



Mx test automation

from Unit- to Regressietest



To ease the waiting time...

www.superp.nl (Test & Mendix services)

www.menditect.com (Test Automation)

www.tricentis.com (Test Automation)

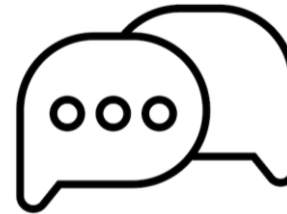
Before we start...



This session will
be recorded



Slides and
recording will be
shared via mail



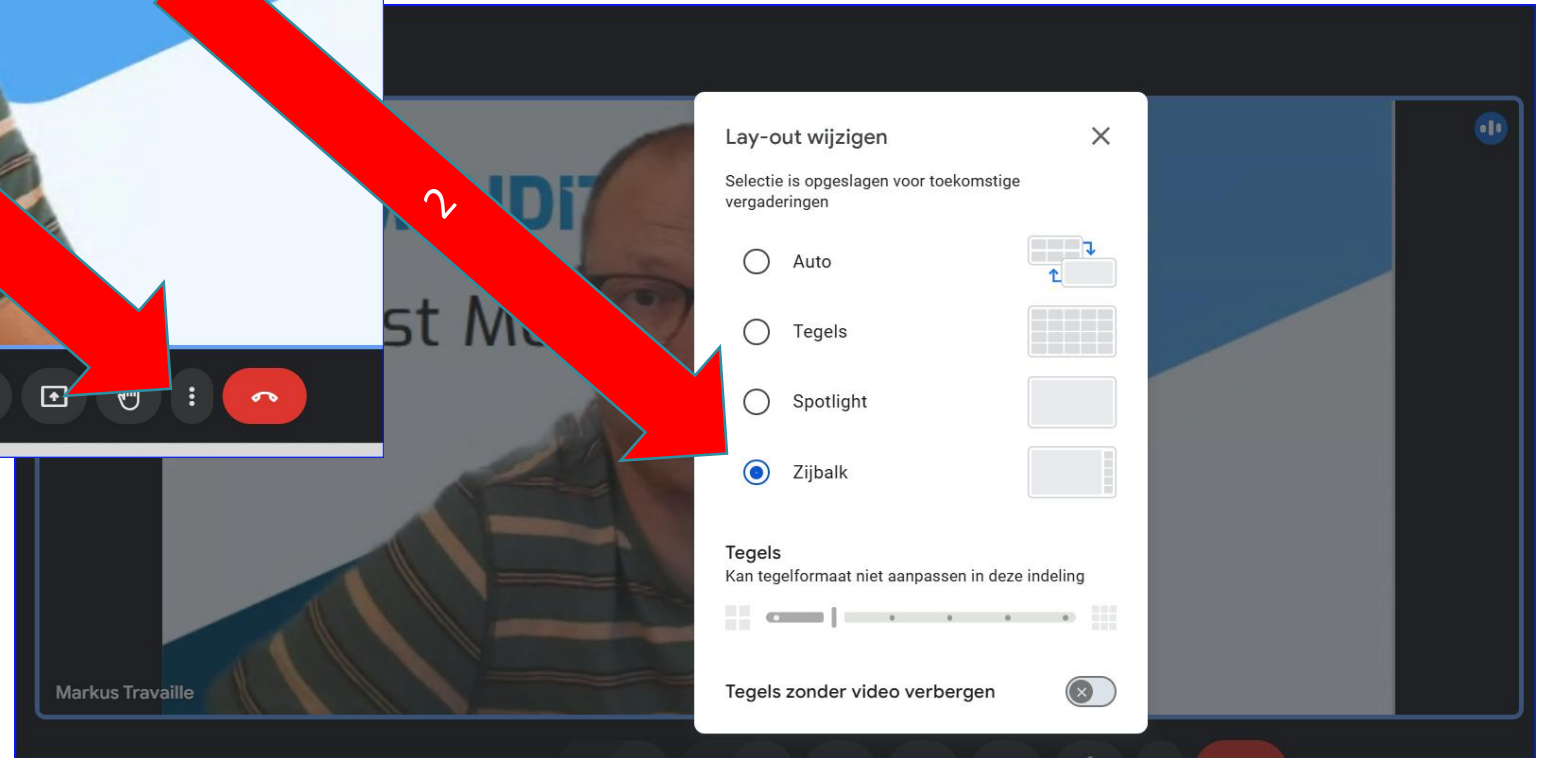
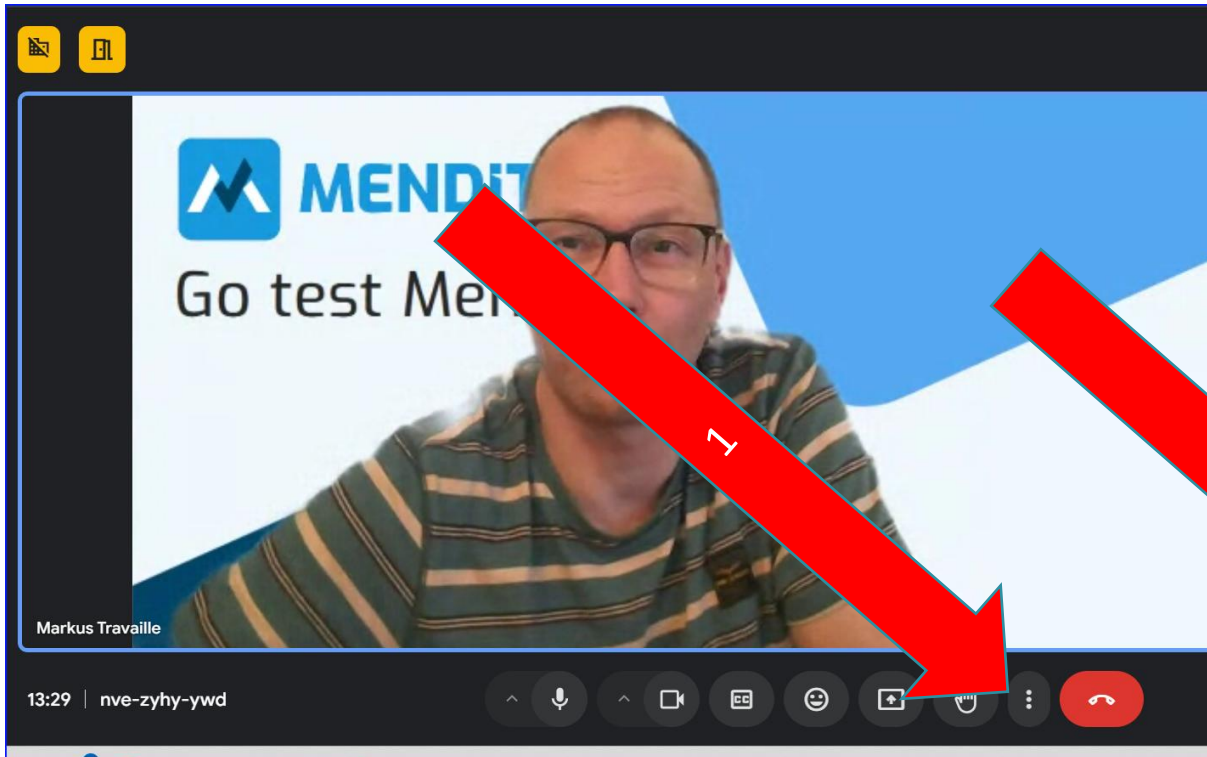
Please ask
questions via the
chat at the end of
this session



