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Scrum and Testing ...

The end of the test role?

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TestNet 2012

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Contents

- Scrum
- Scrum and Testing
- More than only software

- Note: not everything I tell is part of scrum

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About Bryan Bakker

- Test Expert
- Certifications: ISTQB, TMap, Prince2
- Member of ISTQB Expert Level on Test Automation
- Tutor of several test related courses
- Domains: medical systems, professional security systems, semi-industry, electron microscopy
- Specialties: test automation, integration testing, design for testability, reliability testing

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Scrum experiences

- Within Sioux almost all projects developed with Scrum
- Started on Scrum project in feb 2010

- I am a software test expert → Not a Scrum Expert
  → Not a Scrum Master

About Sioux

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niko Illuminating ideas.

technicolor

SONY

PHILIPS

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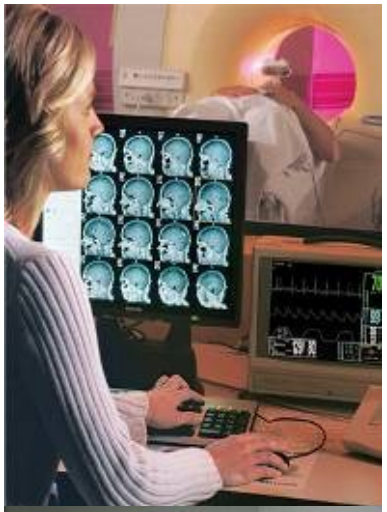

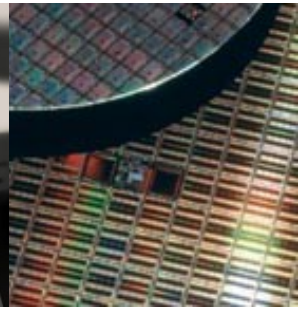

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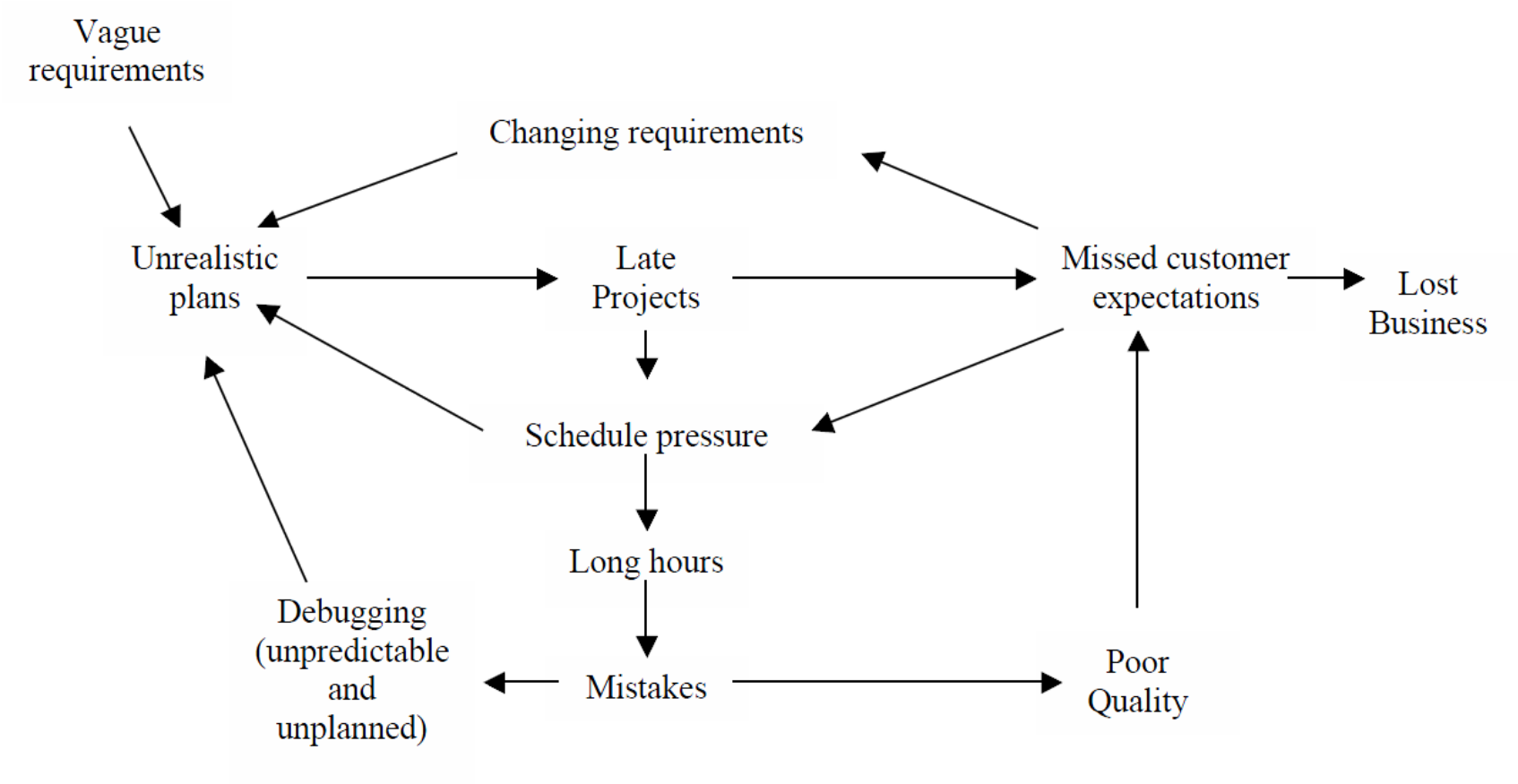
Well known picture



