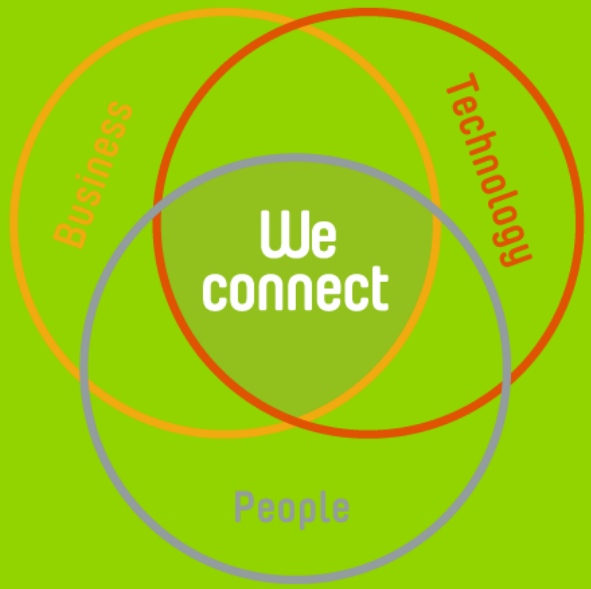
A structured approach to identify the best fitting test automation solution for a specific project



René Biewald

Communications & Testing Solutions

brightONE GmbH

Rene.Biewald@brightone.de

brightONE

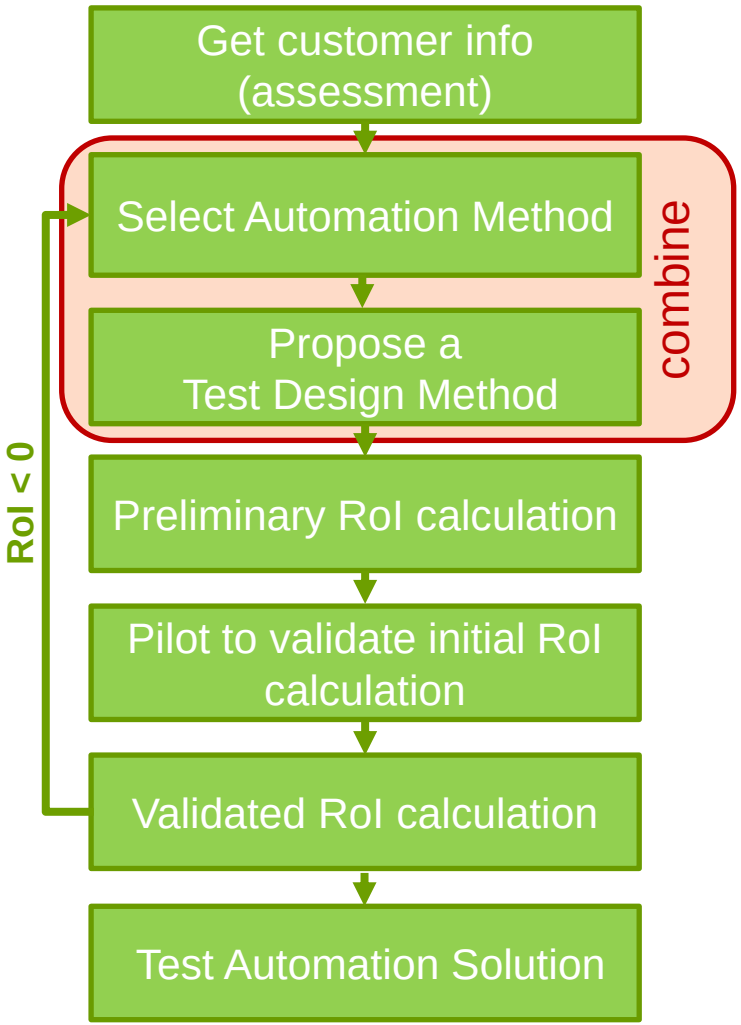
How to improve test productivity…

…for long running projects with regular updates?

- **Automation of Test Execution** is a proven methodology
- A logical step forward: **Automation of Test Design**

Sharing our experience in selecting appropriate test automation solution(s)

Selection Process



automation & test goals	requirements interfaces	test process test cost	etc.
manual	script based	model based	etc.
state charts	activity diagrams	data mapping	etc.