Please mute your
microphone



Google Meet tips



1. Goto settings
2. Set lay-out to “Zijbalk”
3. Press F11 for full screen



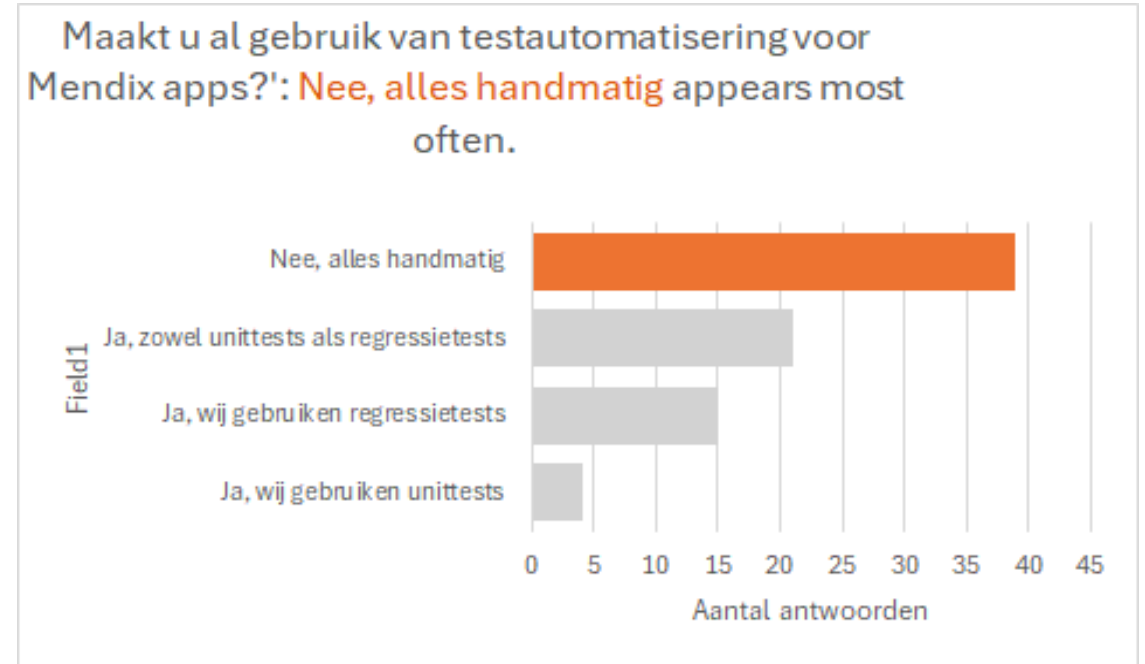
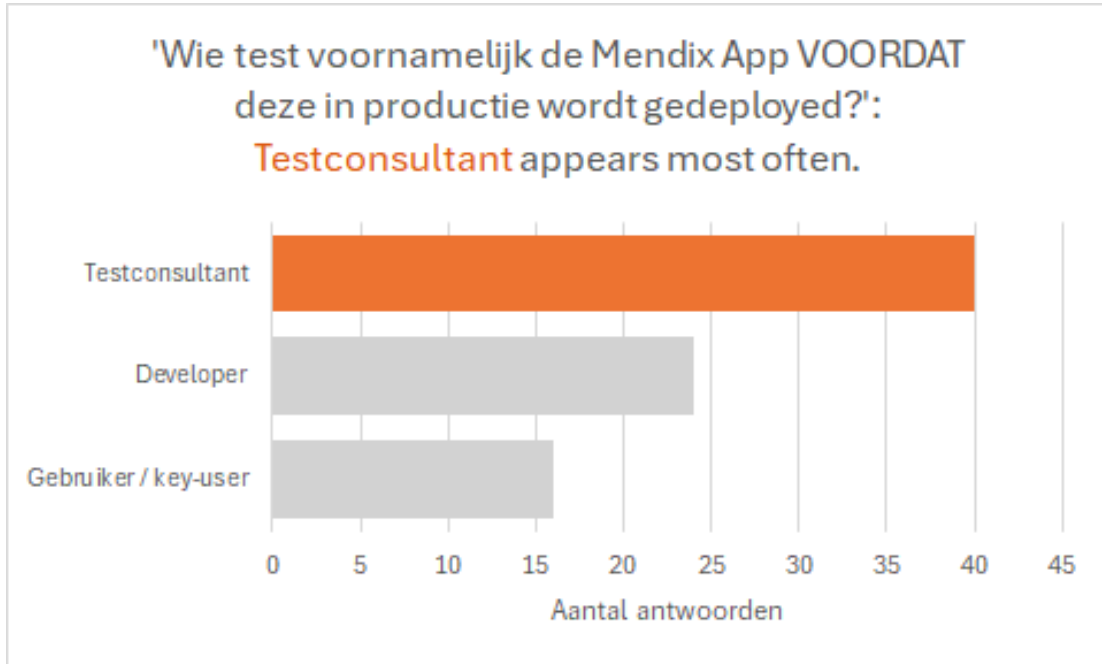
Bob

Welcome & Introduction

AUTOMATION



Results of questionnaire (1)



Results of questionnaire (2)

Percentage	Verhoging kwaliteit (er gaat te vaak iets in productie niet goed)
22%	Verhoging kwaliteit (er gaat te vaak iets in productie niet goed)
15%	Besparing in tijd (sneller feedback op wijzigingen)
13%	Besparing in geld (minder resources kwijt met testen)Besparing in tijd (sneller feedback op wijzigingen)Verhoging kwaliteit (er gaat te vaak iets in productie niet goed)
10%	Besparing in tijd (sneller feedback op wijzigingen)Verhoging kwaliteit (er gaat te vaak iets in productie niet goed)
8%	Besparing in geld (minder resources kwijt met testen)Besparing in tijd (sneller feedback op wijzigingen)Verhoging kwaliteit (er gaat te vaak iets in productie niet goed)Het moet (proof-of-testing)
6%	Besparing in geld (minder resources kwijt met testen)Besparing in tijd (sneller feedback op wijzigingen)
4%	Besparing in geld (minder resources kwijt met testen)Verhoging kwaliteit (er gaat te vaak iets in productie niet goed)
4%	Besparing in geld (minder resources kwijt met testen)
1%	Verhogen van de testefficiëntie en sneller inzicht in mogelijke risico's
1%	Verhoging kwaliteit (er gaat te vaak iets in productie niet goed)Ik bied testautomatisering aan als dienst
1%	Verhoging kwaliteit (er gaat te vaak iets in productie niet goed)
1%	Besparing in geld (minder resources kwijt met testen)Verhoging kwaliteit (er gaat te vaak iets in productie niet goed)Eerst het seminar volgen
1%	Besparing in tijd (sneller feedback op wijzigingen)Sneller feedback naar developers voor er getest wordt
1%	Verhoging kwaliteit (er gaat te vaak iets in productie niet goed)Validation with back tracing
1%	Besparing in geld (minder resources kwijt met testen)Het moet (proof-of-testing)
1%	Eerst het seminar volgen
1%	Verhoging kwaliteit (er gaat te vaak iets in productie niet goed)Het moet (proof-of-testing)
1%	Het moet (proof-of-testing)
1%	Verhoging kwaliteit (er gaat te vaak iets in productie niet goed)TEST
1%	Ik weet nog niet of er een drijfveer is bij mij om automatisch te testen
1%	Op dit moment geen
1%	Besparing in tijd (sneller feedback op wijzigingen)Verhoging kwaliteit (er gaat te vaak iets in productie niet goed)Het moet (proof-of-testing)
100%	Totaal



01

Welcome & introduction

Bob van der Linden & Markus Travaille

02

Unit testing with MTA

Markus Travaille

03

Regression testing with Tosca

Rob Huberts

04

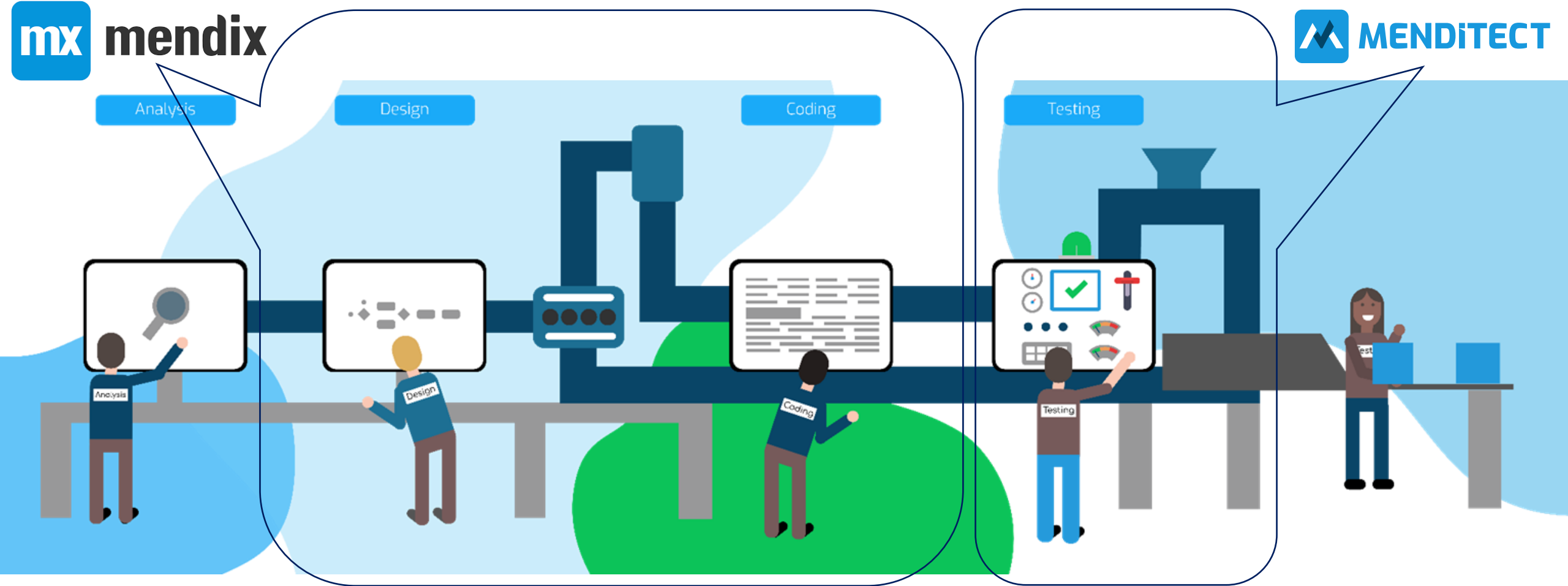
Q&A

All



Markus

The value of Mendix: Fast deployment to production



Mendix market grows

Situation:

