

# Agile QA in a Corporate Environment. NorthStar Use Case

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## Algirdas Petrauskas, Senior Development Manager @ DanskeBank



Started my IT journey as Developer more than 10 years ago and went through the ranks of BA, PM, CTO for small companies, before joining DanskeBank

Now I'm taking care in Asset Finance IT :

- 40+ systems
- 40+ IT talents
- Millions in IT budget
- Billions in Business portfolio

# Our story



"Above all we are part of a crazy culture and we love it!"



# AMBITION

## Why Danske Bank goes Agile @ Scale

### Better solutions for our customers

- Prioritise efforts on what is most important for our customers in outcomes
- Systematically work with the customer journeys
- Address and improve customer journey touchpoints that are below expectations
- Co-create and validate solutions with users throughout idea qualification and development



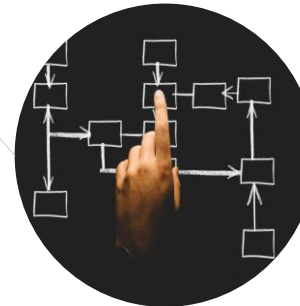
### Faster-time-to-market

- Solutions are scoped to “valuable sizes” perceived as beneficial in the eye of the customer
- Work in cross-functional teams for fast decision making
- Teams draw on each other’s competencies and continuously improve
- Stable teams accelerate high performance



### Focused on working effectively

- Less lead time as we work in cross functional teams
- Reach the right solution faster through customer involvement
- Less cost needed for experimentation
- Reuse of APIs will ensure stronger service orientation, flexibility, reusability and scalability



# Danske Bank is working on a moonshot journey towards a fully agile E2E transformation



## Incubate

### Mobile Life

Setting up a new business on the outside, becoming a first mover in several areas



JUNE

by Danske Bank



## Expand

### Asset Finance

Setting up a new business on the inside

NORTHSTAR

by Danske Bank



MobilePay  
By Danske Bank

## Experiment

### Mobile Pay

Market leading B2(B2)C mobile payment solution; Set up outside the bank



## Integrate

### Future Financing

Replacing existing business within the bank with a new solution

# NORTHSTAR

by Danske Bank

# Finance Cars and other stuff





# NorthStar is Asset Finance's bet for the future where the market moves faster than the traditional business can

## Danske Bank

### Danske Bank Asset Finance

- Independent subsidiary offering asset financing (e.g., cars, equipment)
- Leading car financier in Denmark
- Asset Finance has around 600 employees today
- Faces disruption, e.g. by mobility services and data driven competitors

### NORTHSTAR

by Danske Bank

- The strategy is to digitize and automate the core competency to compete in new markets
- Develops and commercializes new digital products in new and existing markets

### What is NorthStar?



Full **end-to-end** **capable** **business** from sales to core

IT



**Reinvents the core business** with scalable analytical and digital

capabilities



**<18 weeks from start to full release** of a new product in a new market



Built on latest technology but **inside the bank's legacy architecture**



Future-proofs analytical competence to automate "tacit knowledge"



**Transforming the mother company** on the way

## Digital customer facing solutions



Intuitive and convenient car selection tool determining car financing limit for the end customer in the Swedish and Norwegian vendor car market.

## Science-based asset risk engine



Automated, data-driven car valuation tool, which enables forecast of assets RVs, optimizes assets liquidation and assets portfolio risk management.

