

Test automation in an agile context

Test strategy determination

Manual testing or automated testing?

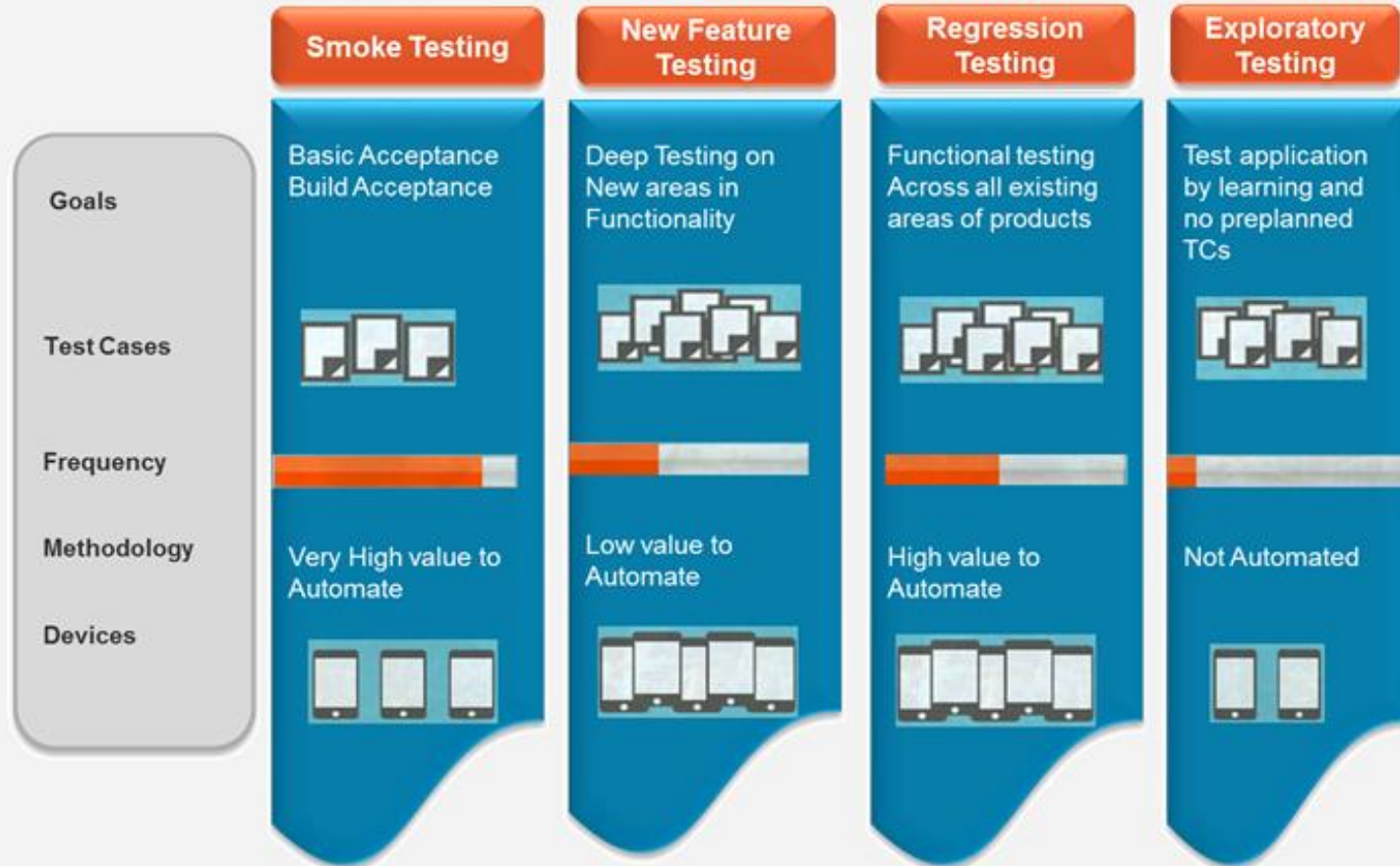
- ▶ Which levels of testing to automate?
- ▶ Which parts of the application NEEDS TO / CAN / COULD be automated?
- ▶ Which tool and frameworks to use?
- ▶ How much test coverage is needed?
 - Device, OS, browser, screen resolution, language, network
- ▶ Strategy for maintaining the scripts?
- ▶ How to structure and organize the test code?
- ▶ How to deal with the test data?
- ▶ What is the starting information for test automation?
- ▶ How are the execution results reported and analyzed?
- ▶ How is the automation process linked to the manual testing process?
- ▶ Who will do the automation?