- More customers
- More apps per customer
- More business critical apps
- More complex apps



Consequence:

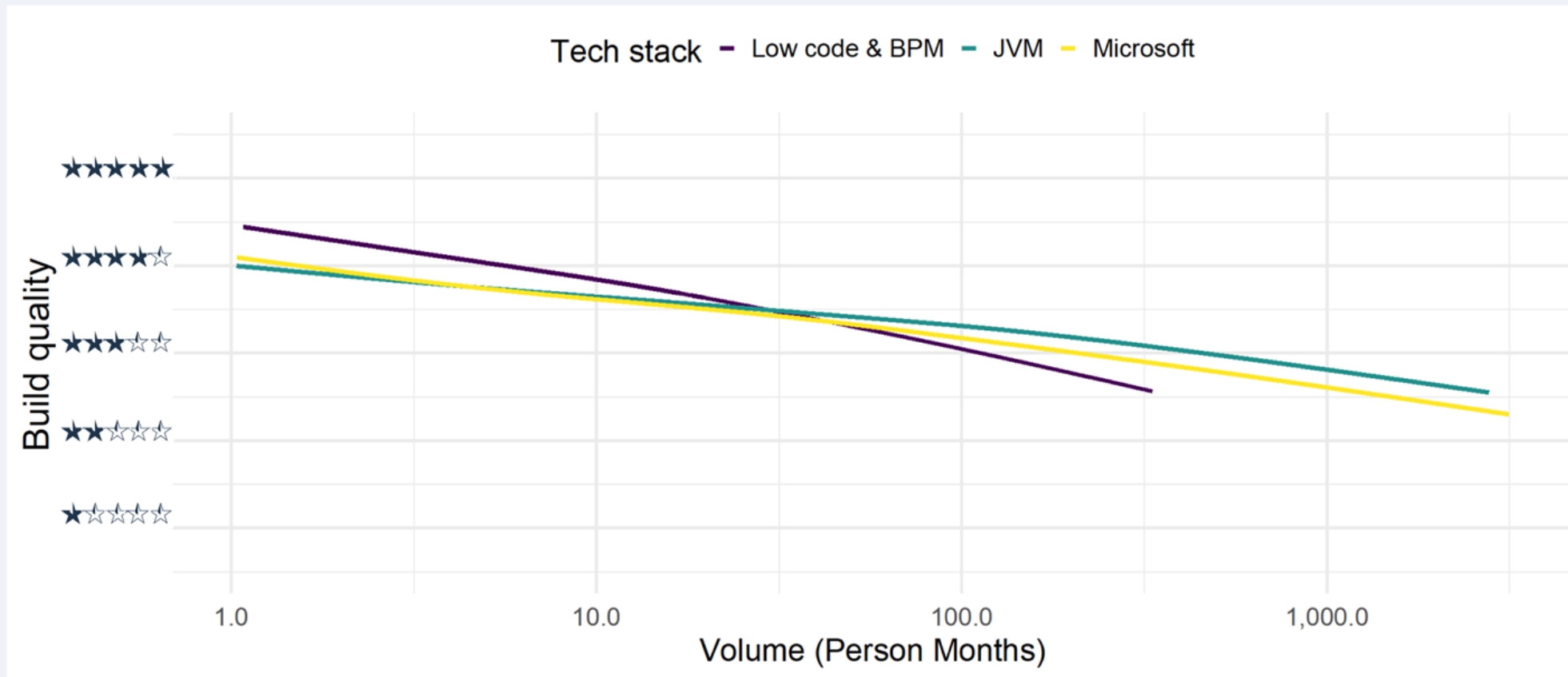
- The importance of the quality of Mendix apps increases