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Wishes and facts

- Wishes:
  - Customer knows what he wants
  - Developers know how to implement it
  - Nothing will change along the way
- Facts:
  - Customer discovers what he wants
  - Developers discover how to implement it
  - Most things change along the way

→ Solution: Agile development (e.g. Scrum)

OK... that's a wish, and not a fact

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Manifesto

- We have come to value:

Individuals and interactions	over	Processes and tools
Working software	over	Comprehensive documentation
Customer collaboration	over	Contract negotiation
Responding to change	over	Following a plan

Source: *An introduction to Scrum* by Mike Cohn.

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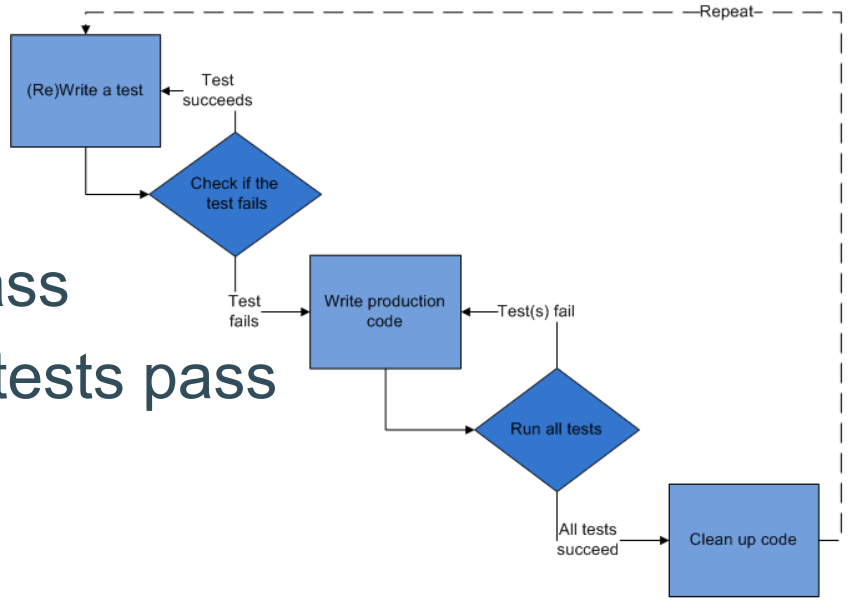
Test Driven Development

- Not part of Scrum, based on eXtreme Programming
- But used typically in Scrum projects

1. Create a new test
2. See the new test fail
3. Write code to make test pass
4. Build, run all tests, see all tests pass
5. Refactor (cleanup)



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Test Driven Development

- Performed by software developer
- Tests are continuously executed
- Code is not delivered when tests fail
- Testing is part of the process
- Quality awareness increases
- Automation is a must!