Configuration madness

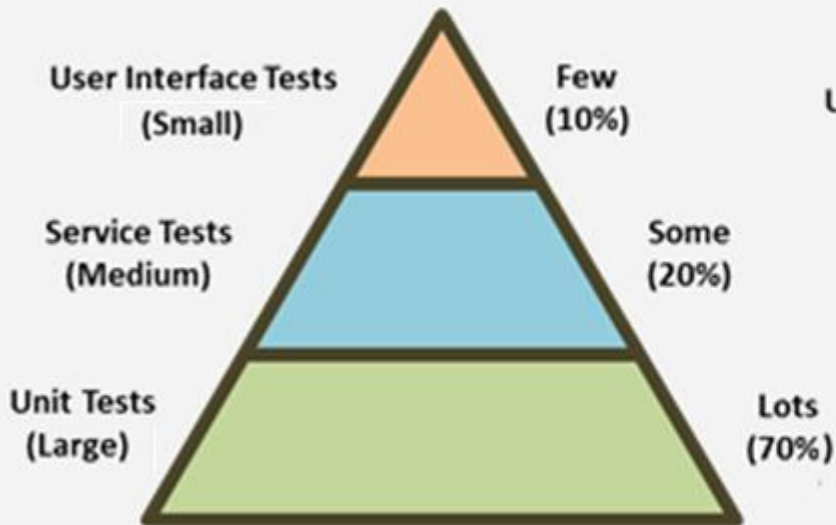
									Delivery 1			
									Date	Date	Date	Date
									01. Item 1	02. Item 2	01. Item 2	02. Item 3
Priority	Config Type	Device	OS	OS Versi	Browser	E	Language	Screen				
P0 - Baseline	Desktop	Mac	Mac	OSX10.6	Firefox	26	NL	XL				
P1 - High	Desktop	Mac	Mac	OSX10.9	Chrome	33	FR	XL				
P1 - High	Desktop	Win	Windows	8	Chrome	35	EN	L				
P2 - Low	Desktop	Win	Windows	8	IE	11	DE	L				
P2 - Low	Desktop	Mac	Mac	OSX10.8	Safari	6	FR	XL				
P2 - Low	Desktop	Win	Windows	7	IE	9	NL	L				
P0 - Baseline	Phone	iPhone4	iOS	iOS5	Safari		EN	S (I)				
P1 - High	Phone	Z10	Blackberry	10	BBbrowser		FR	S (p)				
P1 - High	Phone	Lumia620	Windows	WinPh8	IE	10	NL	S (p)				
P2 - Low	Phone	Nexus4	Android	AND4.4	Chrome		DE	S (P)				
P2 - Low	Phone	HTC_One	Android	AND4.1	ANDwebkit		DE	S (p)				
P2 - Low	Phone	iPhone5	iOS	iOS7(.1)	Safari		EN	S (P)				
P0 - Baseline	Tablet	SGH_Tab3-10.1	Android	AND4.2	Chrome		NL	M (p)				
P1 - High	Tablet	iPad4	iOS	iOS6	Chrome		DE	L (I)				
P1 - High	Tablet	Surface	Windows	Win8RT	IE	10	EN	M (I)				
P2 - Low	Tablet	Nexus7	Android	AND4.4	Chrome		FR	M (L)				
P2 - Low	Tablet	iPadMini	iOS	iOS7(.1)	Safari		NL	M (L)				
P2 - Low	Tablet	SGH_Tab2	Android	AND4.0	ANDwebkit		FR	L (I)				

What to automate?