Quality of Mendix apps needs attention

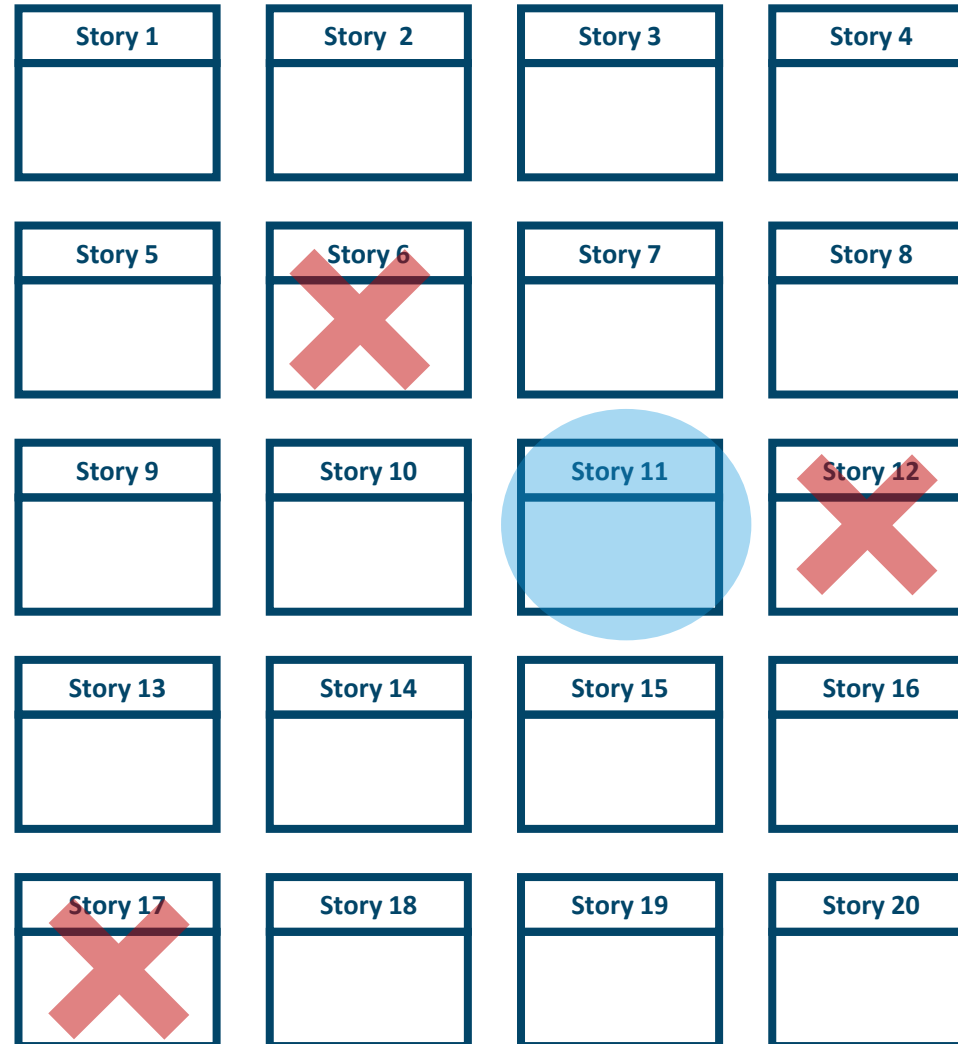
as size and complexity grows



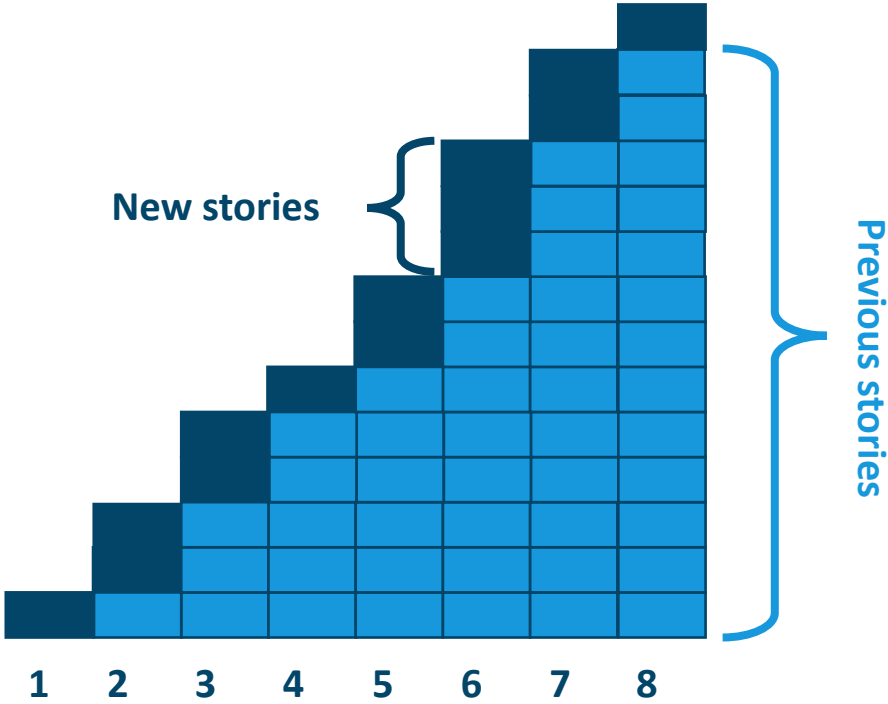
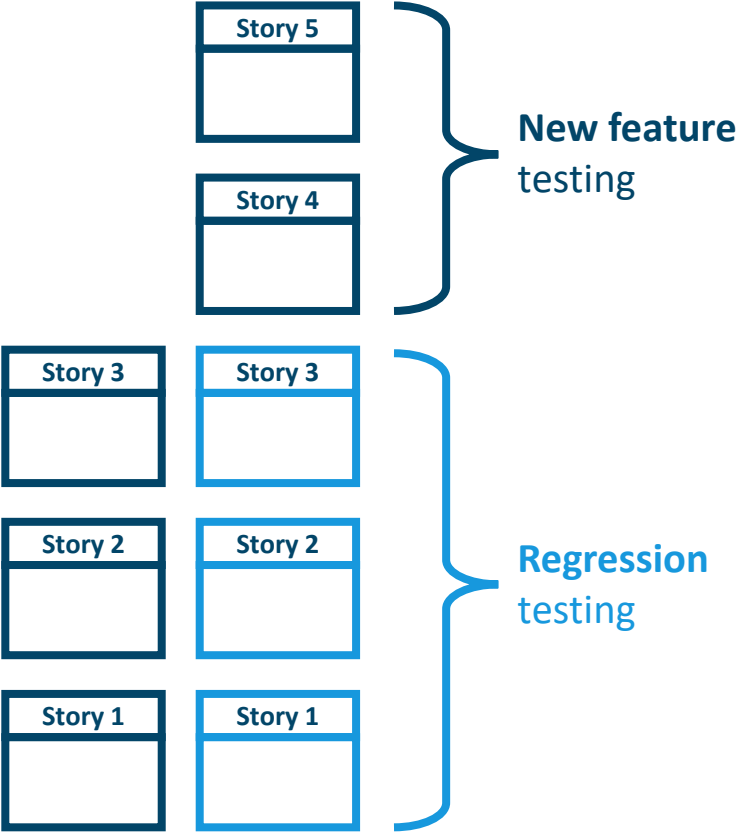
Only for small systems, Low Code & BPM had a build quality edge over JVM & Microsoft



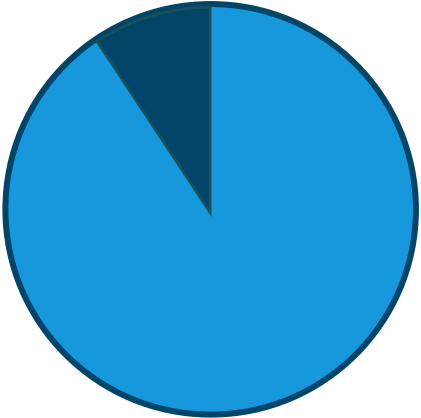
What is regression in software?



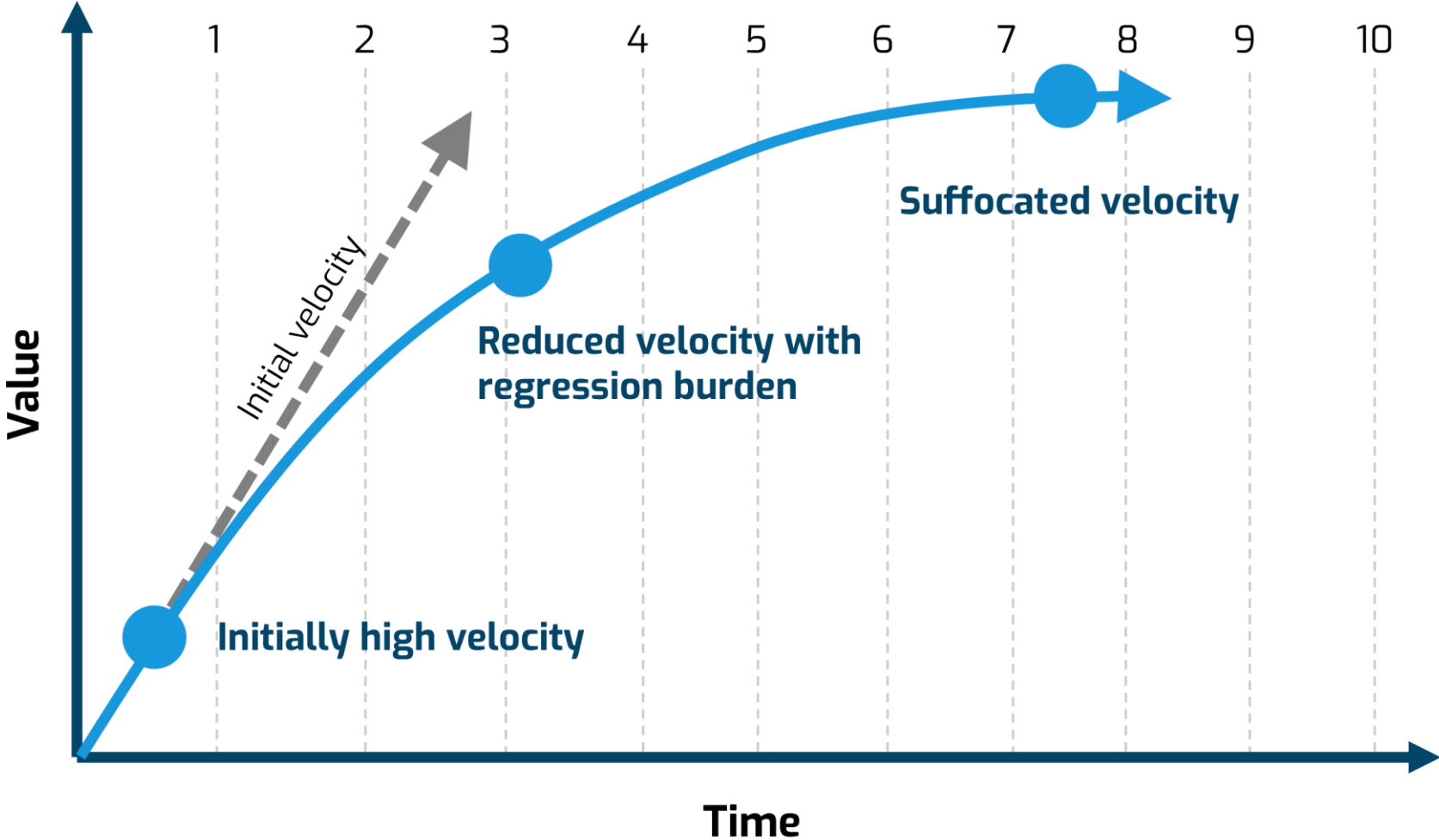
Manual regression testing leads to more work with each release