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Test Driven Development

- Add tests to regression test
- Regression test is run on each build
- Regression detected immediately
- Short feedback loop
- Safety net at re-designs

→ **Test Engineers should become Software Engineers or look for another (non-agile) assignment!**

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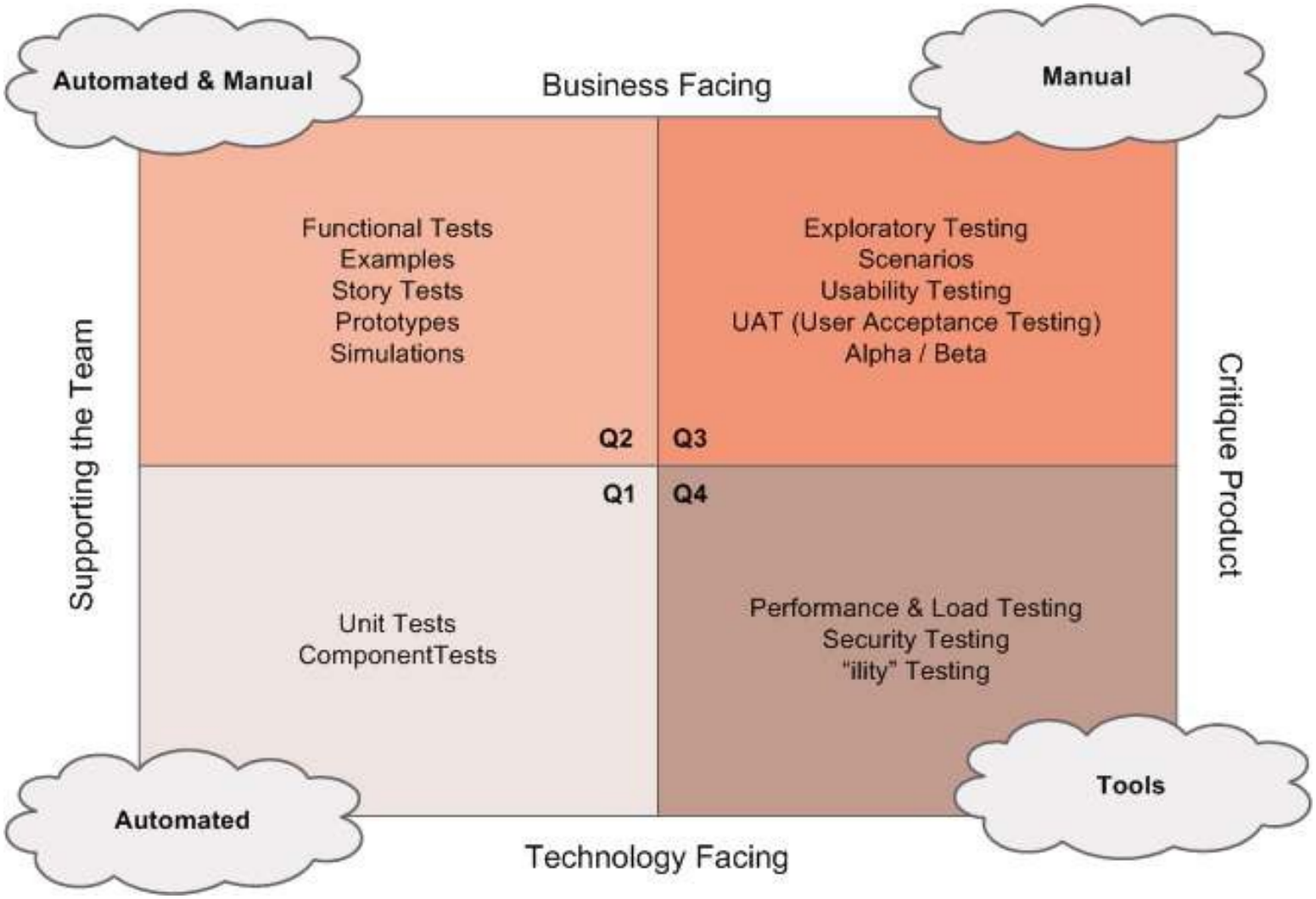
Agile Testing Quadrants