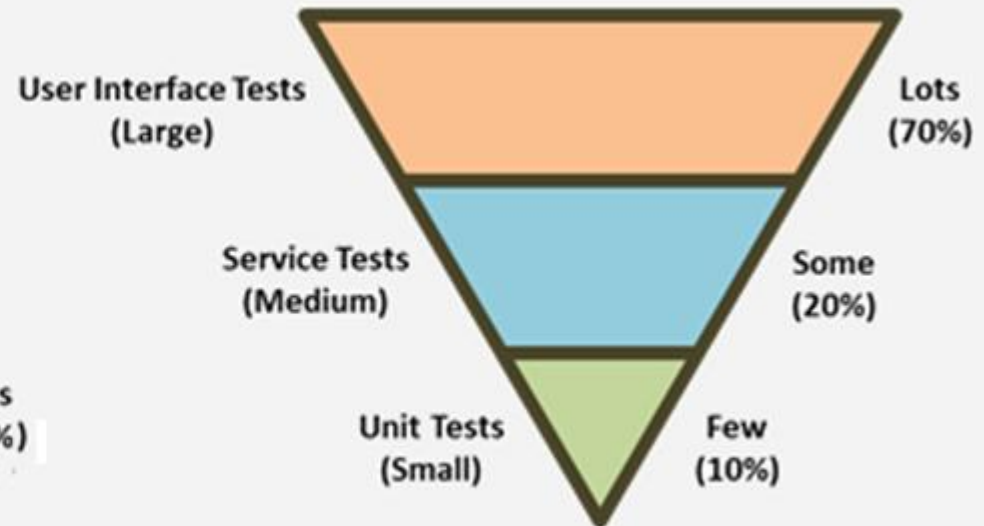


Where to automate?

Non linear



Traditional



Triangle of Mike Cohn

Traditional automation

Record & playback

- Quick & dirty
- Standard functionalities
- High maintenance (hard coded, redundancy,...)

Data driven

- Separate data from script
- Minimal coding skills needed
- Test data maintainable by non-technical profile

Function driven

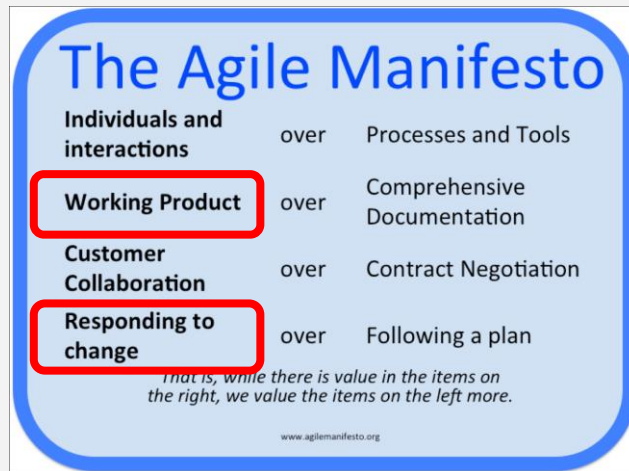
- More control on script itself
- Lower maintenance
- Maximum reuse, avoiding redundancy

Keyword driven

- Call to functions
- Building test cases by non-technical profiles
- High modularity