93% of sprint 8 testing is regression testing

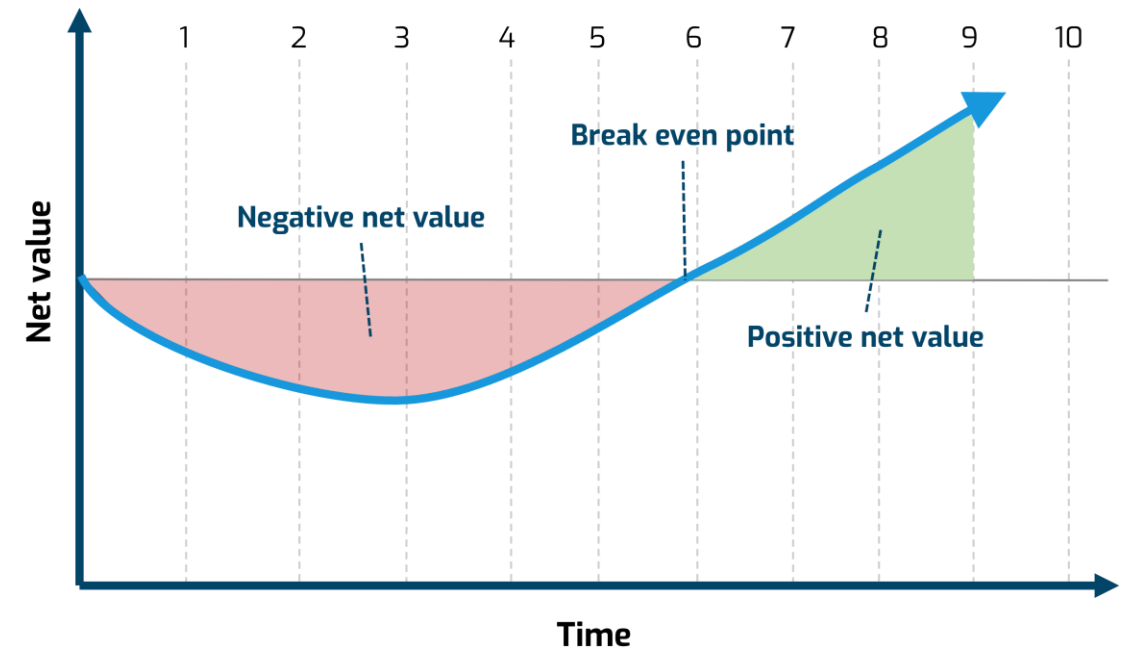


Manual regression testing deteriorates Mendix value of fast releases



Characteristics of test automation

- Test automation is investment
- Test automation is process automation
- Test automation works best for regression testing



Quality Engineering & Test Automation

Organizational aspects – people view

- Separate QA-engineer in development team
 - Focus on requirement engineering at each begin of development (instead of during development)
 - Validation at end of development
 - Parallel definitions during the developments, the validations can be defined separately.
 - Not only the happy-flow
 - Typical developer likes to build, not to validate
 - No conflict of interest (delivery vs quality)
- T-shaped development (no separate QA-engineer)
 - No developments during validation meaning less velocity in team
 - Less development costs



Quality Engineering & Test Automation

Organizational aspects – people view

A separate tester in your team?

Do include a separate tester

- Large team or complex projects with many dependencies
- Projects where specific testing expertise is needed (low-quality security testing, load testing)
- If the team does not have enough time or knowledge to test thoroughly
- For projects with a high degree of user interaction or where quality is essential

Do not include a separate tester

- Small team or projects with a limited budget
- If the developers are well trained in writing and maintaining tests (TMap/ISTQB)
- For projects with short lead times and low-quality risks



Quality Engineering & Test Automation

Organizational aspects – technical/tool view

- Developers want to use test tools close to their own technology stack / IDE
 - Preferable within development stack
- QA-engineers want to use test tools outside and independent of SUT (System Under Test)

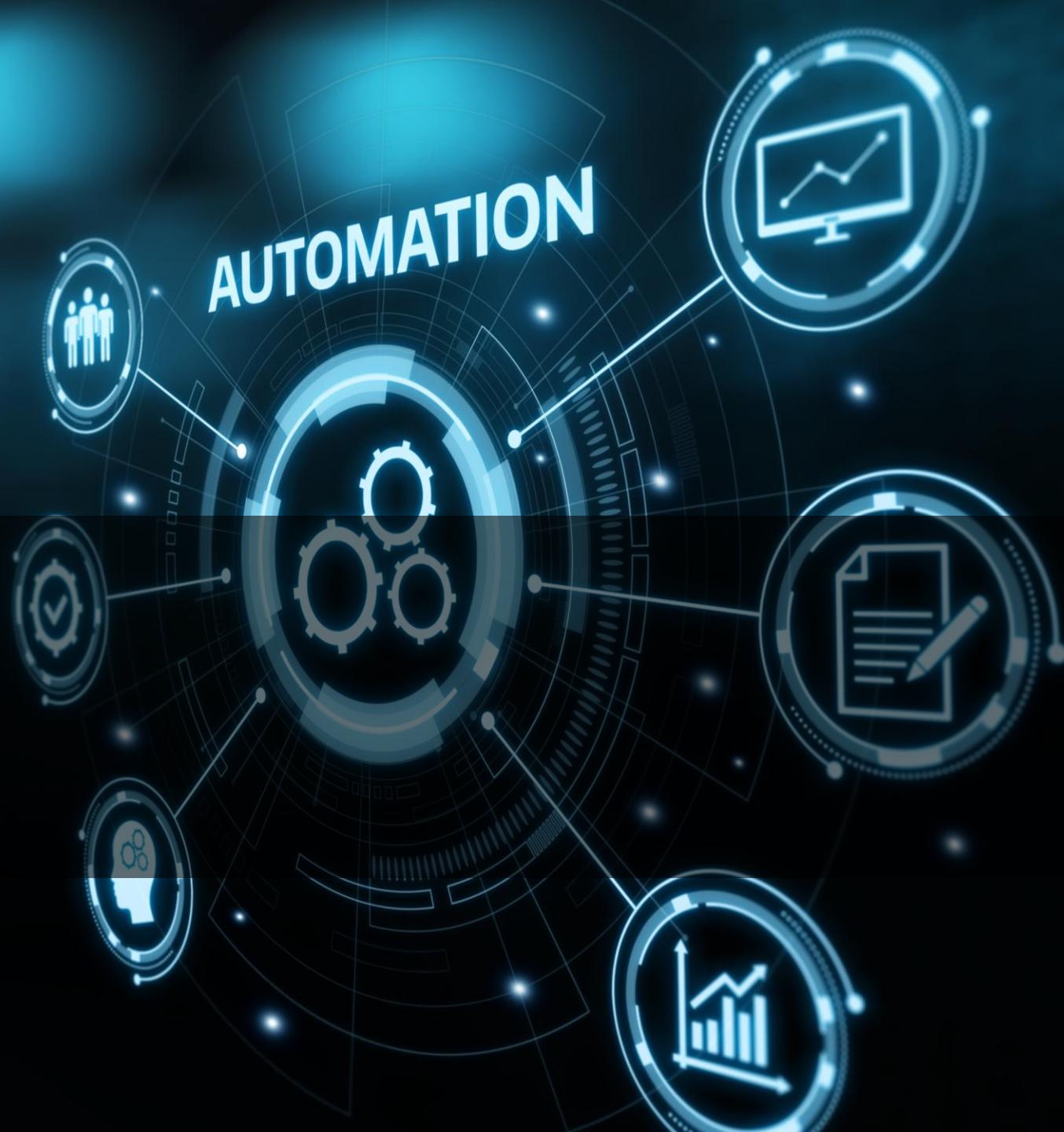
- Different test -> different (sub)tool

Type of test	Tool characteristics
Unit test	Easy test execution and integration
Integration test	Multiple technologies supported
System test	End-to-End support for testing at the entire system level
Regression test	Compatibility with the system and technologies
Exploratory testing	Tracking user steps
Acceptance test	Script definitions and progress reporting
Load / Stress test	Load generation & monitoring
Security test	Blend of several security test tests



Rob

The Jumbo THT-app



Jumbo THT app

The application ensures that best-before dates are checked in time to prevent wastage for this reason.

The app has two views, one for the store manager on desktop:

Hallo StoreManager

Jumbo Pelt De Koel.

