



# Accessibility for All

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Microsoft Developer Advocate



@rorypreddy

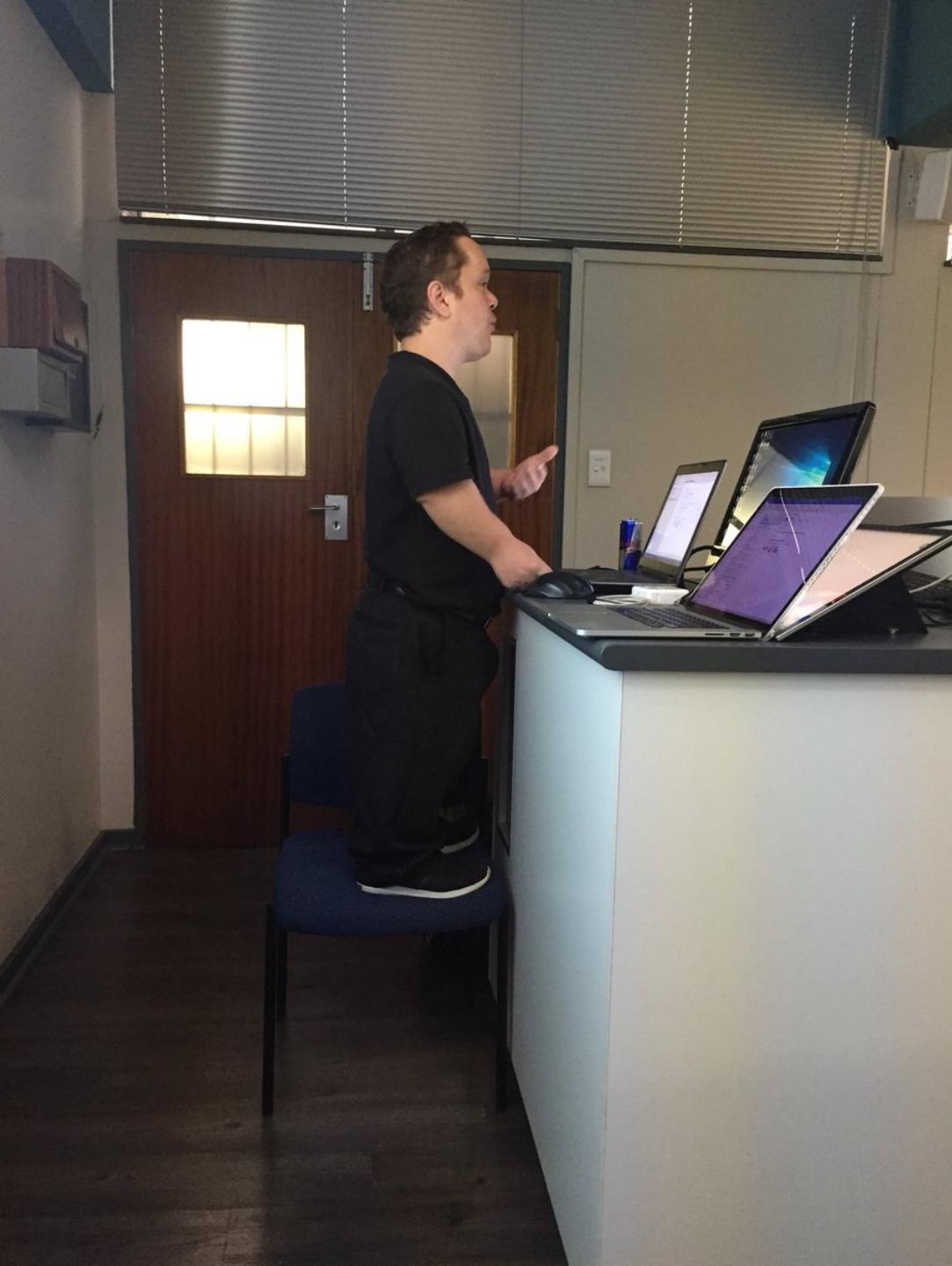


<https://aka.ms/for-all>

My Car Pedals



Bolt on



I felt left out



# The Agile Manifesto



## **Manifesto for Agile Software Development**

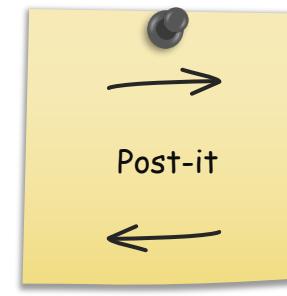
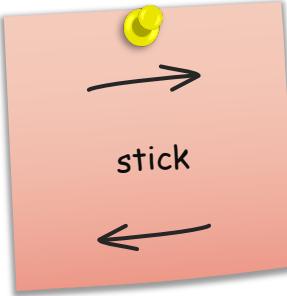
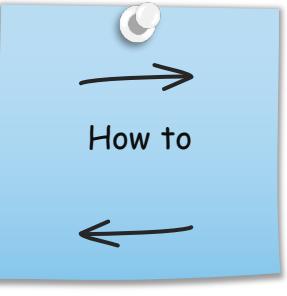
We are uncovering better ways of developing software by doing it and helping others do it.  
Through this work we have come to value:

**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.

Open office

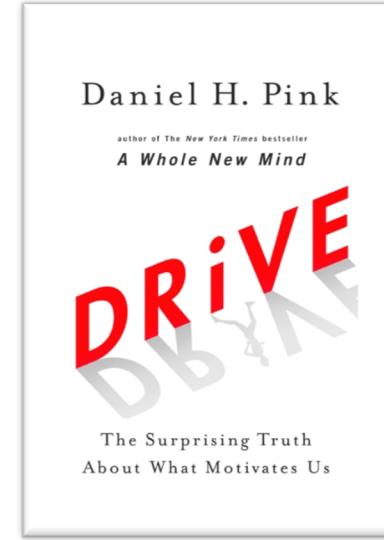
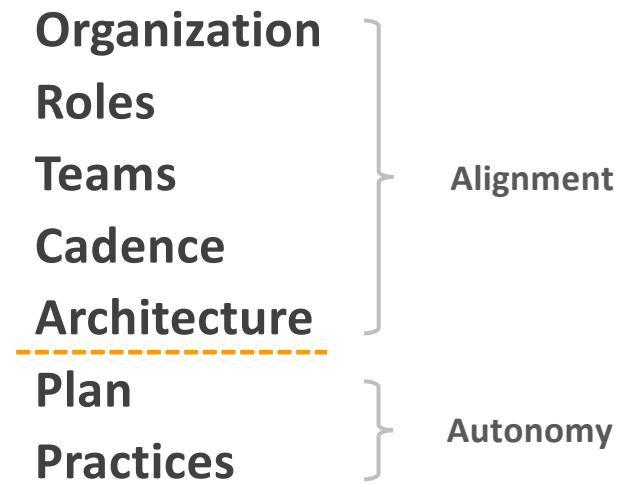




