The Redistribution of Testing: Where to Innovate and What to Renovate

Paul Gerrard, Gerrard Consulting

www.eurostarconferences.com
The Redistribution of Testing: Where to Innovate and What to Renovate

Paul Gerrard
paul@gerrardconsulting.com
Twitter: @paul_gerrard
Web: gerrardconsulting.com
Theme: If testing is being redistributed, what do we need to re-invent?
(Why) is a re-think required?
The Redistribution of Testing

• At Eurostar 2011 in Manchester some people were saying testing as we know it is dead or dying
• We think that testing isn’t dying…
  – It’s being “redistributed”
  – There will be significant upheaval for many people
• There are pressures outside testing that will force these changes upon us
• If you aren’t ready to change, you might have to look for a different job:
  – Some doors are closing. (That might be a good thing)
  – But other doors are beginning to open 😊
The new testing squeeze

- Developers adopting test-first, unit-testing, continuous integration
- Stable software, sooner? Good!
  - But are fewer system and acceptance testers needed?
- Larger projects treat testing as a standard, factory process
  - Certified testers are a commodity
    - “Anyone can test” attitude prevails
    - Offshored testing puts unskilled certified testers out of a job
- Some Agile projects squeeze testers out
  - Is it testing? Can testers cope?
  - Is Agile testing test assurance in the small?
  - A different set of skills are required
- Testers as ‘eyes and ears’ of product owners?
A methodological shift…

<table>
<thead>
<tr>
<th>1990s</th>
<th>2000s</th>
<th>2010s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterfall</td>
<td>Agile</td>
<td>Continuous</td>
</tr>
</tbody>
</table>

• A methodological shift from staged to iterative and now ‘continuous’

• Just as we get used to Agile, we now need to consider continuous ‘Specification by Example’ (SbE) approaches (also see TDD, ATDD, BDD)

• SbE promotes a continual process of specification, exampleing, test-first, and continuous integration

• Where does the tester fit?
Specification by example

• SbE promises much:
  – Consistent requirements, stories/examples tests and code for the lifetime of a product
  – Extremely rapid end-to-end turnaround – 24hours?
  – Continuous Integration is the heartbeat, life-support and early warning system

• Of course, workflow, user experience and end-to-end testing are still required

• But these can be managed by business analysts, UX experts and the stakeholder community.
The testing ‘crunch’

• Test teams are being pushed…  
  – From the ‘low-value’ norm of unskilled teams…  
  – To upstream, business-savvy, workflow-oriented, UX-aware testing experts, with new tools

• There is a blurring and maybe merging of roles:  
  – BAs who can test… or testers who can BA?

• How many of the current generation of testers and test managers will cope with this change?
Predictions

For the next five years

For an article setting out my reasons and thinking:
Predictions 1

1. Half of the current onshore testing community will see their job disappear
2. Business test planning will become part of up-front analysis and design (where it should be)
3. Functional unit testing driven by stories (mostly); Structural testing defined by developers
4. Requirements and business models will become ‘executable’ through stories and examples
5. Some system tests and most acceptance tests increasingly business model-driven
Predictions 2

6. Business models plus stories and examples will increasingly be ‘contractual’

7. System Test detailing – the creation of executable manual tests will be outsourced

8. Manual system test execution will be outsourced (and in the cloud)

9. Maybe half of all acceptance tests will be automated in CI…forever

10. New tools will emerge that manage requirements, stories, scenarios, workflows, prototyping and testing
Where to Innovate and What to Renovate
A goal network (aka results chain or logic model)

Every project has a network of dependent interim and ultimate goals threatened by risks.

Your strategy will identify the test activities that will measure goal achievement and evidence these risks.