## Automatic credit decision process

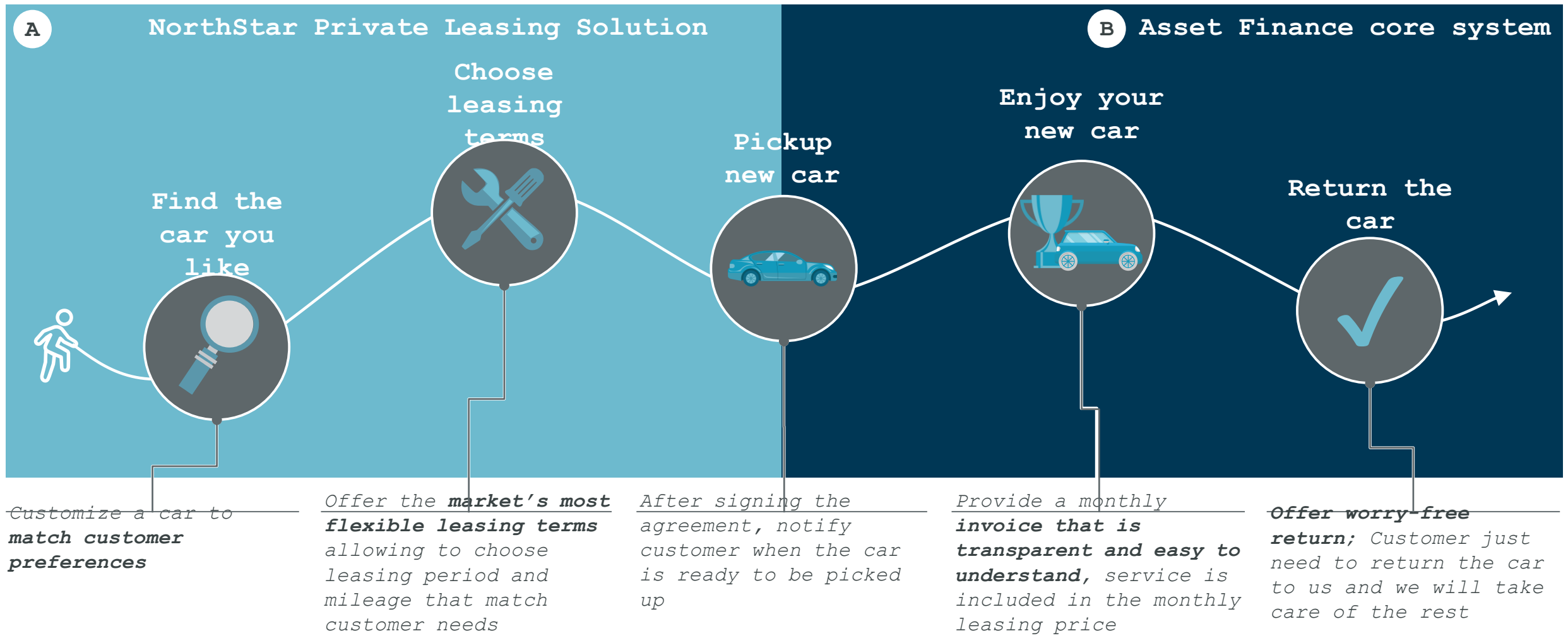


Fast and intuitive credit approval process with minimal information requirements.  
Automated credit decision with instant time-to-decision.