## The Hydra



# Aligned Autonomy



*"Let's try to give our teams three things ...  
Autonomy, Mastery, Purpose."*

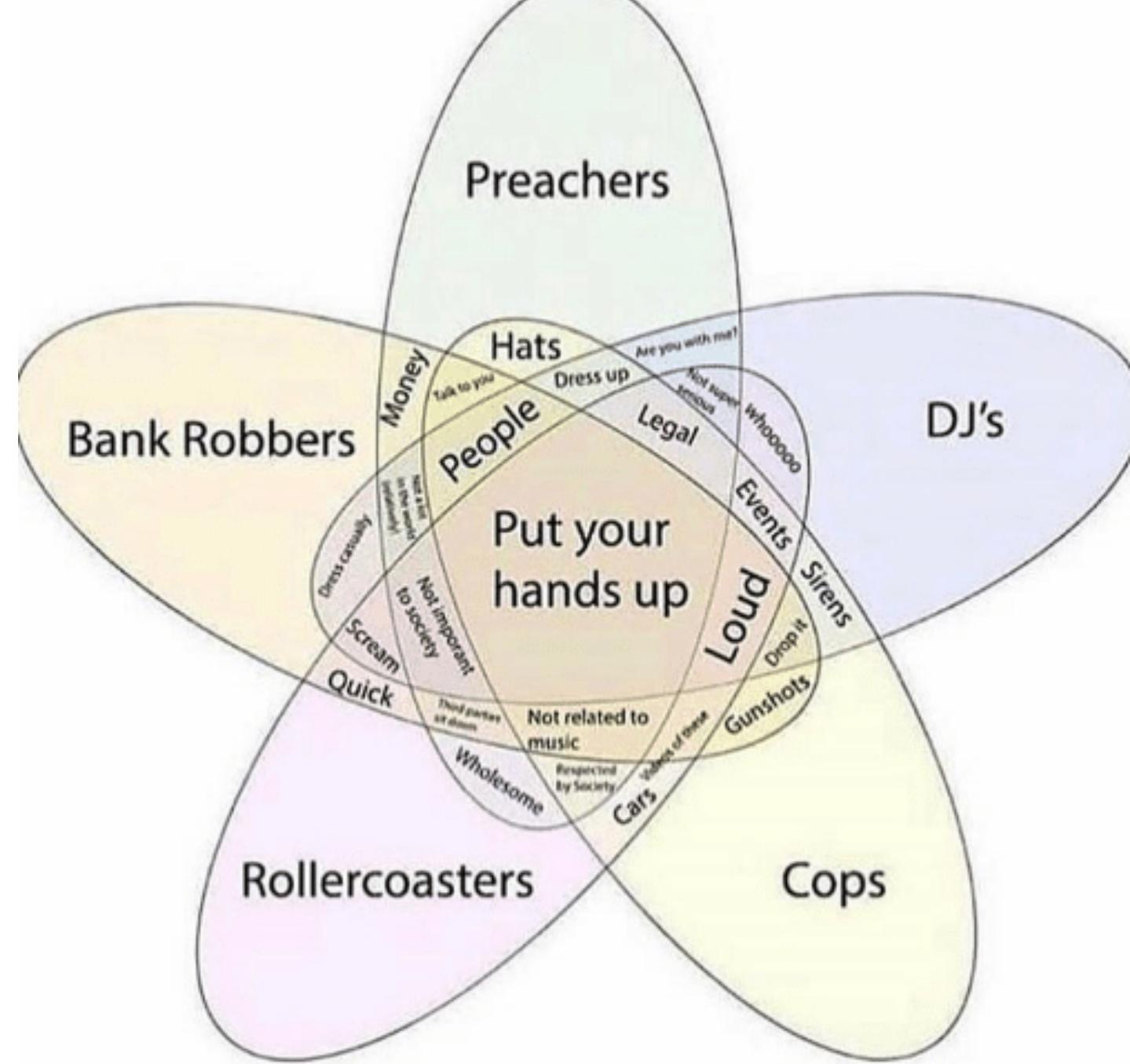
# Ikigai



Empathy



Put your hands up



## Empathy Bubble



Fail

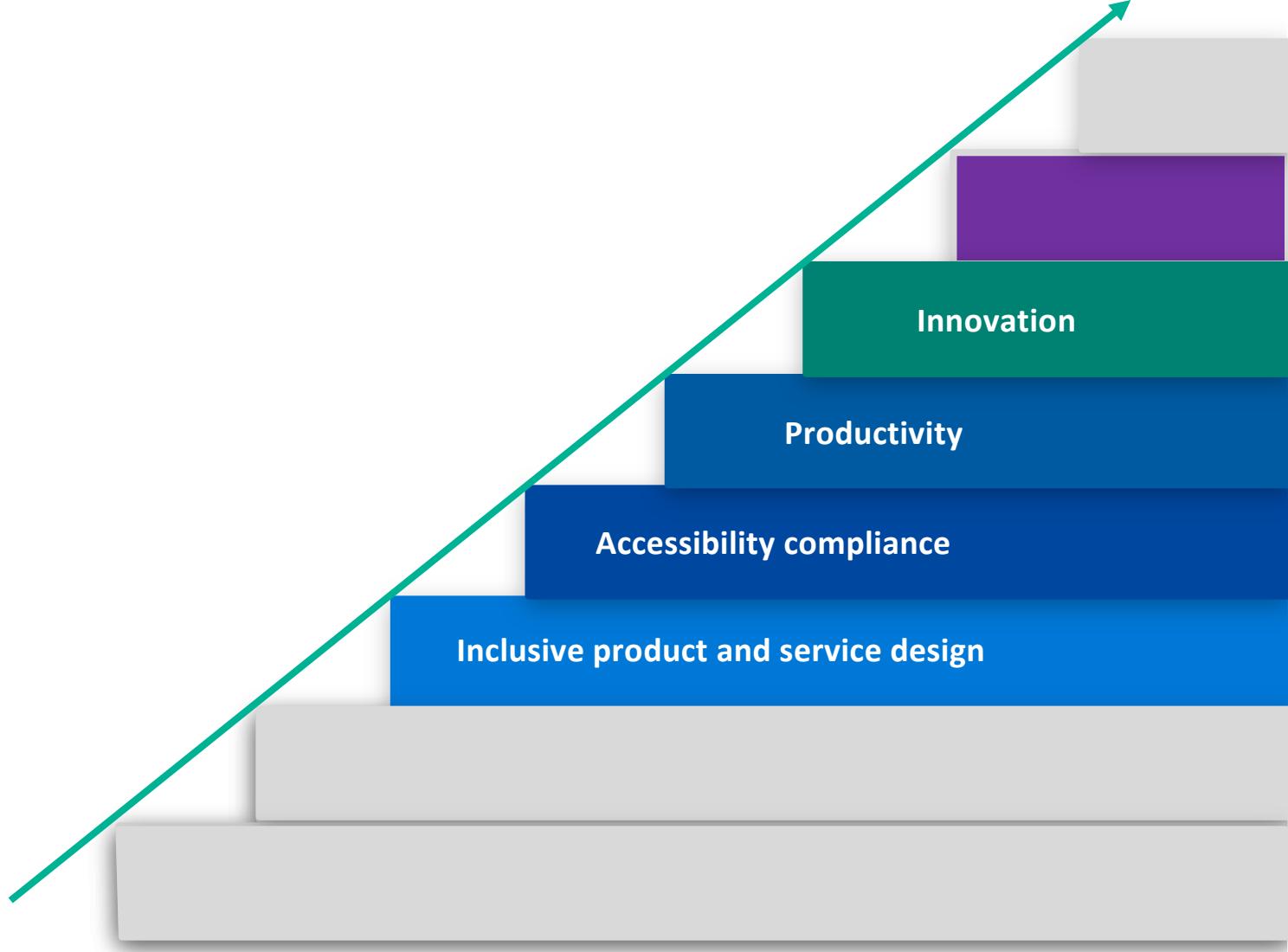
FAIL

## The plan

- Define Accessibility
- Understanding Your Organization's Unique Accessibility Motivators
- Set Achievable Interim Milestones
- Implement Tools
- Measure, Improve and Automate

## Accessibility is...

...the design of products, services, and environments so that everyone, including people with disabilities, can fully experience them.



