Testing in a Highly Regulated Industry

- What can we learn from other industries?

Matthias Rasking
Technical Chair, TMMi Foundation and
Managing Director, Sixsentix Germany
20 years of Testing

1999
AMS
Started as manual tester in the Telco industry

2001
Joined Accenture as technical test consultant

2010
TMMi Foundation as Deputy for model development
(worked on Maturity Levels 4 and 5)

2016
Joined ISO/IEC Working Group 26 for the development of
ISO/IEC 29119 Software Testing Standards

2019
TMMi Foundation Technical Chair and started Sixsentix Germany
for Test Automation and Test Consulting
• Not-for-Profit Organization based in UK, established in 2006 to promote an open process reference and assessment model for testing
• Career Path from Professional to Assessor and Test Process Improver
• Globally accepted with 17 local chapters including Turkey with the support of the Turkish Testing Board
• www.tmmi.org
Standards everywhere
It happens to the most regulated industries...
New “standards” arise...
“Herr, dazu hat Sie der König zum Stabsoffizier gemacht, dass Sie wissen müssen, wann Sie nicht zu gehorchen haben.”

„Sir, the king made you a staff officer so that you know when you have to disobey.”

„Efendim, kral sizi bir görevli yaptı, böylece ne zaman itaat etmemeniz gerektiğini biliyorsunuz.“
But what does “Agile” really mean?

Manifesto for Agile Software Development

We are uncovering better ways of developing software by doing it and helping others do it. Through this work 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

That is, while there is value in the items on the right, we value the items on the left more.
The Financial Services industry faces both regulatory and agile requirements.

Commerzbank: Building a laboratory for the next era of banking

Kenny Maclver – January 2019

ECB – BaFin - KWG – MaRisk - BAIT

Agile Transformation at ING – A Case Study

By Neil Perkin | October 25, 2017 | AgileBusiness, Disruptive Innovation, Organisational Structure
However, regulatory measures alone do not help.

Four Japanese banks' online systems fail.

BANK FAIL TSB website outage locked customers out of accounts.

NatWest down: Online banking and mobile app fail on Black Friday.

London Stock Exchange hit by worst outage since 2011.
Solutions learned from the financial industry

Bring teams together

• Get rid of organizational barriers while ensuring incompatible roles are still separated

Take the whole institute on a journey

• Business agility, not software development agility

Explain and lead the journey

• From Awareness to understanding to acceptance and commitment
Pharma has a long history of strict regulations and adapted software delivery.
It’s the operational level that brings this to life and supports Quality...

Focus on What

Operational Quality (Controlling & Consulting)
Quality Engineers (QE)

Corporate Quality (Procedures & Surveillance)
Quality Manager (QM)

Focus on Why / Risks

Focus on How / Operational Profile

Management

Operational Quality (Know How, Doing)
Project Support Engineer (PSE)
The key to any change is gradual and continuous improvement

LEVEL 1 INITIAL

LEVEL 2
- Test policy and strategy
- Test planning
- Test monitoring and control
- Test design and execution
- Test environment

LEVEL 3
- Test organization
- Test training programme
- Test life cycle and integration
- Non-functional testing
- Peer reviews

LEVEL 4
- Test measurement
- Product quality evaluation
- Advanced reviews

LEVEL 5
- Defect prevention
- Test process optimization
- Quality control

To Risk prevention
From defect identification
How do ISO and TMMi tackle this?
How do these reports help us?

- Extension of standards for “new” topics
  - Example: AI quality characteristics such as bias and non-determinism as part of ISO 25010 Product Quality

- Interpretation help for practitioners
  - Example: Mapping of agile concepts to processes in ISO/IEC 29119-2 or practices in TMMi

- Explanation of intent
  - Example: How does TMMi support DevOps intentions and vice-versa
Remember the quote?

Shu-Ha-Ri

守 破 離

shu
obey fundamentals repetition

ha
detach self recognition innovation

ri
separate creative technique transcendence
In the end, it depends on skilled individuals and their mindset.

**Principle #8 – Unlock the intrinsic motivation of knowledge workers**

- Provide Autonomy with Purpose, Mission, and Minimum Possible Constraints
- Create an Environment of Mutual Influence
  → **Disagree where appropriate**

**Principles behind the Agile Manifesto**

Improving test process performance is carried out through **incremental and innovative** process and technological improvements.

Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
Thank you for your attention

Questions and Answers
Thank you for your attention

Matthias Rasking
Technical Chair, TMMi Foundation
Managing Director, Sixsentix Germany

matthias.rasking@tmmi.org
Matthias.rasking@sixsentix.com