# Leasing customer journey

End-to-end customer journey

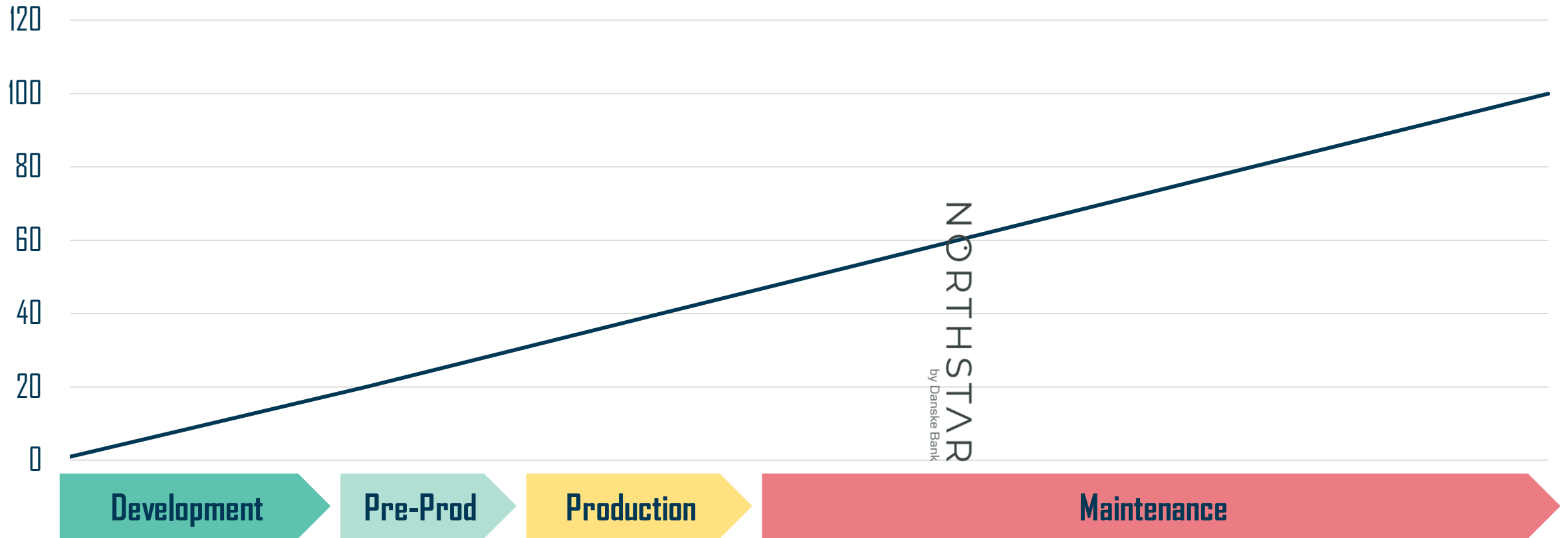


# Major Bug



Everyone is responsible for Quality

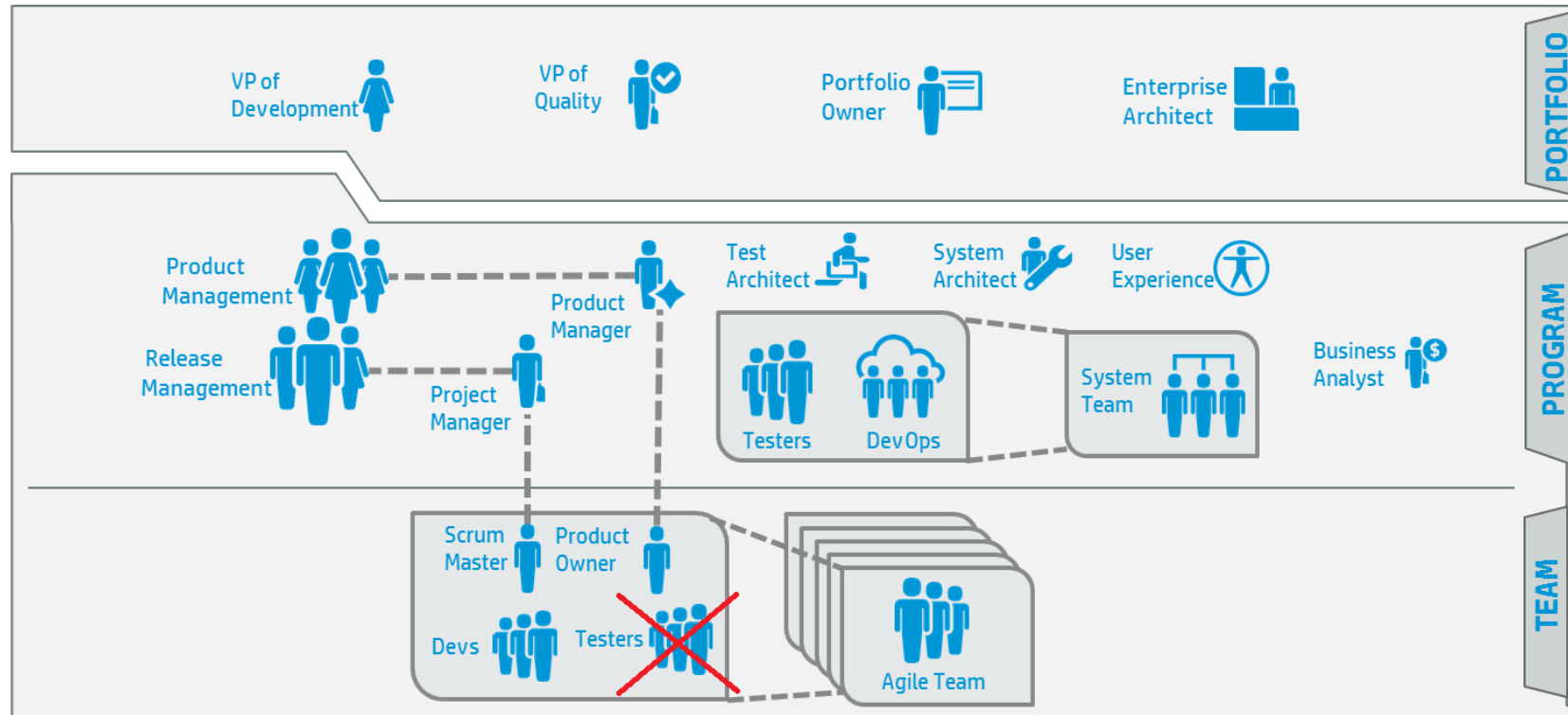
# Cost of finding bugs



The Systems Sciences Institute at IBM has reported that 'the cost to fix an error found after product release was 4-5 times as much as one uncovered during design, and up to 100 times more than one identified in the maintenance phase'.

But what if you don't have testers?