Lisa Crispin, Janet Gregory

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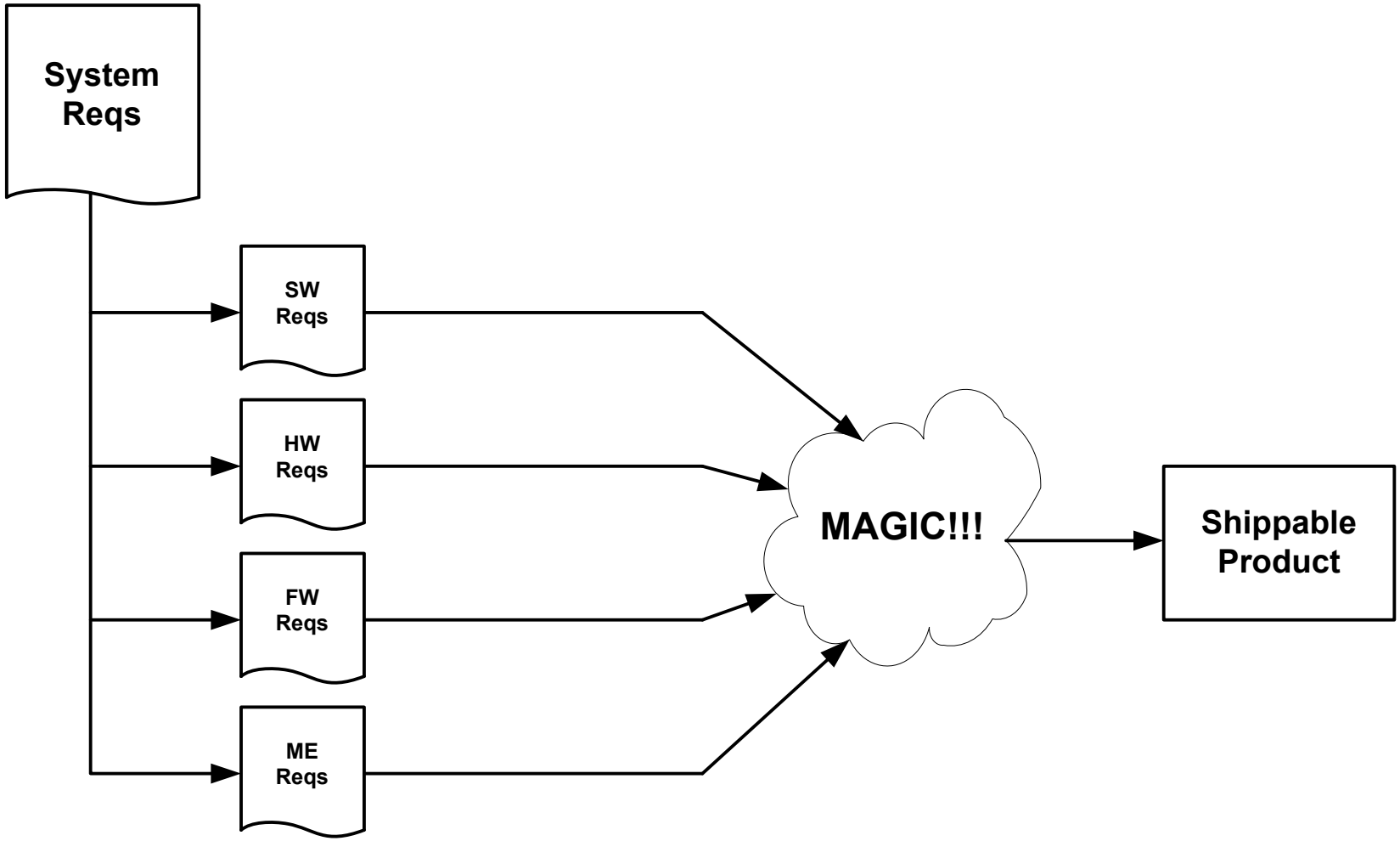
Role of Test Engineer

→ **Test Engineers should become Software Engineers or look for another (non-agile) assignment!**