1 to 10 of 201

Presentatiegroep ↓ Status ↑

Zoeken 🔍

KATTENVOER	Actief
ZELFZORG	Actief
PREMIXEN	Actief
DV PIZZA	Actief
K SALADES	Actief
K OOSTERS	Actief
KOSTEN	Inactief
ADM MMKORT	Inactief
ADM KOST A	Inactief
KOFFIE	Inactief

KATTENVOER Actief

Controletermijn ⓘ

10

Alle actief maken

Alle inactief maken

Alle THT's verwijderen

Zoek op naam, artikelnummer of EAN 🔍

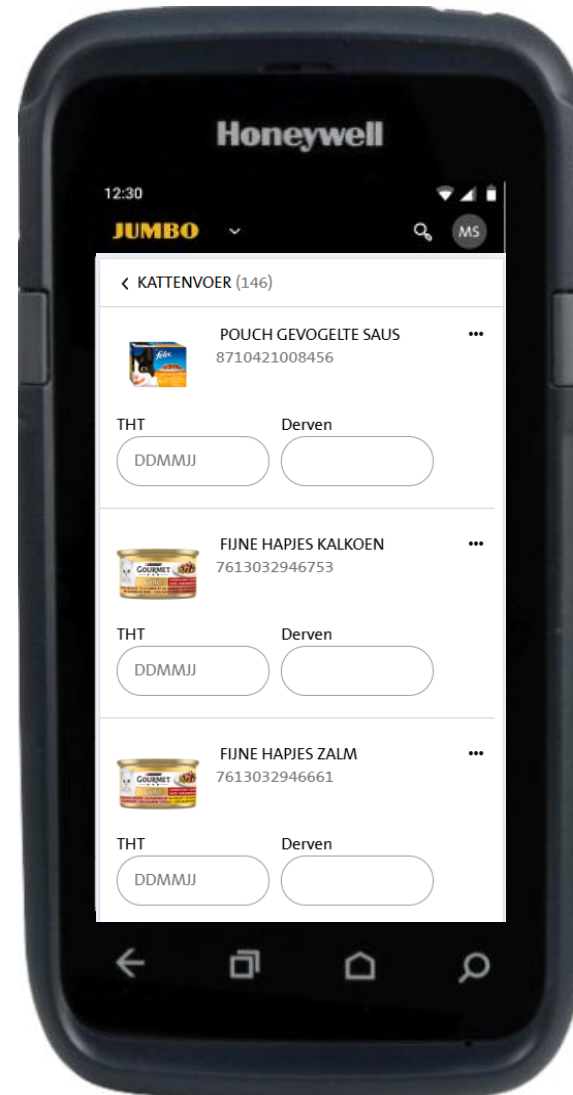
Sorteer op: Uit assortiment

1 to 20 of 150

Artikelnr	Naam	Locatie	Status	THT datum	Control...
100803	GOLD MOUSSE TONIJN		Actief Inactief	dd-mm-yy 🗑️	10
10245	TEMPTATIONS ZALM Schap is leeg Terug in de lijst op 25-12		Actief Inactief	dd-mm-yy 🗑️	10
140520	MON PETIT VLEES		Actief Inactief	dd-mm-yy 🗑️	10
140521	MON PETIT VIS		Actief Inactief	dd-mm-yy 🗑️	0
140524	CRISPIES ZALM/FOREL		Actief Inactief	dd-mm-yy 🗑️	0

Jumbo THT app

And on the PDA for the store employees:

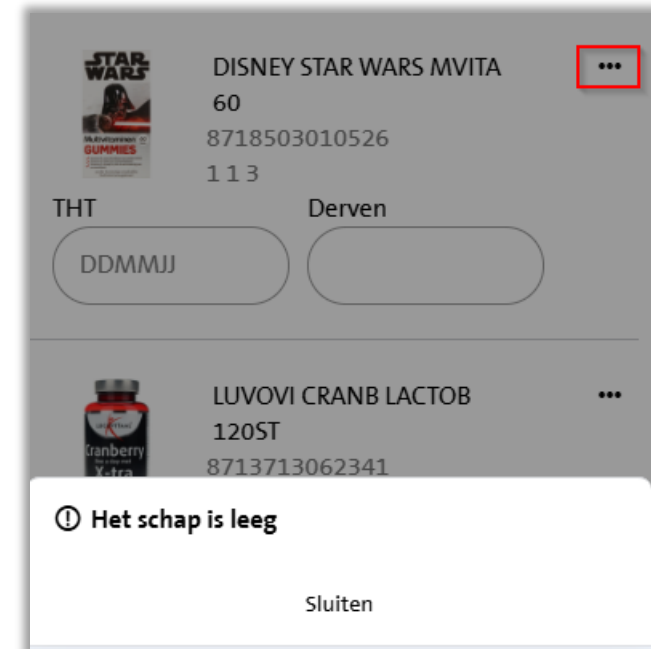
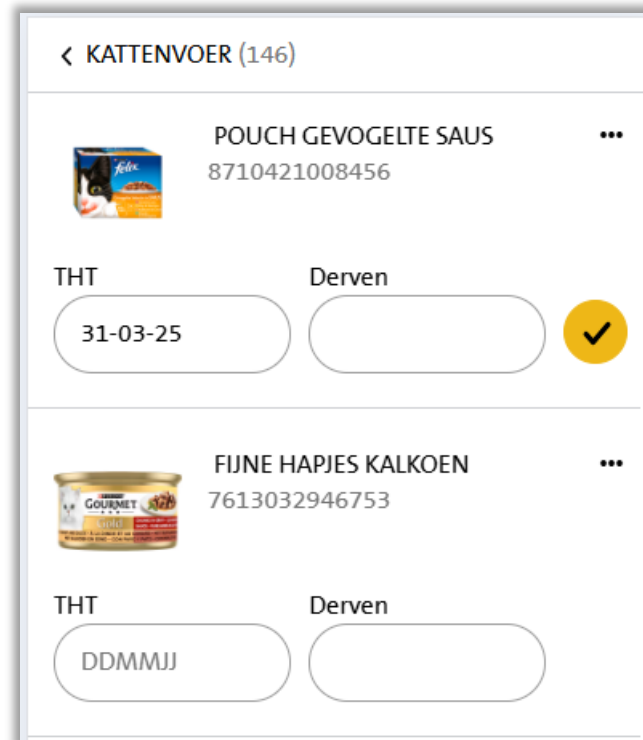


Data:

Dates in the app

Jumbo THT app

- Articles are maintained/updated daily via Event-Mesh (from SAP S/4)
- All the best-before dates are managed in the THT app itself for each article
- The list is unique for each store and their assortment
- New THT-lists are created every night



Data:

deprecated
articles

Jumbo THT app

- If an article needs to be deprecated, a call is made to SAP S/4 for a stock correction
- A material document is created for the store, article and quantity combination
- This is done in the MSEG table and is visible via TRX MB51

< Vandaag gedaan: KATTENVOER



GOLD MOUSSE ROOD
7613035149809

THT: 23-03-2025

7 gederfd

< **SAP** Artikeldocumentlijst

Meer ▾

🔍 📄 📁 📊 📑 ? ⏪ ⏩

Artikel	Artikelomschrijving	Vst. Naam 1
Mag. Bws S Art.doc.	Pos. Boek.dat. Hvh. in invoer-HE IHE	
154991	GOURM GOLD MOUSSE ROOD	1003 Jumbo Pelt De Koel
1000 551 4900443123	1 23.12.2024	7- STK

Building & testing the THT app

- This app replaced an existing Fiori app in SAP
- Build and tested in sprints / Agile way of working
- Tested by myself, via manual testing on desktop and PDA.
 - System Test
 - System Integration Test (with SAP team)
 - User Acceptance Test (in one Belgium store)
- App went live in June 2023 for all Belgium stores
- No test automation was used during development
- Great feedback on the app from the stores