# What if Development Team setup does not have tester role - are we SAFe?



The absence of Testers role does not eliminate need to share testing responsibilities within Development Team.

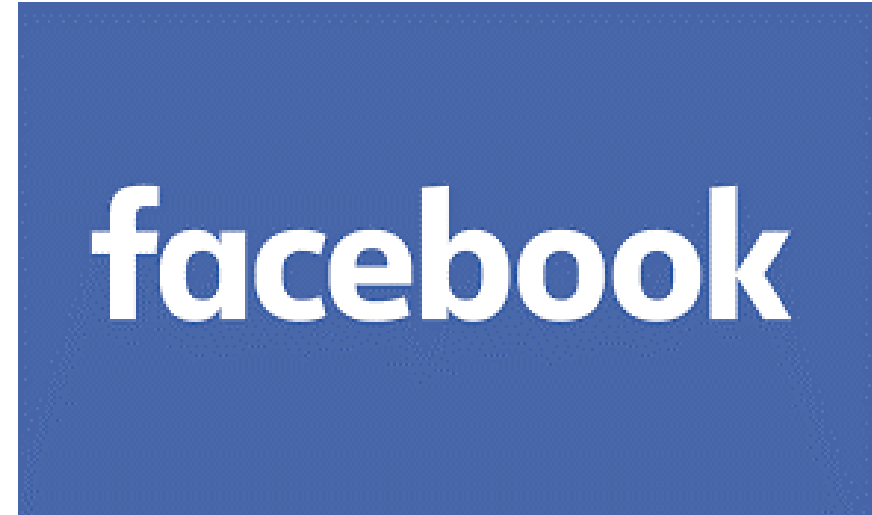
How to make it a success?



# On a plane I met Google engineer



Take inspiration from the world!



Customers: Billions  
 System complexity: Huge  
 Dedicated testers: 0

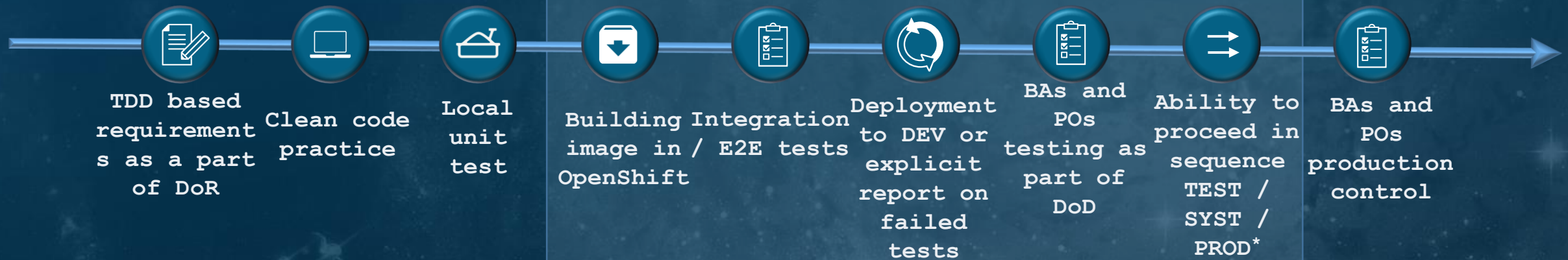
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# Everyone is responsible for Quality