Test automation in agile context

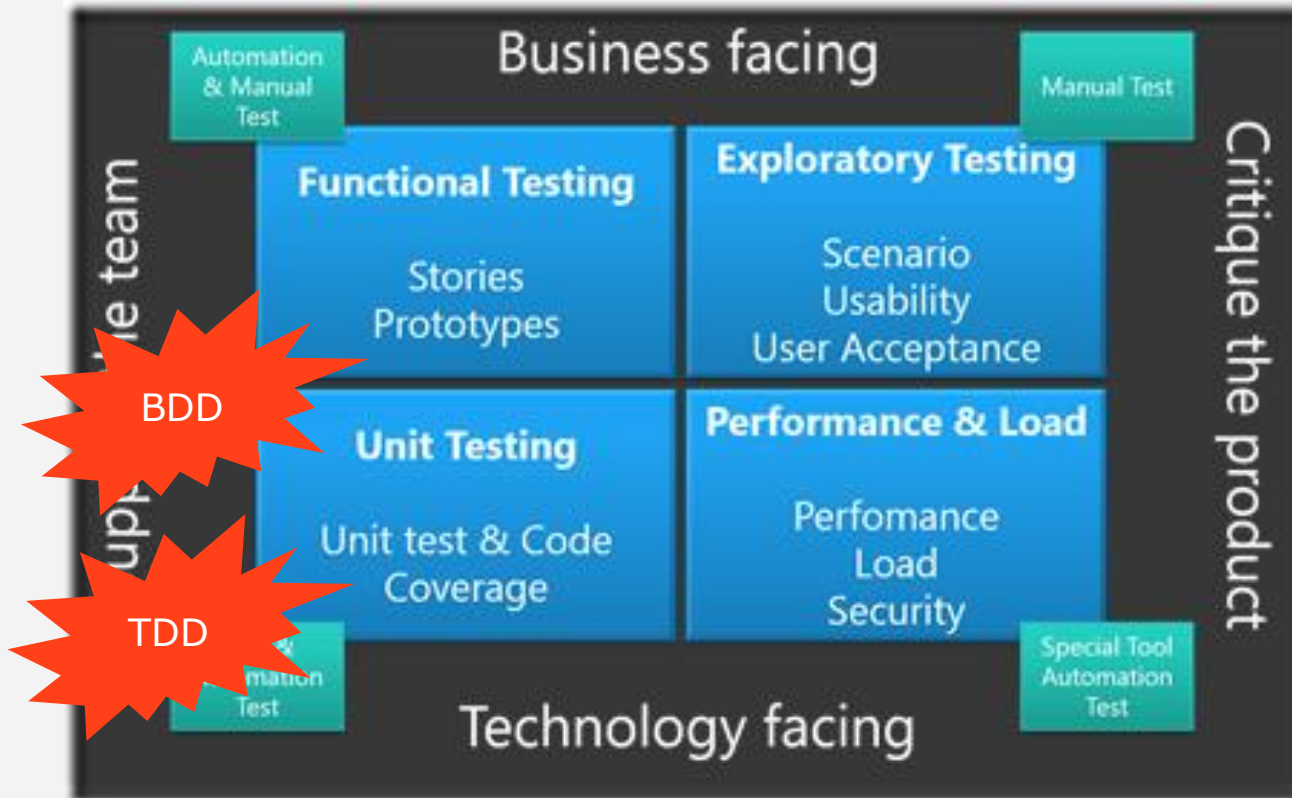
The need for SPEED



The need for an
AUTOMATION APPROACH

The need for
REPEATABILITY

Marick Test Matrix



Test Driven Development (TDD)



- ▶ Ensure developed code is without defects
- ▶ Technical, unit level
- ▶ Developer



Source code

```
01. public class MaClasse{
02.
03.     public static int calculer(int a, int b) {
04.         int res = a + b;
05.
06.         if (a == 0){
07.             res = b * 2;
08.         }
09.
10.         if (b == 0) {
11.             res = a * a;
12.         }
13.         return res;
14.     }
15. }
```

Code of the test

```
01. import junit.framework.*;
02.
03. public class MaClasseTest extends TestCase{
04.
05.     public void testCalculer() throws Exception {
06.
07.         assertEquals(2, MaClasse.calculer(1,1));
08.     }
09. }
```

Behavior Driven Development (BDD)