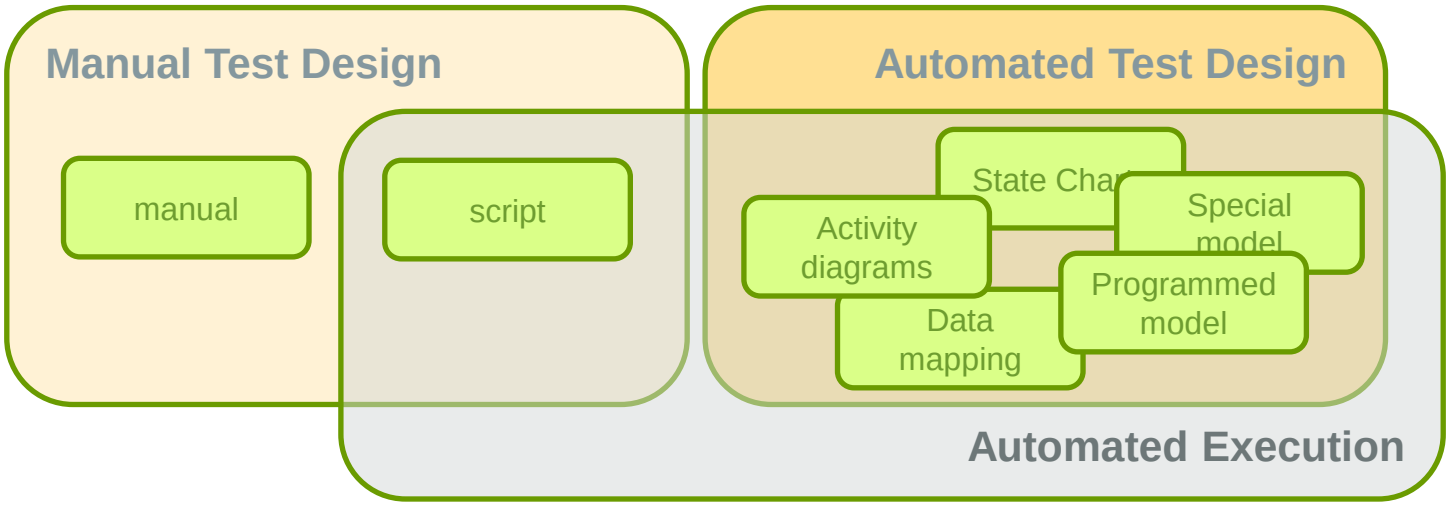
based on input from customer and historic data

select representative functionality parts

based on pilot results

solution with best RoI according to customer goals

Selecting Test Design Method



Criteria	Explanation (examples)
MBT recommendation?	test complexity & coverage, spec modifications, multi platform
Requirements/Interface Spec	**user stories, workflows, text description, state charts, …**
Test goals	**main user stories , all scenarios, ….**
Automation goals	cost /time savings, Cost of none Quality, coverage, …
Current test	no, manual, scripts
Test base	no, weak, well developed
Readiness to adapt process?	no, partly, yes

Identifying best Test Design

brightONE

Example 1: Banking Application

- Customer & internal application to calculate credits and other financial services

Criteria	Evaluation	State	Activity	Script	Manual
Complexity of test	High	x	x	x	
Test coverage	High	**x**	(x)		
Spec modifications	Continuously extending (agile)	x	x		
Multi platform test	No				
Requirements	User stories + calc algorithms	**x**	x	x	
Test goals	All calc variants & user stories	**x**	(x)		
Automation goals	Continuous integration	x	x	x	
Current test / Test base	None				
Ready to adapt process	Yes, open for adustments	x			
Preliminary RoI		**>0**			
RoI after pilot		**>0**			

State machine MBT successfully implemented,
Compare “Deploying MBT-based test automation in an agile development project for financial industry“

Identifying best Test Design

brightONE

Example 2: Telco Security Management System

- Project runs since 8 years, each year one new major release + ca. 5 hotfixes

Criteria	Evaluation	State	Activity	Script	Manual
Complexity of test	High	x	x	x	
Test coverage	Medium-high	x	x		
Spec modifications	Ca. 10 CRs each year	x	x		
Multi platform test	No				
Requirements	State charts, detailed test cases	**x**	**x**	**x**	
Test goal	All user stories & critical scenarios	**x**	**x**	**x**	
Automation goal	Cost savings (test quality is ok)		x	x	
Current test / Test base	Manual / well dev-d, coverage ok		x	x	
Ready to adapt process	Not really	?	?	x	x
Preliminary ROI		**>0**	**>0**	**>0**	
ROI after Pilot		**<0**	**>0**	**>0**	

RoI of the best fitting test design methods

Example 2: Telco Security Management System

State diagrams (negative RoI):

- Huge modelling effort to reach detail level of existing test case base

Script based/Activity diagrams (positive RoI):

- Easy to automate existing test case base
- Medium initial invest

Script based

- **High** effort for modifications
- RoI: small

Activity diagrams

- **Small** effort for modifications
- RoI: high

Conclusions

Test Automation for long-running projects with regular updates:

- Selection of the appropriate test design method is crucial for success
- Modelling approach depends mostly from
  - Quality improvements needed, the given maturity of the test process, readiness for change

  and less from
  - test goals and functionality
- **The criteria-based selection for an appropriate test design method creates an essential base for a positive RoI**

Q&A

For further information and discussion
visit us at the brightONE stand or at www.brightone.de