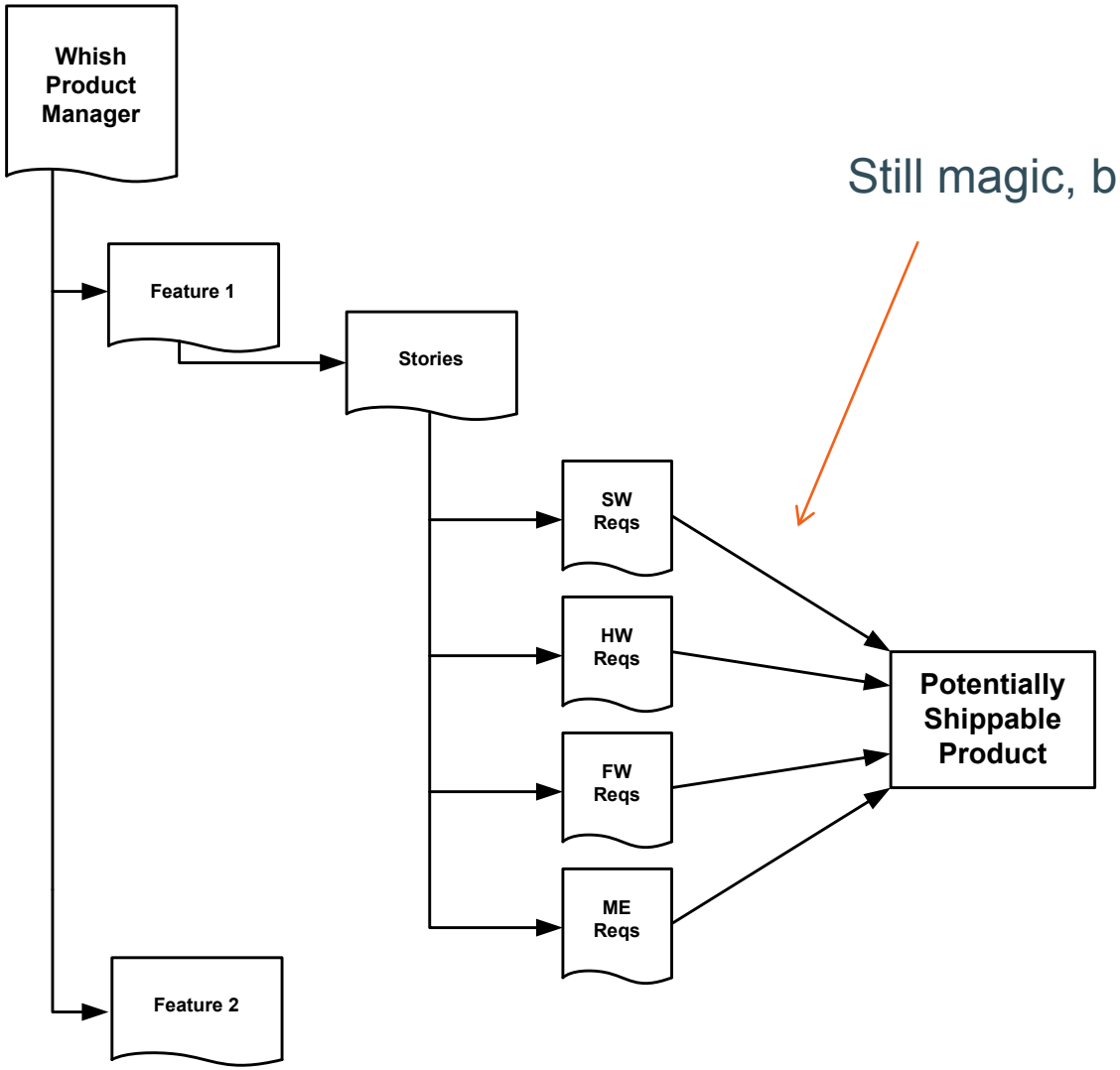
- In fact a Test Engineer can add a lot of value
- In the Scrum team

→ **Move Test Engineers from independent test teams into scrum teams**

Multiple disciplines



Multiple disciplines - Agile



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Problems/challenges

- Hardware and Software developed concurrently
- Development machine not the target
  - Used for testing (e.g. TDD)
  - Can differ substantially
- Hardware running ahead of software
  - Problems in hardware detected late
  - and hopefully fixed in software
- Or, hardware available late in project
  - Software cannot be tested on target hardware