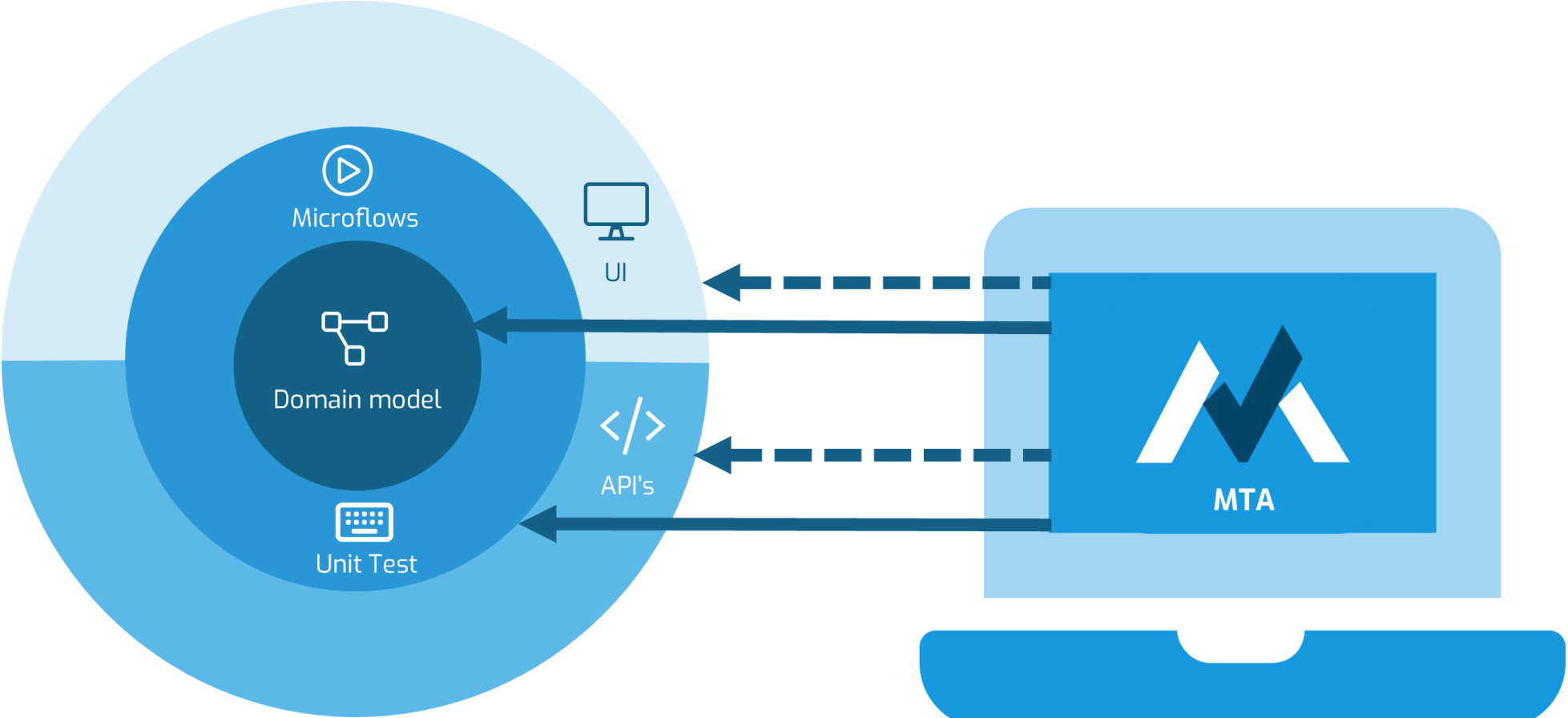


Unit testing with MTA

AUTOMATION

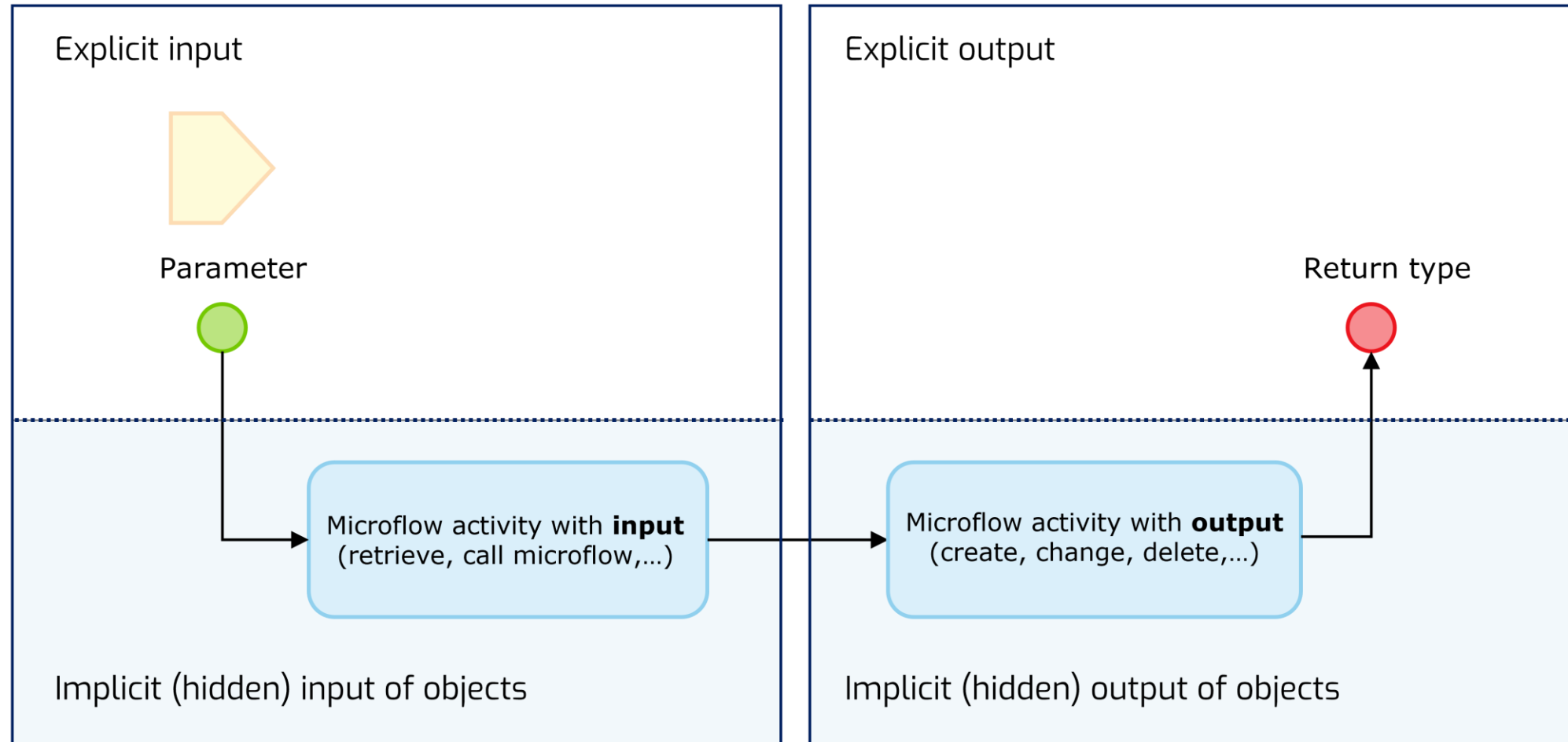


Menditects: Direct Model Testing



Mendix model


Single microflow testing (unit test)




Live demo of unit test:


commit THT & check date format

< KATTENVOER (146)

 **POUCH GEVOGELTE SAUS** ...
8710421008456

THT Derven

31-03-25 

 **FIJNE HAPJES KALKOEN** ...
7613032946753

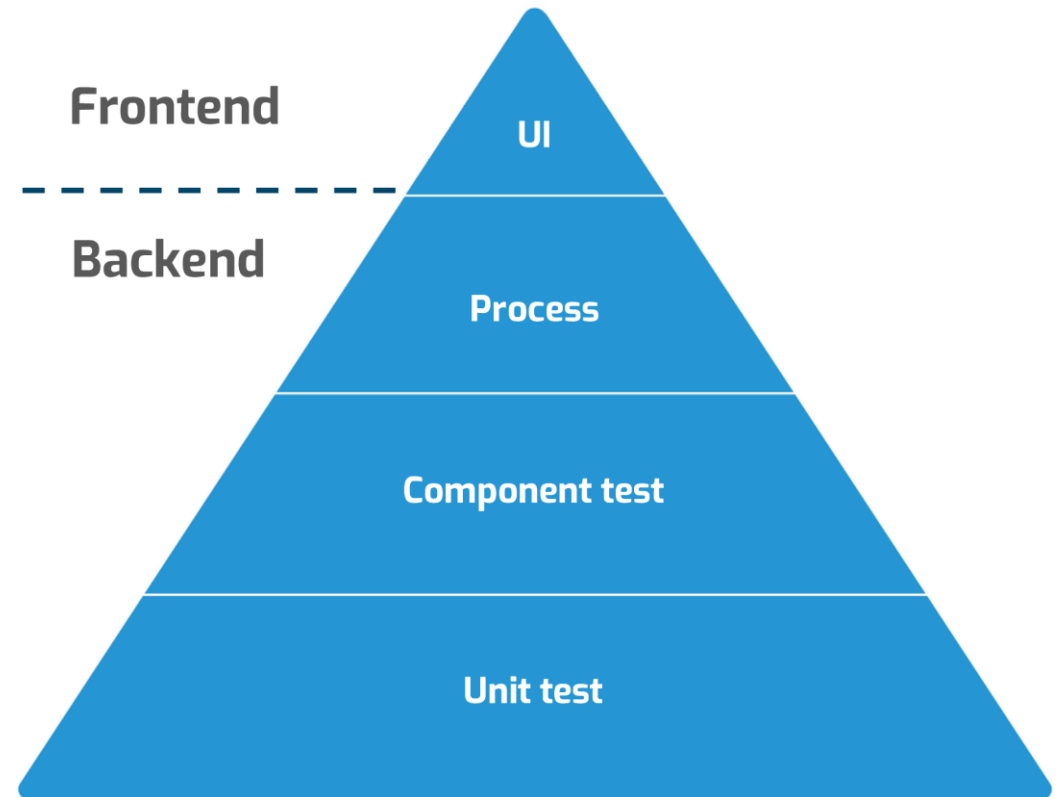
THT Derven

DDMMJJ

<https://mta-demo.mendixcloud.com/link/testsuite/488>

Optimize coverage

- Separate edge case testing from main flow testing
- Test edge cases at the lowest level possible (unit/component)
- Use a data driven, white box, test approach to get 100% coverage on edge cases