Continuous delivery

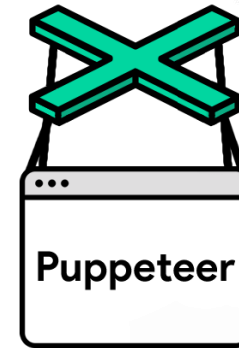
## Deployment Pipeline in OpenShift



\* Procedure of image building, integration and E2E tests and deployment is being executed for each environment.

# Testing tools (front-end)

- Jestjs.io
- Puppeteer/Google Chrome
- Selenium



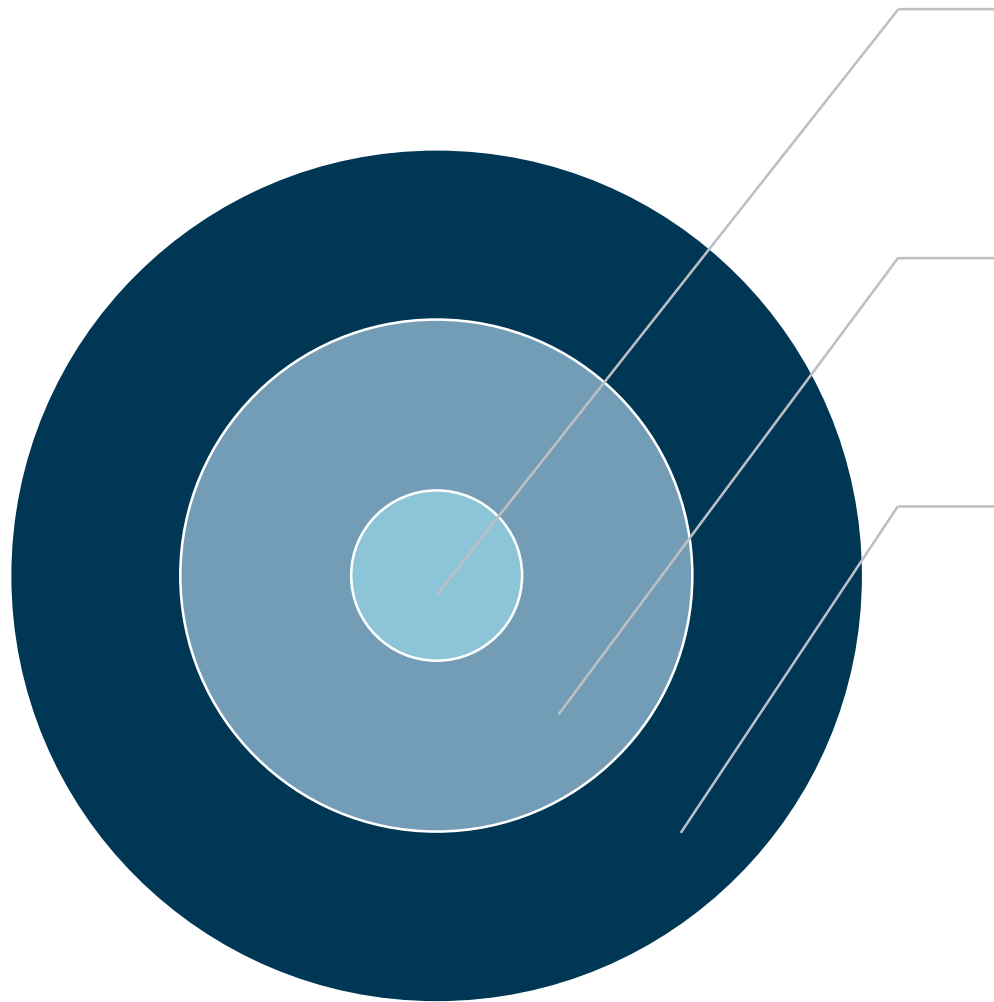
# Testing tools (back-end)