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Problems/challenges

- Hard to “scrum” hardware and mechanics
- But:
  - There are more deliverables than the final hardware
  - Documents (e.g. interface specifications)
  - Prototypes
  - Alternative hardware (competitor, old-version)
  - Stubs and simulators (software alternative), test interfaces
- Remember: we want to reduce risk as soon as possible
  - It might be worth to spend a few euro’s on extra prototypes
  - Although in the end, they are “thrown away”

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Problems/challenges

- In some environments Hardware/Mechanical development “rather” predictable
- Choice can be not to disturb them with a new process
- Software can still benefit from Scrum

  → Whole project can still benefit from Scrum

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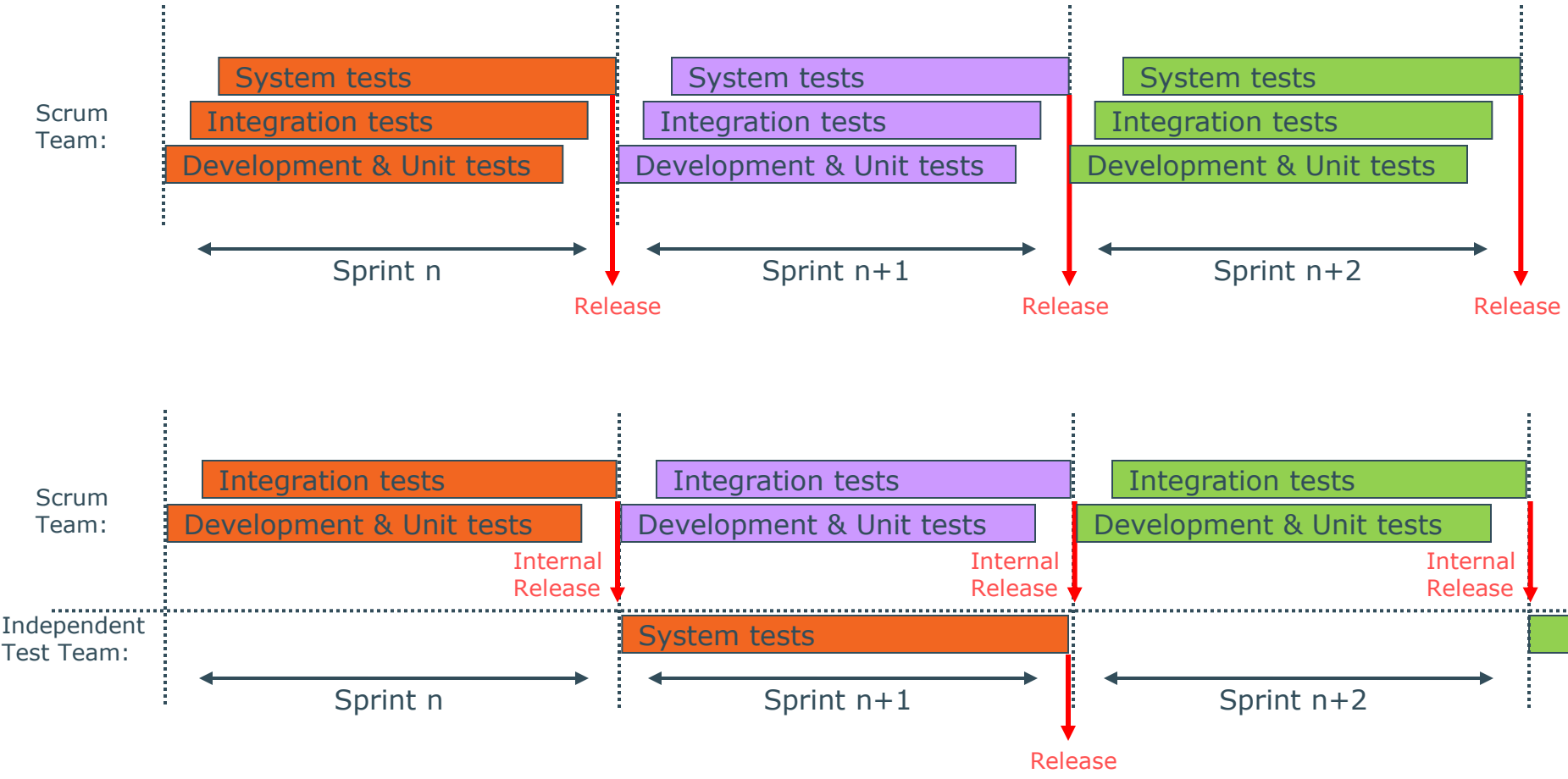
System level

- Anyway...
- System test activities must still be performed
- As soon as possible
- Targets needed (might be sparse)
- In sprint, but often not practical

- Take system test out of sprint, and let separate team look at this:

→ **Independent (system) test team**

Independent Test Team?