Regression testing with Tosca

AUTOMATION



Test automation with Tosca

- Low-code testautomation
- Userfriendly interface and setup
- Used for front-end & API testing
- Wide support of technologies and platforms
- Module based setup (easier to maintain and re-use)



Test automation for the THT app

- 19 Regression scenario's are run every evening via Tosca
- Runs are done on a VDI (Virtual Desktop)
- This test set has 3 components:
 - 8 Back-end scenario's (via API)
 - 7 Front-end scenario's Storemanager (API + front-end)
 - 4 Front-end scenario's Operations (API + front-end)

State	ExecutionList	Agent	Start Time (CET)	End Time (CET)	Actual Result
✓	THT App	VMX-198 (Azure VDI-1)	14 Jan 2025, 20:01	14 Jan 2025, 20:09	19 Passed

Scenario: Article derven via Front-end

- Front-end scenario
- Login via Okta with a store user (PDA session)
- Open presentationgroup Zelfzorg
- Enter the THT date and quantity for 'derven' for Disney Frozen vitamin kids

Manual check after this front-end script is done:

- Log into SAP and validate the store/article/quantity
- (PS: This process is tested by the supply chain team)

Demo front-end scenario

superp

Scenario: Article derven via API

- Get a new Okta token
- Select an active article from the Database
- Get THT information for this article
- Enter THT date and random quantity for derven (one digit 1-9)
- Wait 10 seconds for SAP to process the request
- Validate the store/article/quantity in SAP (MSEG table)

Demo API scenario

Test- automation with Tosca at Jumbo

- Mendix (front-end & API)
- SAP (front-end & API)
- Salesforce (front-end & API)
- Browser based applications (front-end)
- Java applications (API)



Tips for test automation & Mendix

Front-end Challenges with Mendix

- Add an extra class to your elements
- In this class, add a static ID for automation (where needed)
- **Collaboration between DEV and test!**

KATTENVOER Actief

Controletermijn ⓘ

10 Alle actief maken Alle inactief maken Alle THT's verwijderen

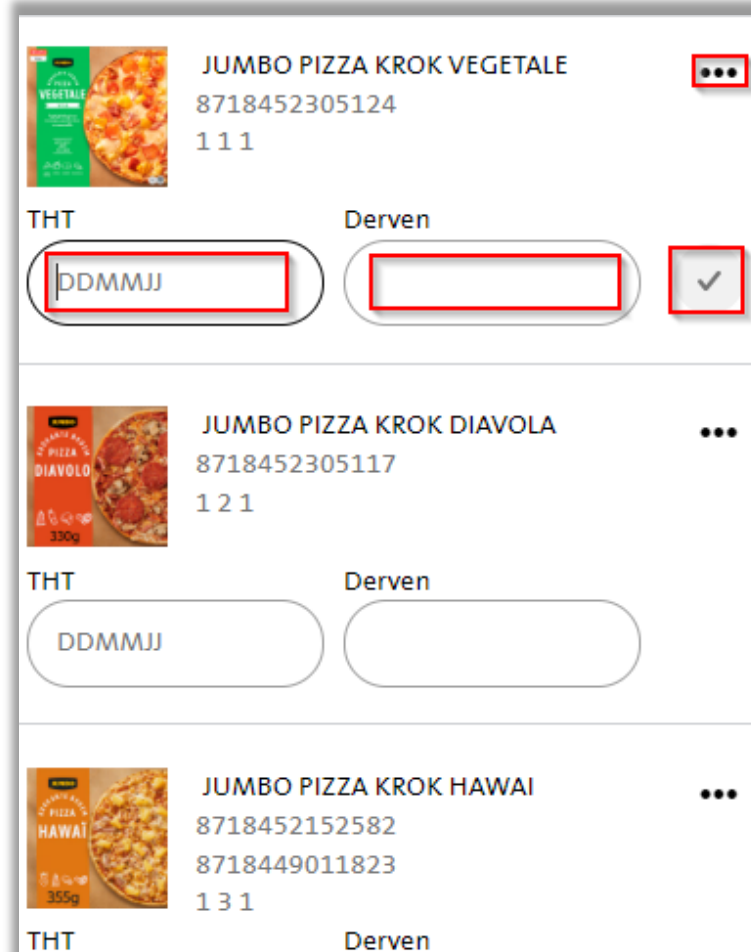
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Tips for test automation & Mendix

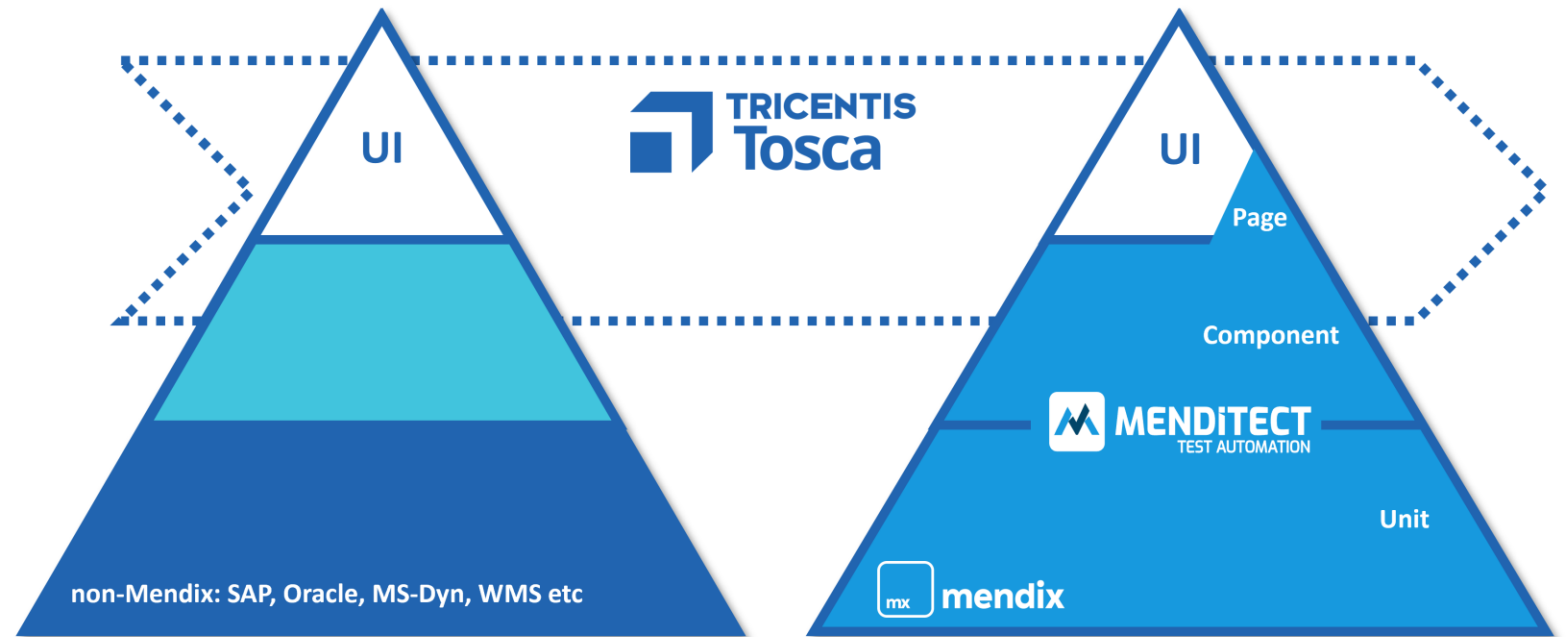
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From unit to regression test...

superp & MENDITECT



Your presentors today



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Feel free to connect
and reach out!



QUESTIONS

ANSWERS



SUPERP

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