Disability



Personal  
health  
condition

Disability



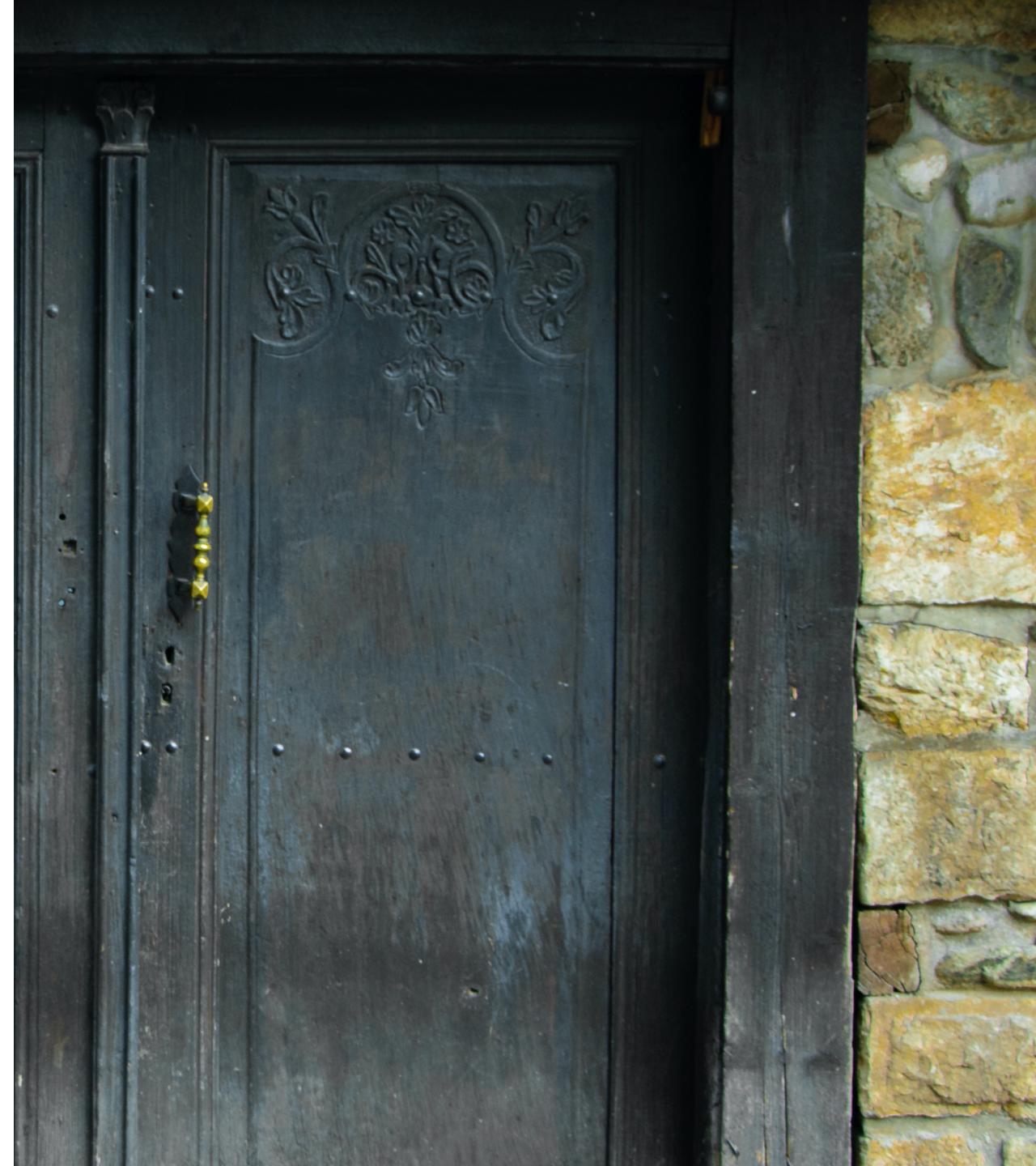
Mismatched  
human  
interactions

# Accessibility Design principles

- Perceivable – *can you see it*
- Operable – *can you use it*
- Understandable – *can you understand it*
- Robust – *it won't break future technologies*



# Motivators



# Legislation



US 21st Century Integrated Digital Experience Act



EU parliament directive on digital accessibility



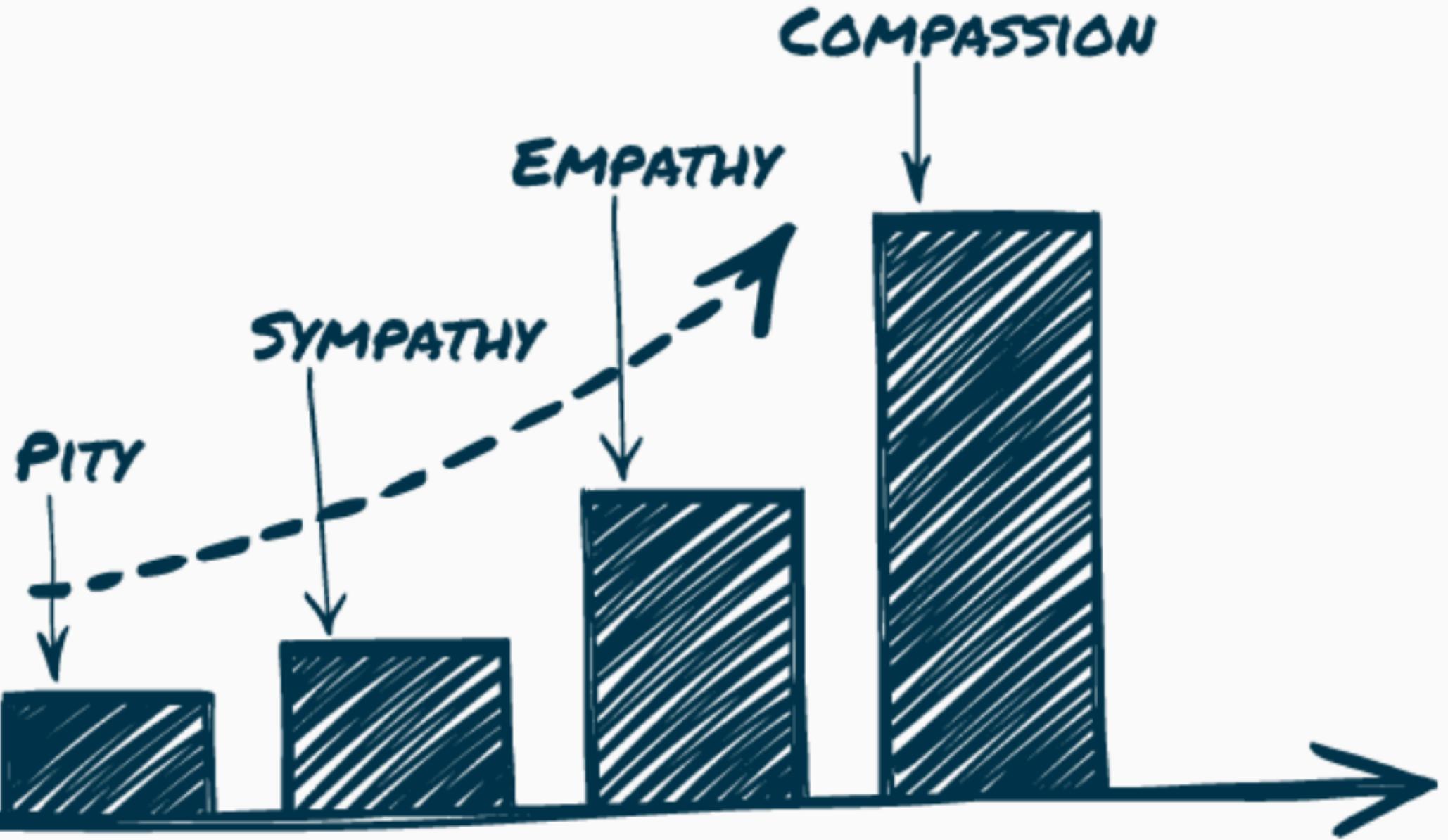
# Quality of life

For most of human history, we've put our innovative capacity into improving the quantity of life. Because we're living longer, our focus is starting to shift toward improving our quality of life