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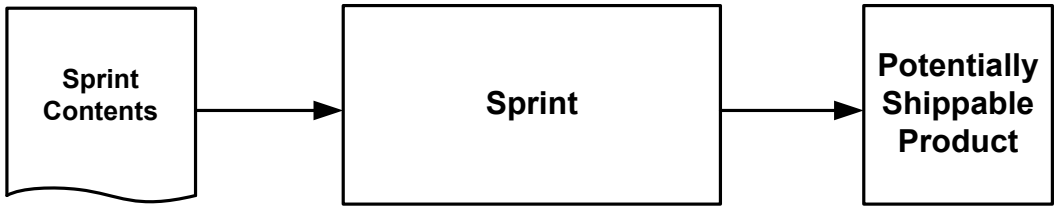
Multiple Scrum teams



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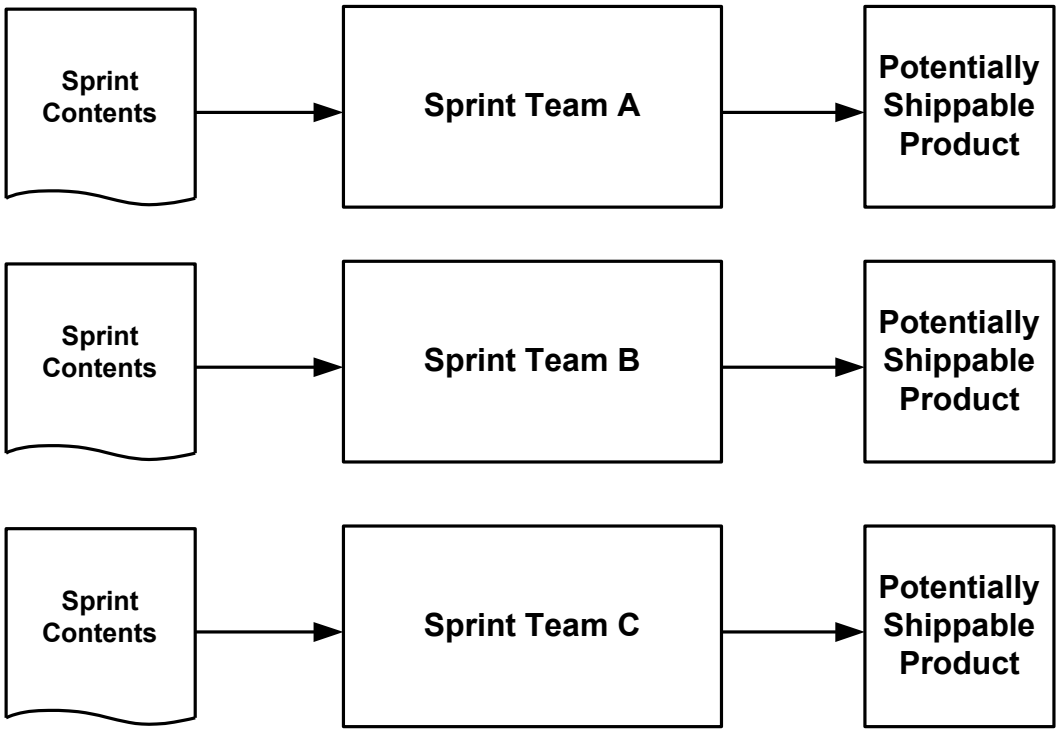
Multiple Scrum teams