- JUnit
- Mockito
- WireMock
- SoapUI

The logo for JUnit, featuring the letters 'J' and 'U' in green and 'nit' in red.The logo for Mockito, featuring the word 'mockito' in green lowercase letters next to a glass of water with a straw and a mint leaf.The logo for WireMock, featuring the letters 'W' and 'M' in a stylized, 3D font. The 'W' is blue and the 'M' is orange.

SoapUI

# Exploiting different skillset in Development Team



**Developers:**

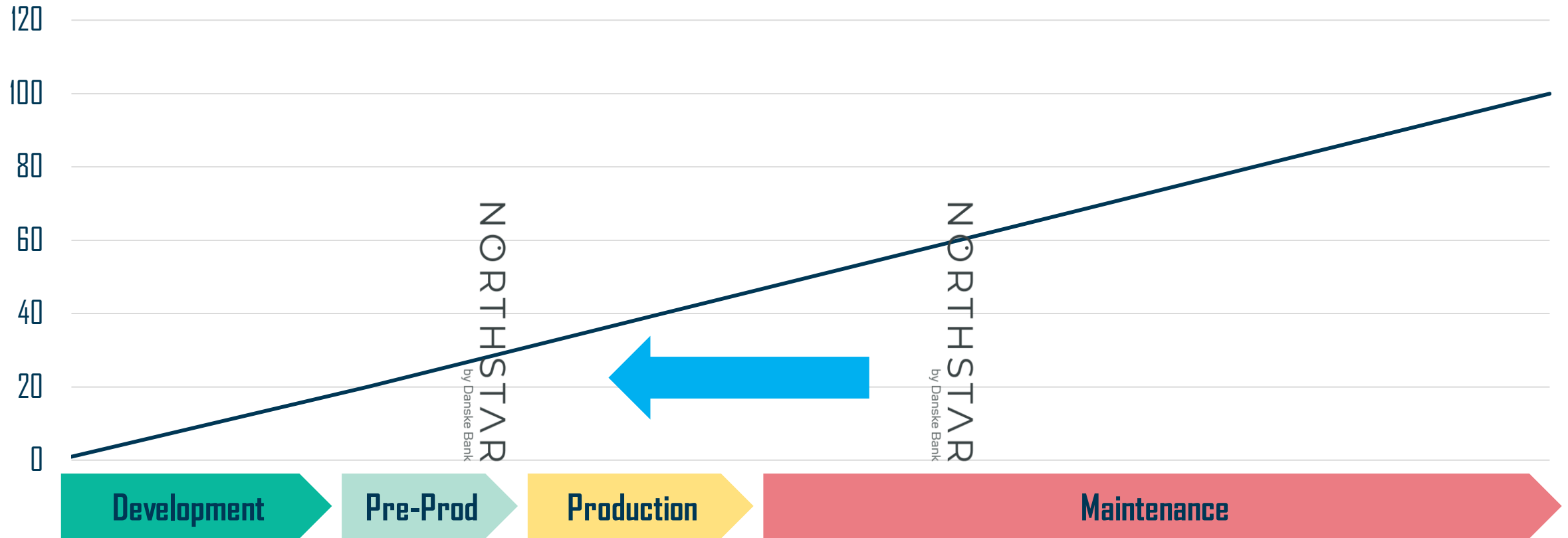
Taking advantage of testing tool-stack

**Business Analysts:** Manual testing according defined requirements and semi-automated E2E test

**POs and Business Representatives:** Testing specific edge cases based on business domain knowledge; production control

Everyone is responsible for Quality

# Cost of finding bugs – Shift Left



Developers tests coverage in NorthStar is 70 %, so BAs and Business representatives semi automated or manual testing also adds to overall result.