The ultimate business goal
Test activities overlay the goal network (not all goals in scope)
Test strategy and requirements validation are part of analysis

- More emphasis on business test analysis
- Test strategy is a key part of business analysis
- Business model includes stories, scenarios and process workflows
- Continuous delivery depends on trusted requirements
- Advocate test as BOTH goal and risk based
- We address risk AND measures achievement
- Work closer with BAs or even become one
- Requirements validation is part of analysis (DeFOSSPAM)
Let go of feature testing (checking)

- Features checking is better done by developers with tools
- Developers lose their safety net, but take on responsibility for their share of finding bugs
- Scrap incident reporting (bugs fixed the same day that they are found)

- Example and validate requirements with good stories and scenarios
- System ‘feature’ tests shift from checking to exploratory
- System business tests use business scenarios plus workflows, e2e
From traditional delivery…

… to Continuous Delivery
The Deployment Pipeline

- Automated Unit tests
- Automated Acceptance Tests
- Manual User Tests
Structured → Agile → Continuous

We are in transition

• Developers are adopting new architectures and a more streamlined approach to development
• Requirements half-life of weeks or months
• Agile evolving towards continuous delivery
• Kanban-Ichiwichi-Hokikoki-Kamikaze-Driven Development – Whatever!
• A hybrid Agile-Structured process:
  – Structured Analysis, Agile Delivery?
  – That would be SAAD
• Continuous delivery → executable specifications’
Continuous delivery requires continuous testing and new skills

- Re-distributed functional testing
- A focus on continuous test and assurance
- Service integration replaces system integration
- (Many) acceptance tests automated for all time

- Non-functional skills - UX, security, privacy, performance are in demand (always was)
- Balancing competing non-functional requirements
- User tests focus on changes, reconciliation; less focus on e2e.
Test management shifting to supplier management

- Unskilled, onshore test teams are being outsourced, offshored
- Trusted requirements can be contractual
- Scripting tests from trusted requirements is largely mechanical – so outsource it

- Scripted test execution, automated or manual is outsourced too
- Role of test manager is shifting:
  - Managing supplier relationships, not teams
  - Managing responsibilities and information, not test assets
Test management shifting to project intelligence management

- Testing is not a phase, it’s a continuous service
- Testing delivers data, information, intelligence
- Testing provides data on what the business cares about:
  - Achievement
  - Risk
  - Coverage (confidence)
- Testers in a technical bubble need to look towards the business
- Testing measures both technical and business achievement
- Test management shifts to project intelligence management.
What about tools?

- Traditional toolsets support 1970s thinking:
  - Staged/waterfall
  - Testers and testing separated from the rest of project
  - Mostly manual, scripted testing
  - Tabular & test case-based (Excel works fine. Still!)

- Existing tools focus on test as a purely technical, internal activity dominated by software testing as defined in the certification schemes (70s thinking)

- It’s hard to see how these tools can evolve.
Tools: closer to stakeholders

- Stakeholder management: identification, responsibility, commitment, expectations
- Business modelling: processes, collaboration, workflows
- Goal, results and benefits realisation management
- Risk identification, assessment, risk response
- Requirements elicitation, analysis and validation
- Dictionary-based impact analysis, traceability, test coverage and reporting
- Test support: from clerical record-keeping towards knowledge management, modelling and test design.
Tools: project instrumentation and reports against business models

- The business model, stories and scenarios drive automated checking (ATDD, BDD, SbE etc.)
- Automated checking will includes callbacks to report test status to provide continuous feedback
- Manual, scripted tests might run as cycles, but test status feedback is continuous, not monthly/quarterly
- Manual exploratory test logging adds “colour” to the stark, black and white status of automated checking
- Test status and coverage reporting by goal, by risk, by process, by stakeholder, by user role, business concept – on demand.
Summary
Redistribute testing; reinvent your role – your choices as test lead

1. Managing/monitoring outsourced/offshore resources who detail and execute tests
2. Move upstream with stakeholders and analysis
   – Providing testing and assurance skills to business
3. Managing the Business Model knowledge base;
   – Analysing business impact of change
4. Provide an assurance function to teams, projects, and business stakeholders; be the “TESTMASTER”
5. Manage the project information flows to/from development teams and the CI/test process.
The phase after development is **REWORK**, not **Testing**

- Managers might never name this phase correctly – it exposes them to the truth
- Testing must align with project activity and development, not follow it
- We have to move away from the siege mentality of ‘independent testing’
- Testers must let go of the test phase, embrace the change, not resist it
- Make that leap.
Thank-You

check out businessstorymanager.com to see how we support these ideas with technology.
The Redistribution of Testing: Where to Innovate and What to Renovate

Paul Gerrard
paul@gerrardconsulting.com
Twitter: @paul_gerrard
Web: gerrardconsulting.com