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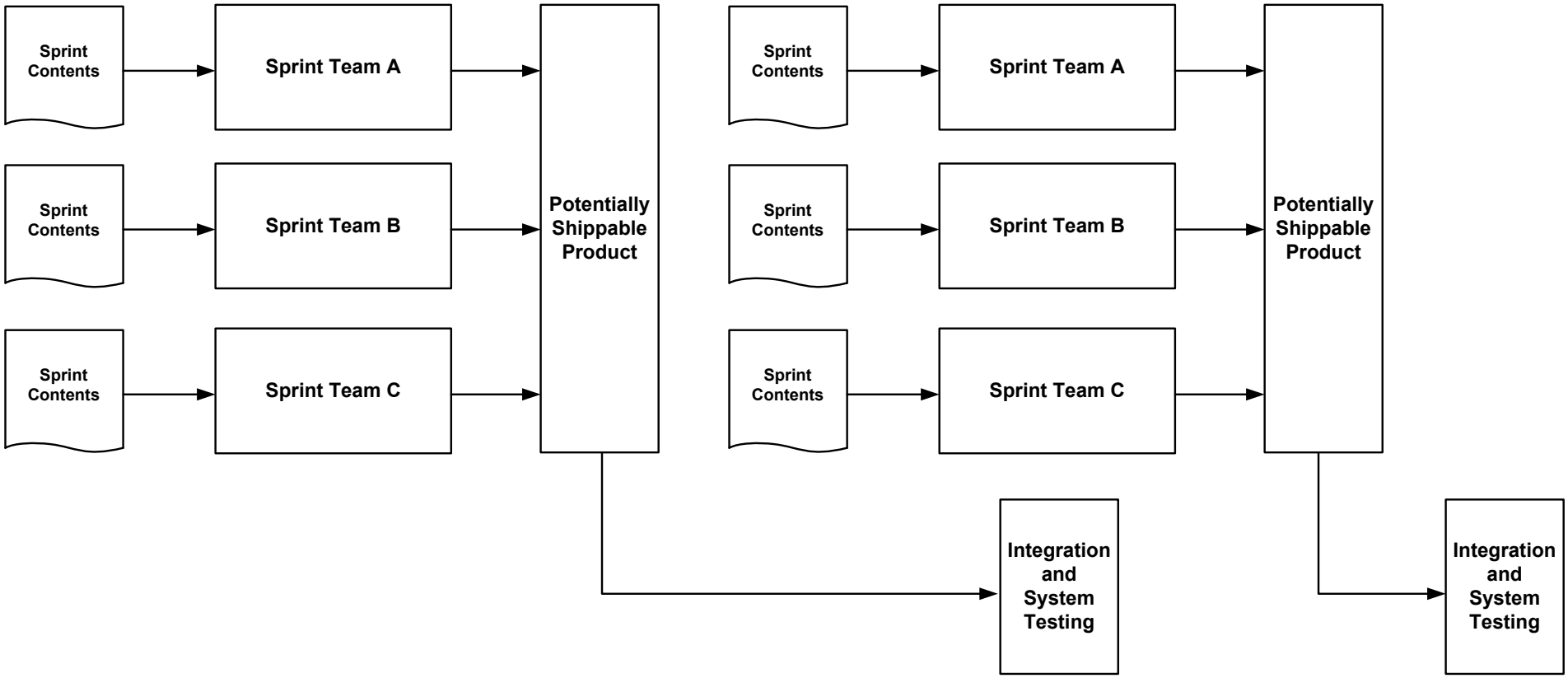
Multiple Scrum teams



Role of Test Engineer

→ **Move Test Engineers from independent test teams into scrum teams**

- Independent test engineers still needed
- Probably less, so some can move to scrum teams

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What about regulations?

- Satisfying standards, regulations each sprint?
- Probably not...
- Mandatory at the end of development (End Game)

- Think of interim releases
- Overhead can be large (e.g. FDA approval)
- But benefit can be high
  - Customer feedback
  - Problems with standards, safety, etc detected early
    → early risk reduction

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Evidence… traceability?

- When formal process is needed to release a product
  - Safety
  - Industry standards
  - Regulatory approvals (e.g. FDA)
  - Overall quality characteristics

Best practise:

- Can be done outside the Scrum teams
- By independent teams
  - Test, regulatory, quality, (hardware) standards, ...
  - Link to the Scrum teams, but still independent

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Final thoughts

- Scrum is not the solution for all problems
- You still need good people
- Scrum is not new
- Focus on team work and quick feedback
- (Independent) Testing still necessary
- Scrum possible in (multi-disc.) product development
- Scrum helps when outsourcing is applied
- Integration and test automation are crucial

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Questions

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