# Challenges from planning to executing

Too much testing left for the end of Sprint because of:

- Changes in requirements during Sprint;
- Features developed at the end of Sprint leaves no time for BAs and Business testing



Lack of testing scenarios documentation

E2E automated testing costs a lot developers time and requires maintainance

Unstable environments before the release are failing E2E tests

Focus to features delivery sometimes ends up with forgetting to dedicate enough time for testing while planning

# Few tricks to overcome testing challenges



Properly defined requirements in JIRA tickets:

- TDD practice – requirements provided including testcases
- BDD practice – ticket includes description how system should behave, enables UAT

SonarQube for automated inspection of code quality

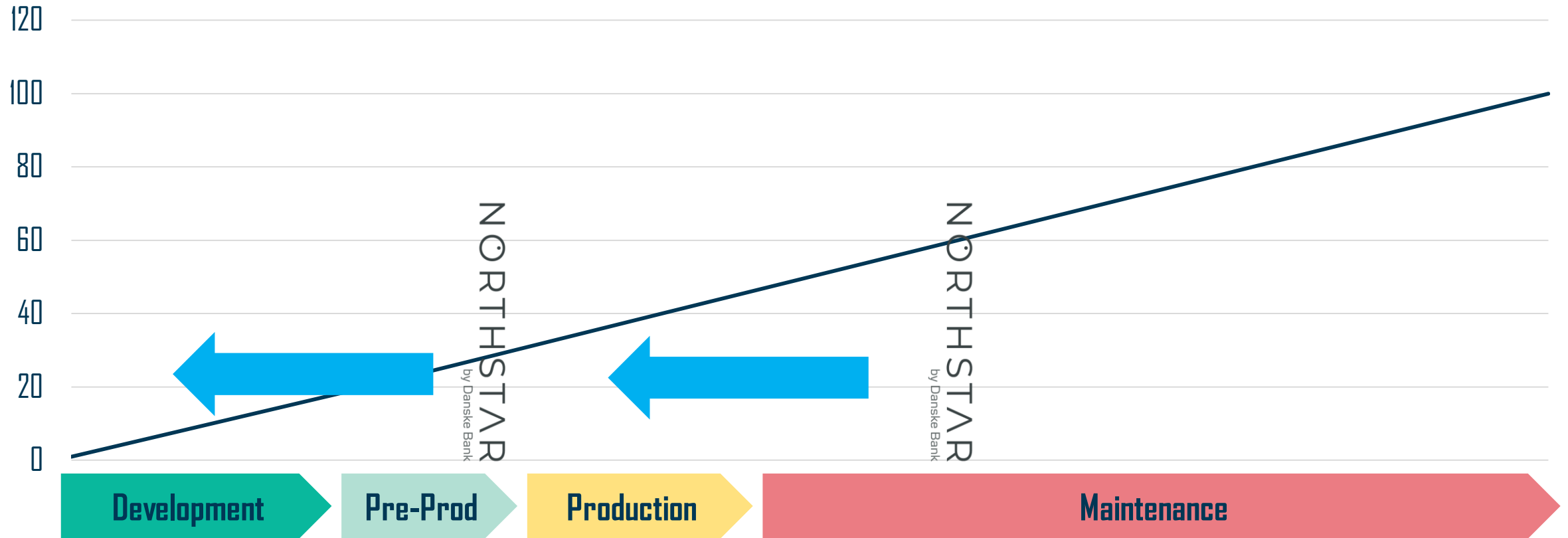
CI/CD – setting up automated tests in Openshift pipelines among the different environments

Tactical testers – Team of testers that do ad-hoc solutions testing, and are not dedicated to a team

POs testing and acceptance of deployed feature is part of Definition of Done

Everyone is responsible for Quality

# Cost of finding bugs – Shift Left



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# Everyone is responsible for Quality



A person wearing a light blue and white striped dress shirt and a solid blue necktie is holding a white rectangular sign. The sign is held in front of their chest, and their hands are visible at the top and bottom edges of the sign. The background is a plain, light blue color.

**TIME FOR QUESTIONS!**