cucumber (<https://cucumber.io>)
 - Not available in Smalltalk (<https://all-objects-all-the-time.st/#/blog/posts/13>)

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Upgrades and the Role of the Customer

- Some customers do not like upgrades
- They prefer testing (manually) themselves
- Some upgrade projects take a long time
- Consequently, some customers use old Base versions
- Result: increased maintenance issues

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Conclusion

- Impact of technology choices
 - For Smalltalk, no external tools for testing are available
- Impact of business choices
 - Selling a product with customizations blows up the time to test
- Impact of organizational choices
 - Division between developers and QA specialists is suboptimal

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Future

- No Base changes in customizations
- Synchronize release schedules of different products
- Upgrade more frequently to minimize the number of Base versions in the field
- Avoid manual testing
- Better cooperation between developers and QA specialists

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Thank you!

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