--Bill Gates



Emotional Engagement



Awareness of Others' Difficulties

## Claudia



54 years old social worker

Sight impaired (partially sighted)

Uses a screen magnifier and changes colours to increase contrast

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### Chromebook help

If you're lost, go back to the first tab to re-orientate yourself!

## Ashleigh



24 years old arts graduate and administrative assistant

Severely sight impaired (blind)

Uses a screen reader

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### Chromebook help

Screen reader quick guide:

Use Tab to move from links and form elements to the next. Shift + Tab to go back. Search + Arrow Right/Left to read text in between those.

## Ron



82 years old, retired

Multiple conditions: arthritis, losing his hearing, cataracts, hip replacements

Doesn't use any assistive technology

---

### Chromebook help

As Ron is not very technical, don't use anything which might help. For example, don't zoom into the page and don't use the keyboard to navigate.



<https://alphagov.github.io/accessibility-personas/>

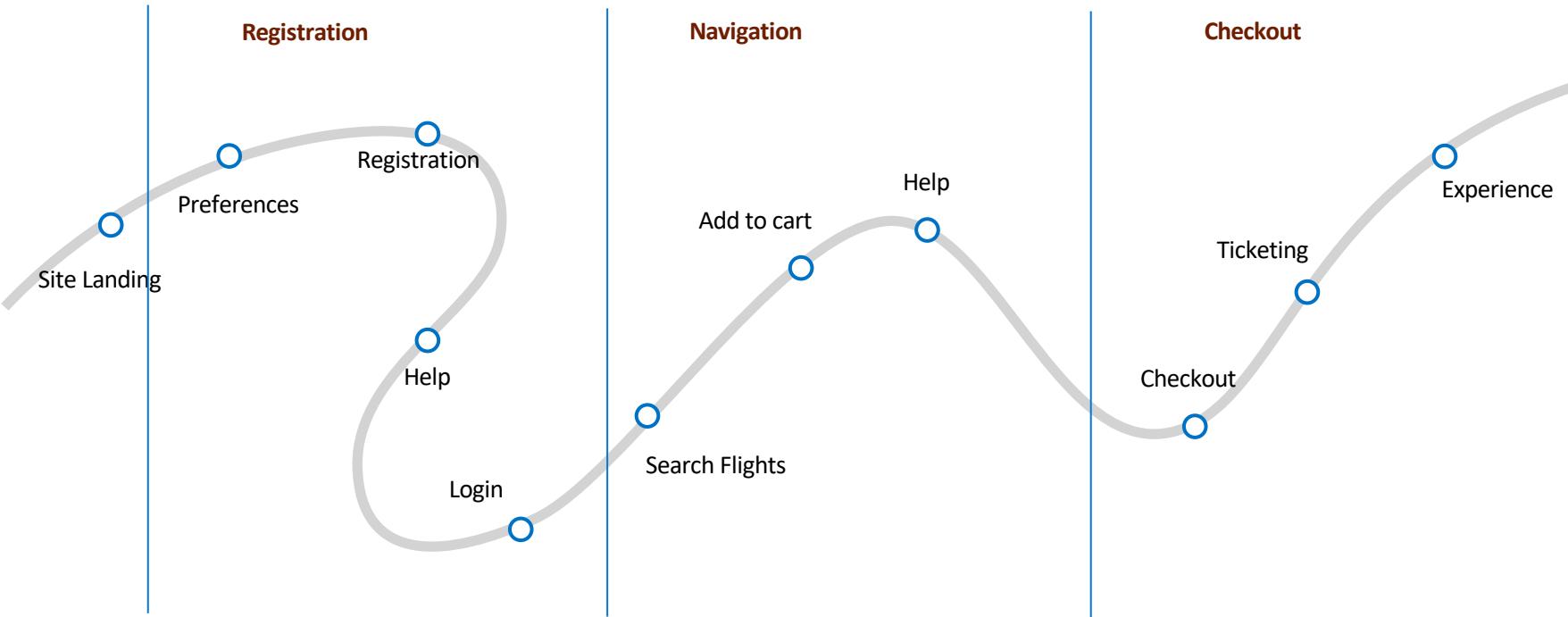
# Inclusive design steps

1. Recognise exclusion
2. Solve for one, extend to many
3. Learn from diversity

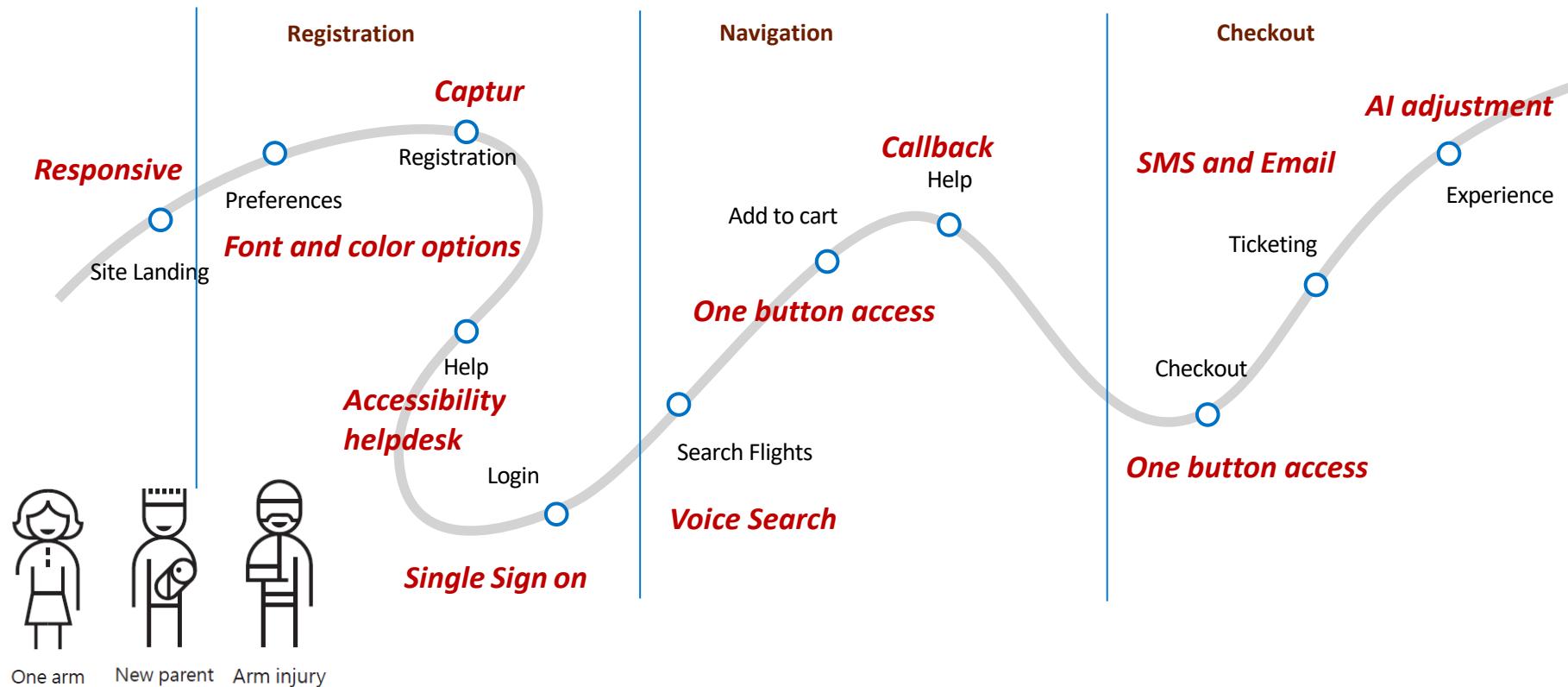
# Persona Spectrum



# Ticketing scenario

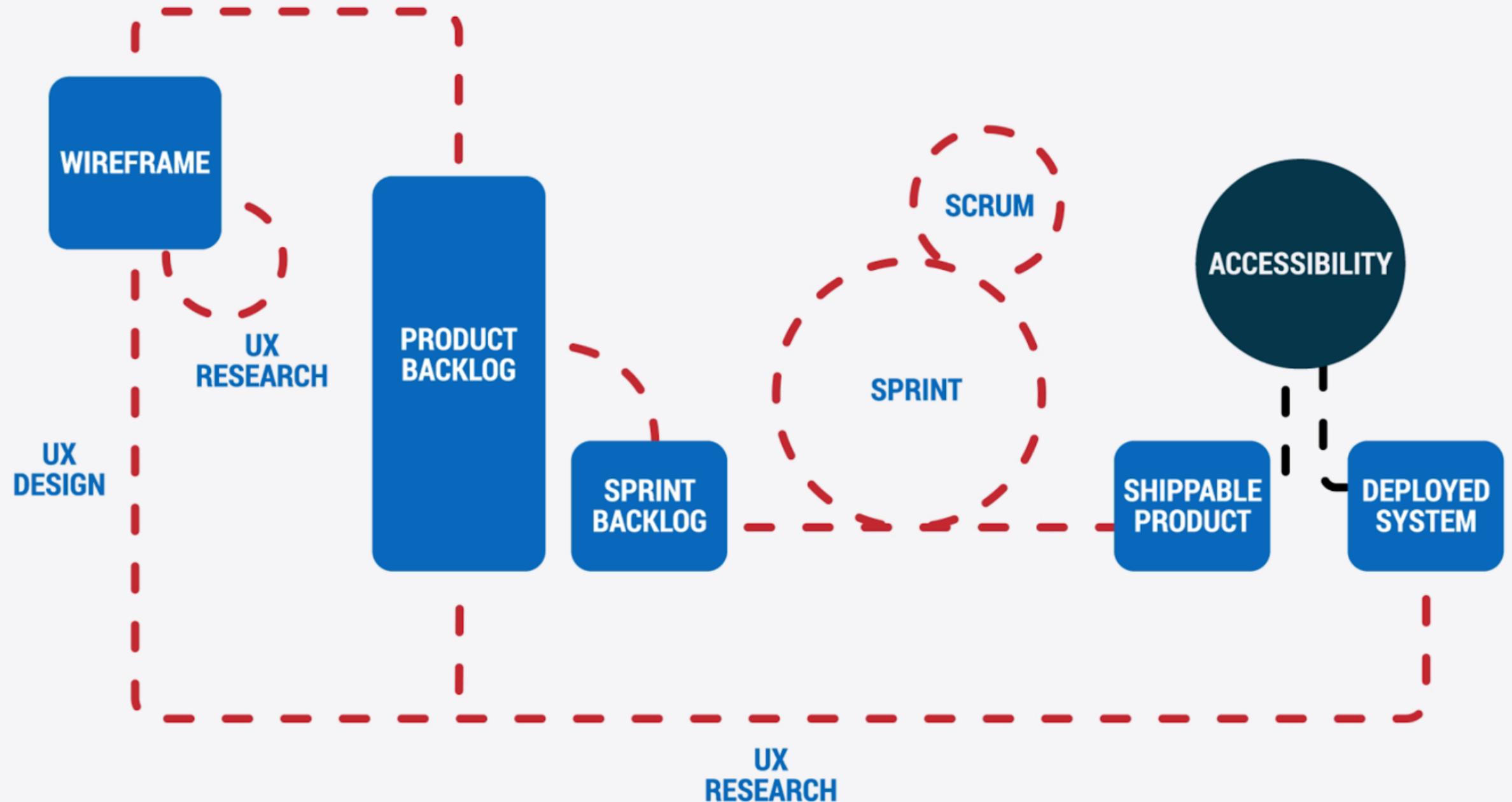


# Apply Personas



# Milestones





**Backlog**

**Design**

**Coding**

**Testing**

**Release**



**Small Investment**

**Small Investment**

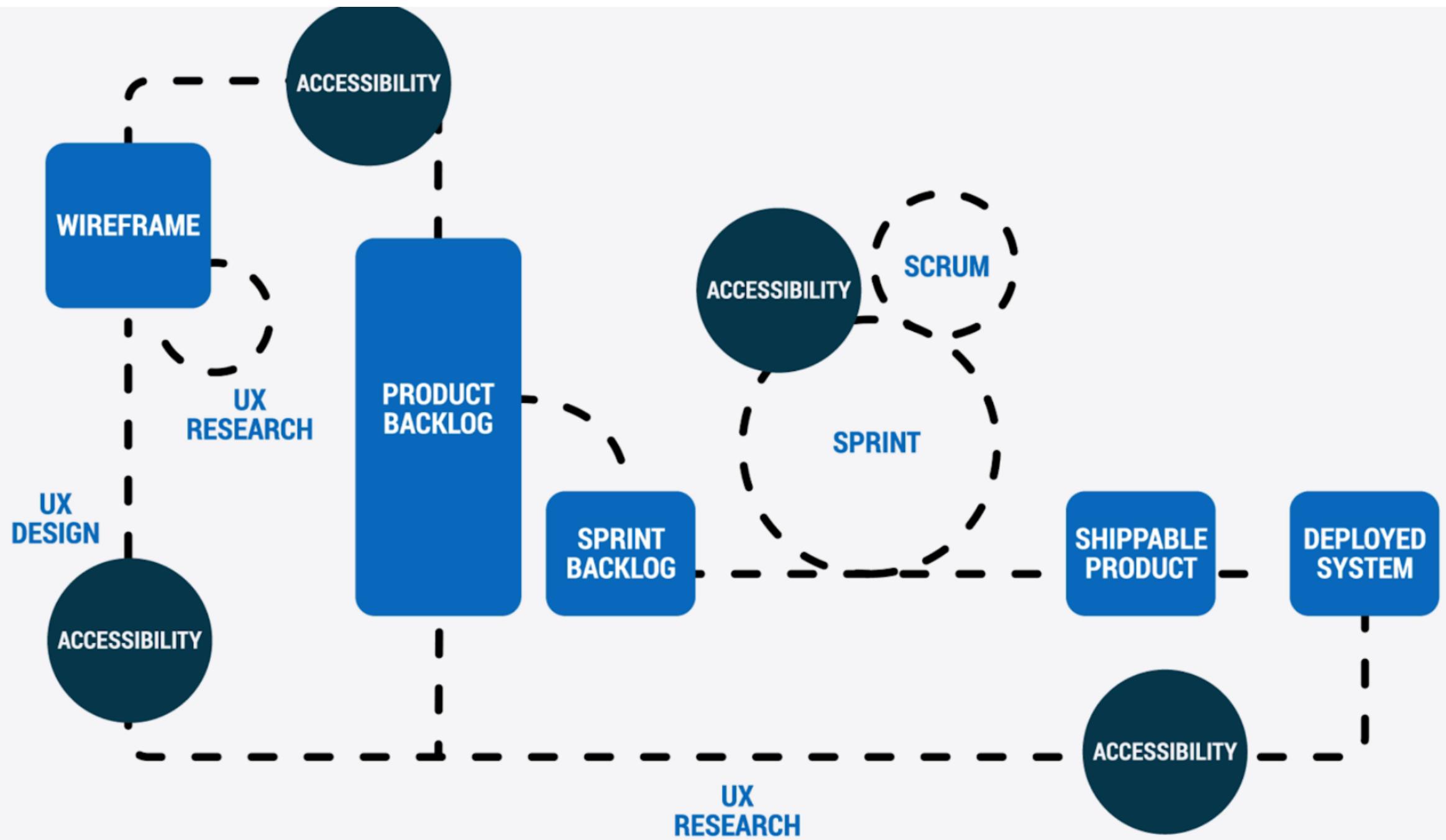
**Small Investment**

**Small Investment**

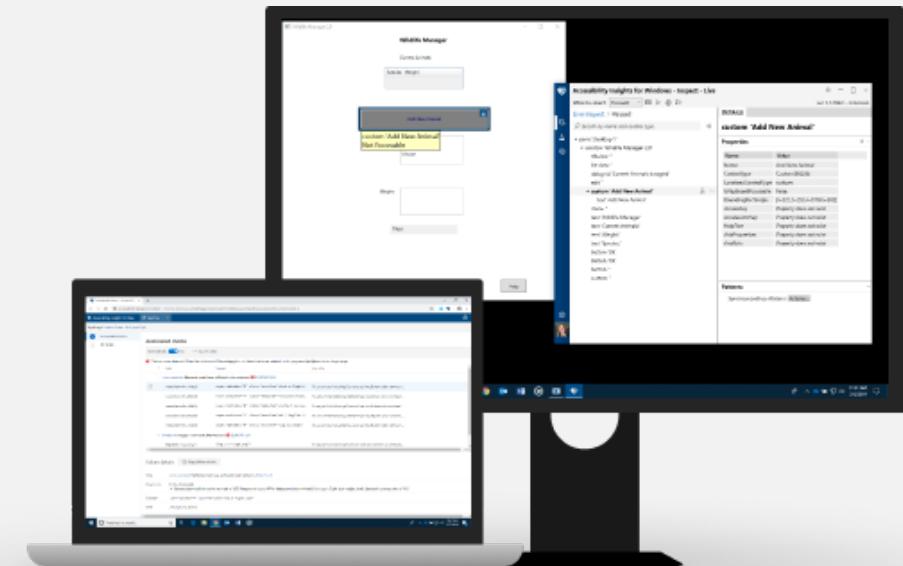
**Large Investment**

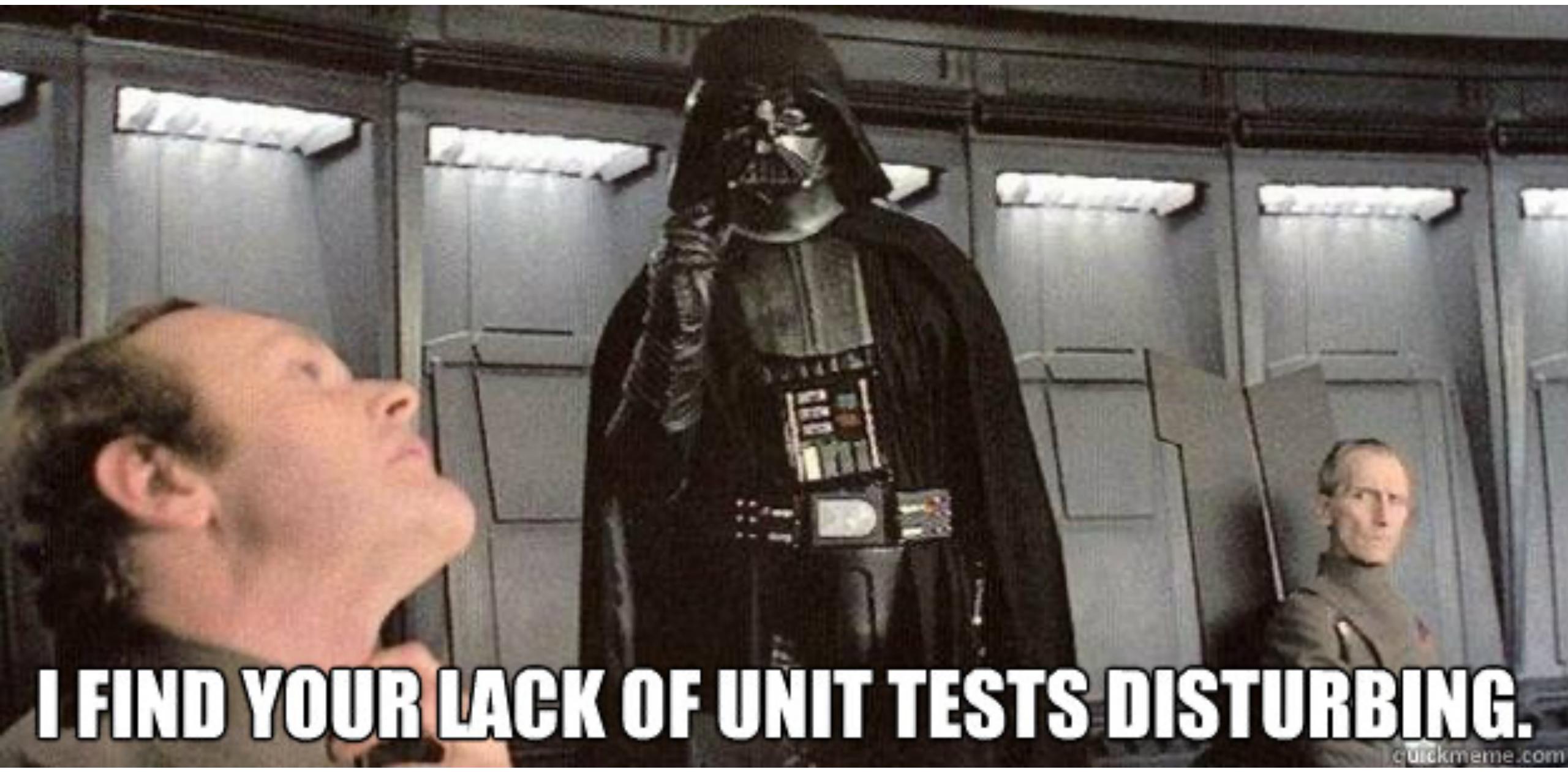
**⚠ Traditional**





# Tools

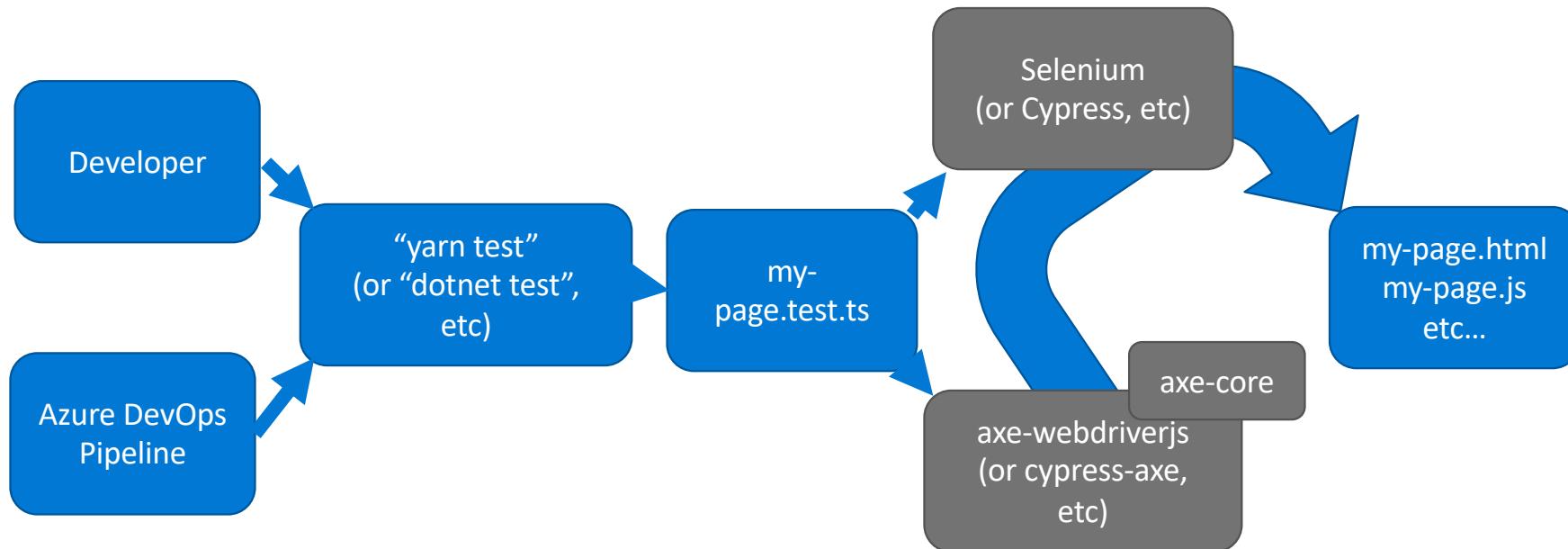




I FIND YOUR LACK OF UNIT TESTS DISTURBING.

# Scanning with axe-core

- axe-core is a javascript library (npm package)
- scans a rendered DOM
- reports back results as json