Update account info

As a user

I want to fill in my profile details

In order to use more features of the app

Scenario: update account profile

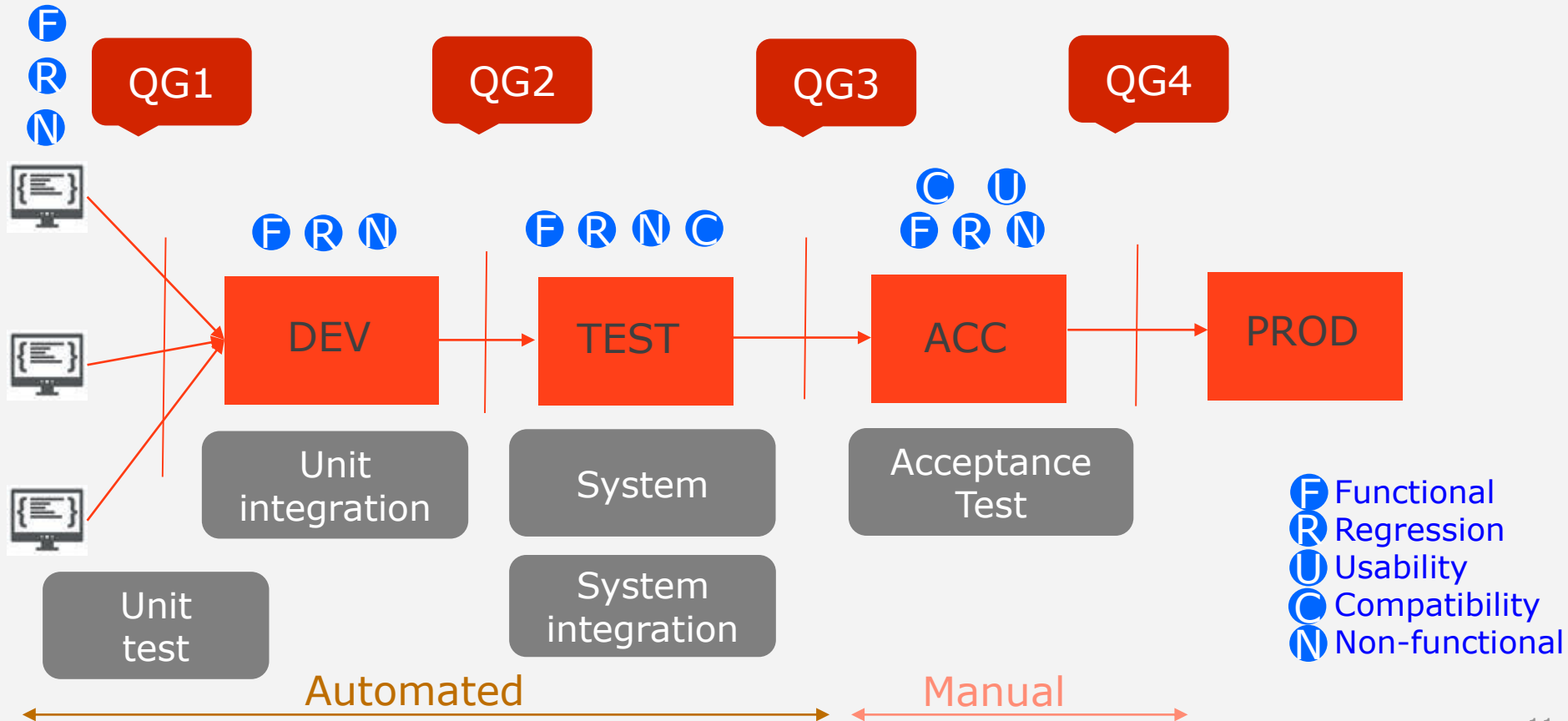
Given I am a authenticated user

When I update my provide details

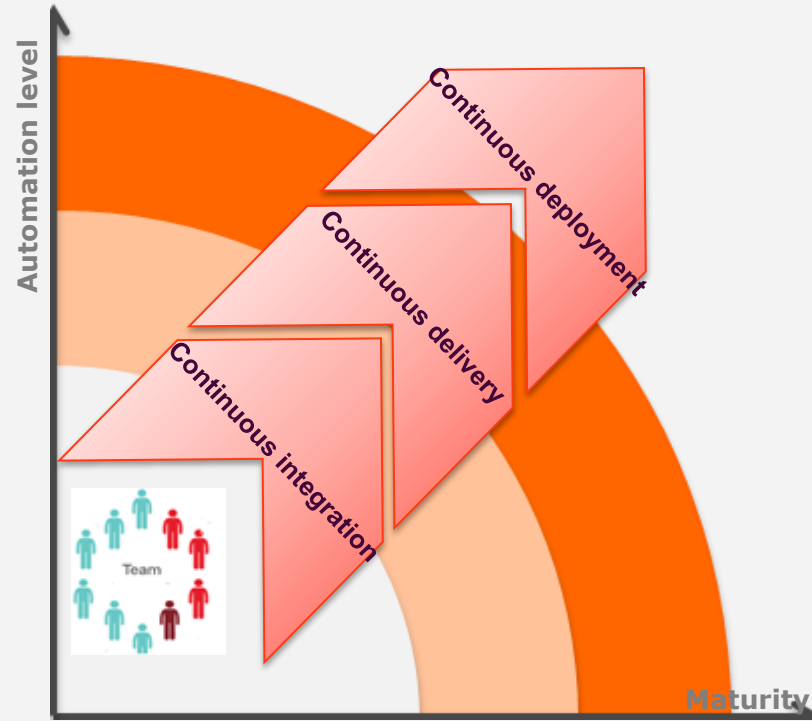
Then I should see my profile details are updated

- Behavior driven
- Bridging the gap between business (problem domain) and IT (solution domain)
- Verifiable business value

Example of logical build pipeline



Maturity of development proces



Best practices



- If it hurts, do it often
- 80% - 20% capacity aim
- Target velocity
- Be clear on the value of a metric
- Pushing down the triangle of Mike Cohn
- "A fool with a tool is still a fool"
- Be transparent
- Respect the methodology
- Automating manual tasks
- Time to market
- Continuous delivery is a mindset



Q&A



Thank you

Guy Van Put
guy.van.put@sogeti.com