- Same engine that Accessibility Insights uses



Azure DevOps    / Pipelines / [failing example] csharp-sel... / 20200115.8    Search    Sign in

A axe-pipelines-samples

Overview

Pipelines

Pipelines

Releases

Jobs

← Jobs in run #202...

[failing example] csharp-selenium-webdriver-sample

Job win-chrom 1m 30s

- Initialize job 3s
- Checkout 4s
- install .NET Core 13s
- dotnet restore 34s
- dotnet test 33s
- Component Det <1s
- Post-job: Check <1s
- Finalize Job <1s

dotnet test

132  
133 Results File: d:\a\\_temp\VssAdministrator\_fv-az130\_2020-01-15\_21\_50\_38.trx  
134  
135 Test Run Failed.  
136 Total tests: 4  
137 Passed: 3  
138 Failed: 1  
139 Total time: 22.5409 Seconds  
140 ##[error]Error: The process 'C:\hostedtoolcache\windows\dotnet\dotnet.exe' failed with exit code 1  
141 Info: Azure Pipelines hosted agents have been updated to contain .Net Core 3.x SDK/Runtime along with the .NET Core 3.x runtime.  
142 Some commonly encountered changes are:  
143 If you're using `Publish` command with -o or --Output argument, you will see that the output folder  
144 ##[error]Dotnet command failed with non-zero exit code on the following projects : d:\a\1\s\csharp-  
145 Async Command Start: Publish test results  
146 Publishing test results to test run '16690'.  
147 TestResults To Publish 4, Test run id:16690  
148 Test results publishing 4, remaining: 0. Test run id: 16690  
149 Published Test Run : https://dev.azure.com/accessibility-insights/axe-pipelines-samples/\_TestManagement  
150 Async Command End: Publish test results  
151 Finishing: dotnet test

<https://github.com/microsoft/axe-pipelines-samples>

## A axe-pipelines-samples +

Overview

Pipelines

Builds

Releases

Library

Task groups

Deployment groups

Compliance

## ✓ #20190802.1: Bump lodash in /typescript-selenium-webdriver-sample (#49)

Triggered aug 1 at 6:00 pm for dependabot[bot] ⚡ microsoft/axe-pipelines-samples ➔ master ⚡ 1ffaaba

Release

Artifacts

⋮

Logs Summary Tests Scans

## Summary

1 Run(s) Completed ( 1 Passed, 0 Failed )

4

Total tests  
+44 ● Passed  
0 ● Failed  
0 ● Others

100%

Pass percentage  
↑ 100%

14s 240ms

Run duration ⓘ  
↑ +14s 240ms

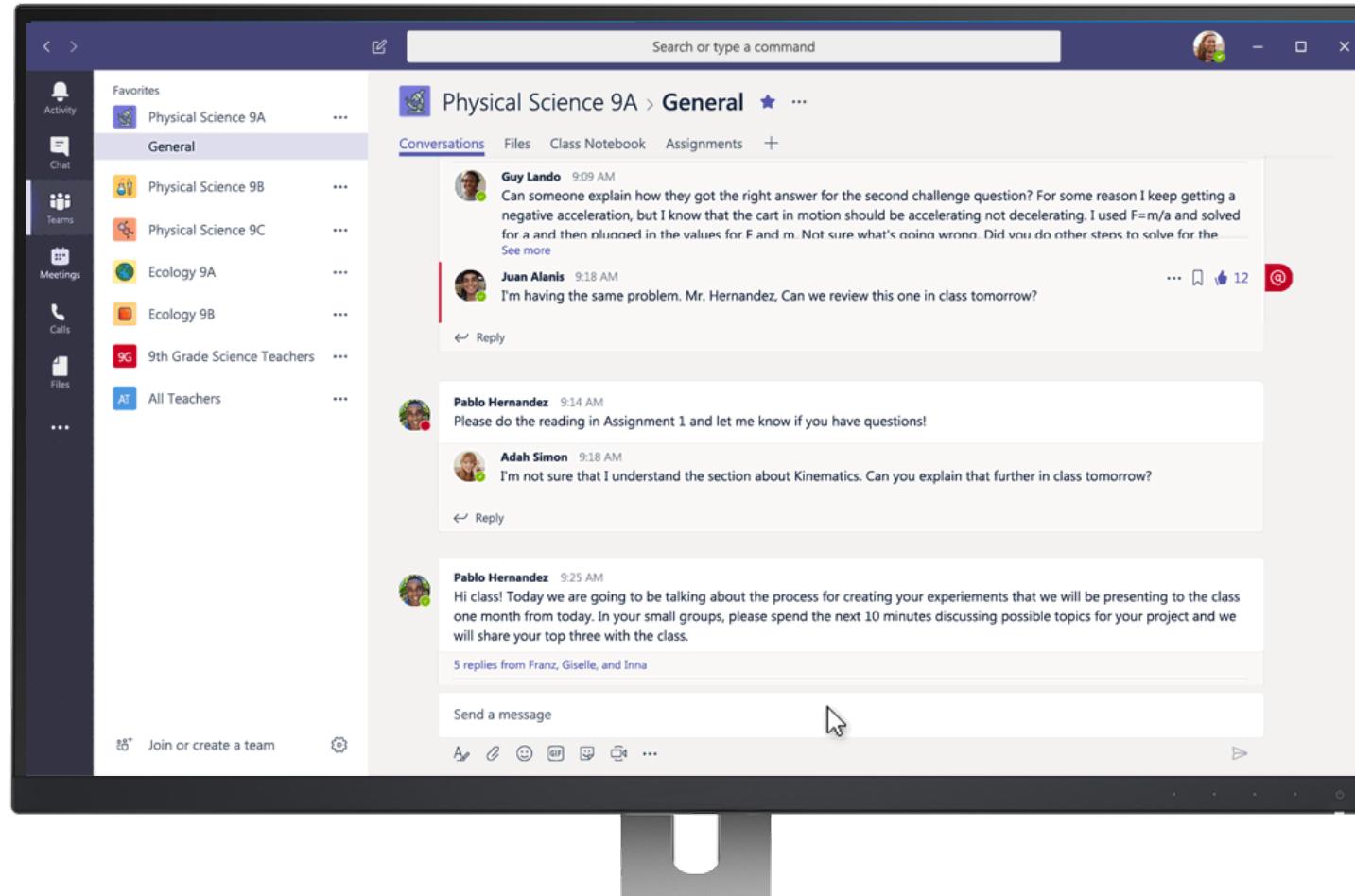
Test run Column Options

Filter by test or run name

Tags Test file Owner Outcome

Test	Duration	Failing since	Failing build	Tags
✓ ✓ typescript-selenium-webdriver-sample (4/4)	0:00:14.240			
✓ index.html has no accessibility violations in the h1 element	0:00:08.657			
✓ index.html has no accessibility violations outside of the known example violations	0:00:00.290			
✓ index.html has only those accessibility violations present in snapshot	0:00:00.290			
✓ index.html has only accessibility issues stored in our snapshot corresponding to only wcag2a and w	0:00:00.276			

# Immersive Reader



# What can it do?

n.  
Learning Tools Immersive Reader  
adj.

v. n. n.  
creates a reading experience that

v. n.  
adds accessibility and

Language

Learning Tools Immersive Reader

Immersive

creates a reading experience that adds accessibility and

Pronunciation

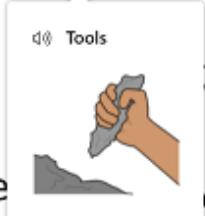
Learning Tools Immersive Reader

creates a reading experience

that adds accessibility and

Syllables

Learning Tools Immersive Reader



creates a reading experience that adds accessibility and

Pictures

Immersive Reader

Original | Spanish

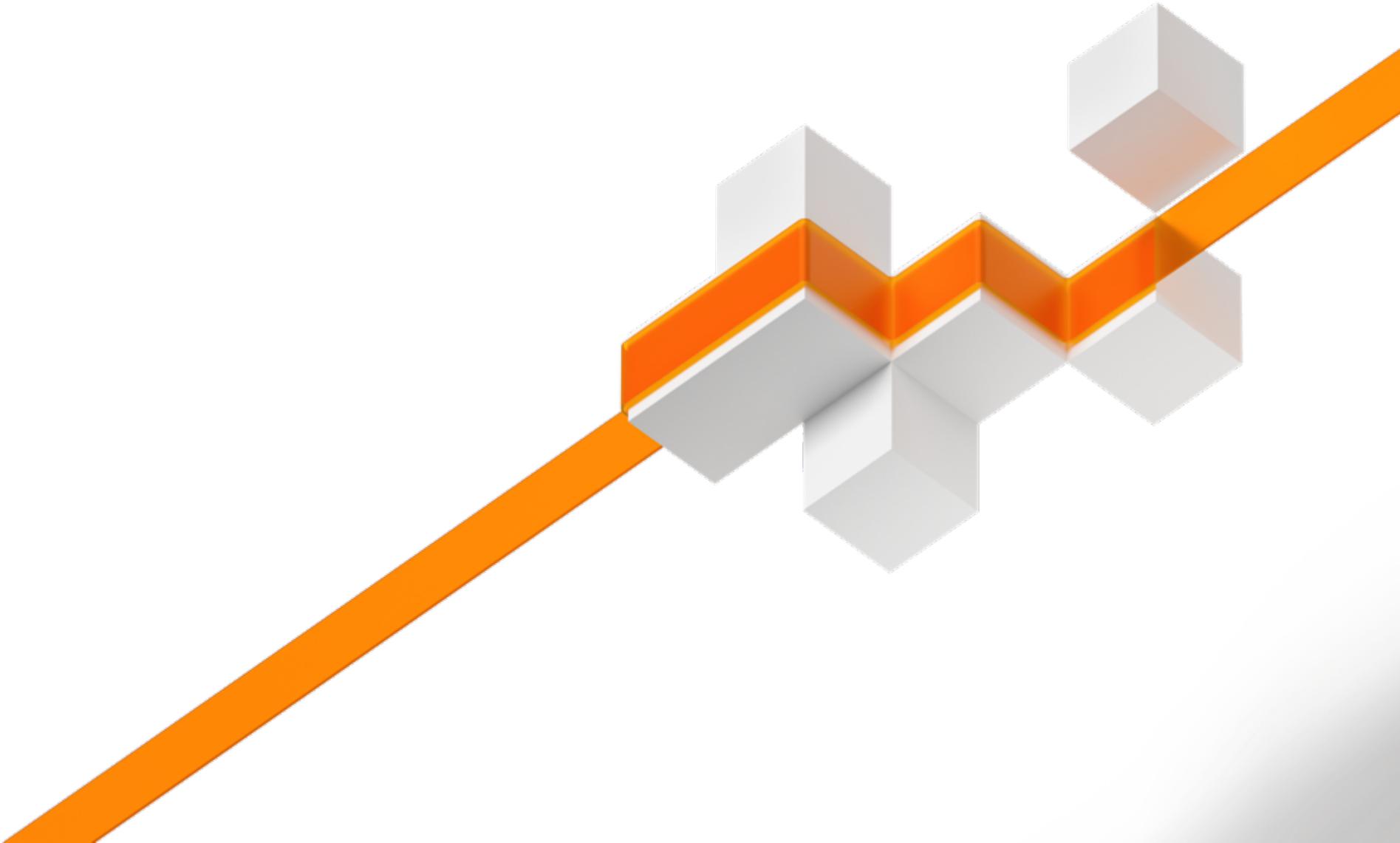
A

Learning Tools inmersiva Reader

crea una experiencia de lectura que añade accesibilidad y comprensión

Translate to 60 languages

Demo



# Conclusion

1. Empathy
2. Shift Left
3. Automate



<https://aka.ms/for-all>



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