nagarro

Step up to the next level of future-proof quality assurance

#bitesize webinar | Hannes Faerberboeck & Khimanand Upreti

Are these questions spinning in your head?

How can I create my processes and release cycles more efficiently for QA and development teams?

Why is testing still time-consuming, even though I have test automation in place?

Why does the end-product still have poor customer experience and defects despite spending a lot of money on testing?

How to ensure that everyone involved always sees the current proven progress and quality level?

Are we prepared for testing all the new technologies and massive distribution and scaling requirements?

It's time to level-up the quality ecosystem!

1 Why
do we have to go to the next level?

2 What
do we mean by the next level?

3 How
can we reach the next level?

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Challenges

"

More than 90% executive's face increased pressure to release products faster. [1]

More than 67% business leaders believe that future of their business depends on quality of software. [2]

Almost 40% of net new investment of organizations will go to predictive. [3]

At least 85% of governments without a total experience strategy will fail to transform services. [4]

"

1) Gartner, Press Releases, SYDNEY, Australia, January 28, 2016
2) "Surviving Disruption, Leading Change: Winning in the Application Economy", 2015
3) The Future of Big Data (fuelcycle.com): "Gartner reports that by 2020, prescriptive and predictive analytics will draw 40% of net new BI investments by enterprise. In a separate report, Gartner predicts the market for prescriptive analytics software will grow to $1.1B in 2019. (This is up from $415M in 2014)."
4) Gartner, Press Releases, STAMFORD, Conn. December 15, 2021, Gartner Predicts At Least 85% of Governments Without a Total Experience Strategy by 2023, Will Fail to Transform Services

Gartner's Top Strategic Technology Trends 2022

Data Fabric

Distributed Enterprise

Cloud Native Platforms

Cyber Security
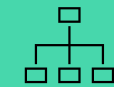
Privacy-Enhancing Computation

Total experience

AI Engineering

Autonomic Systems

Decision Intelligence

Generative AI

Hyper-automation

Composable Applications
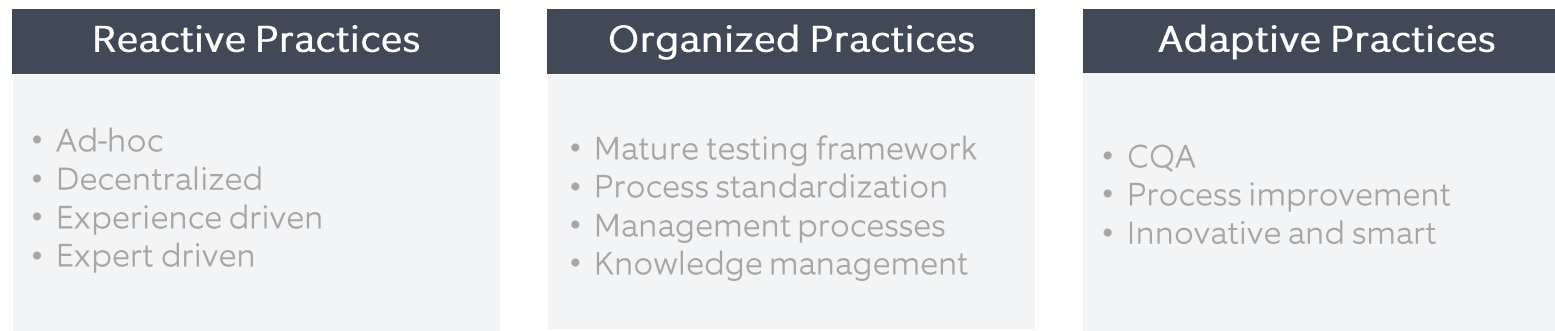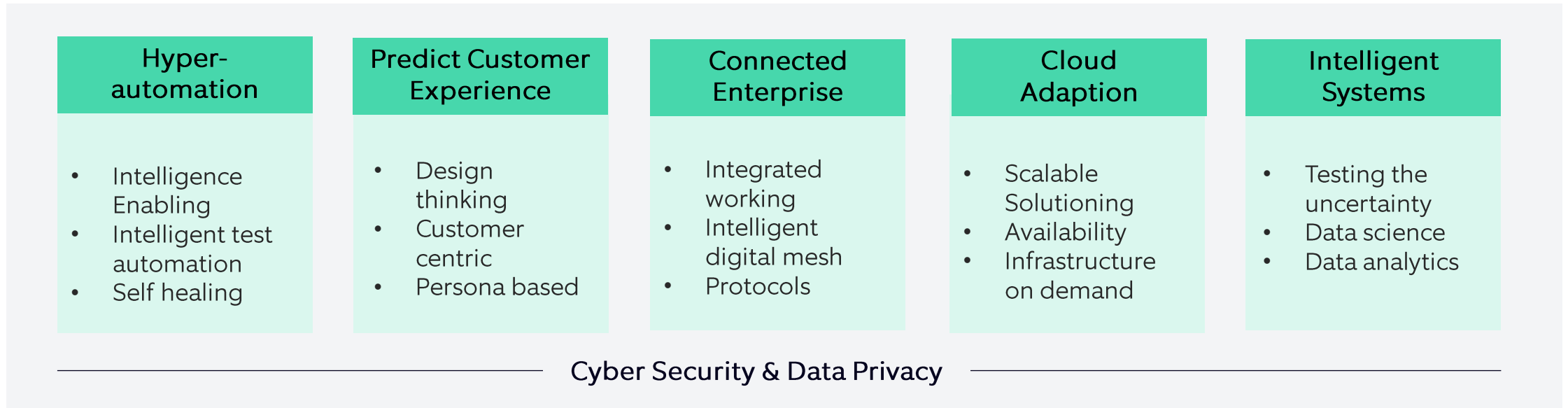
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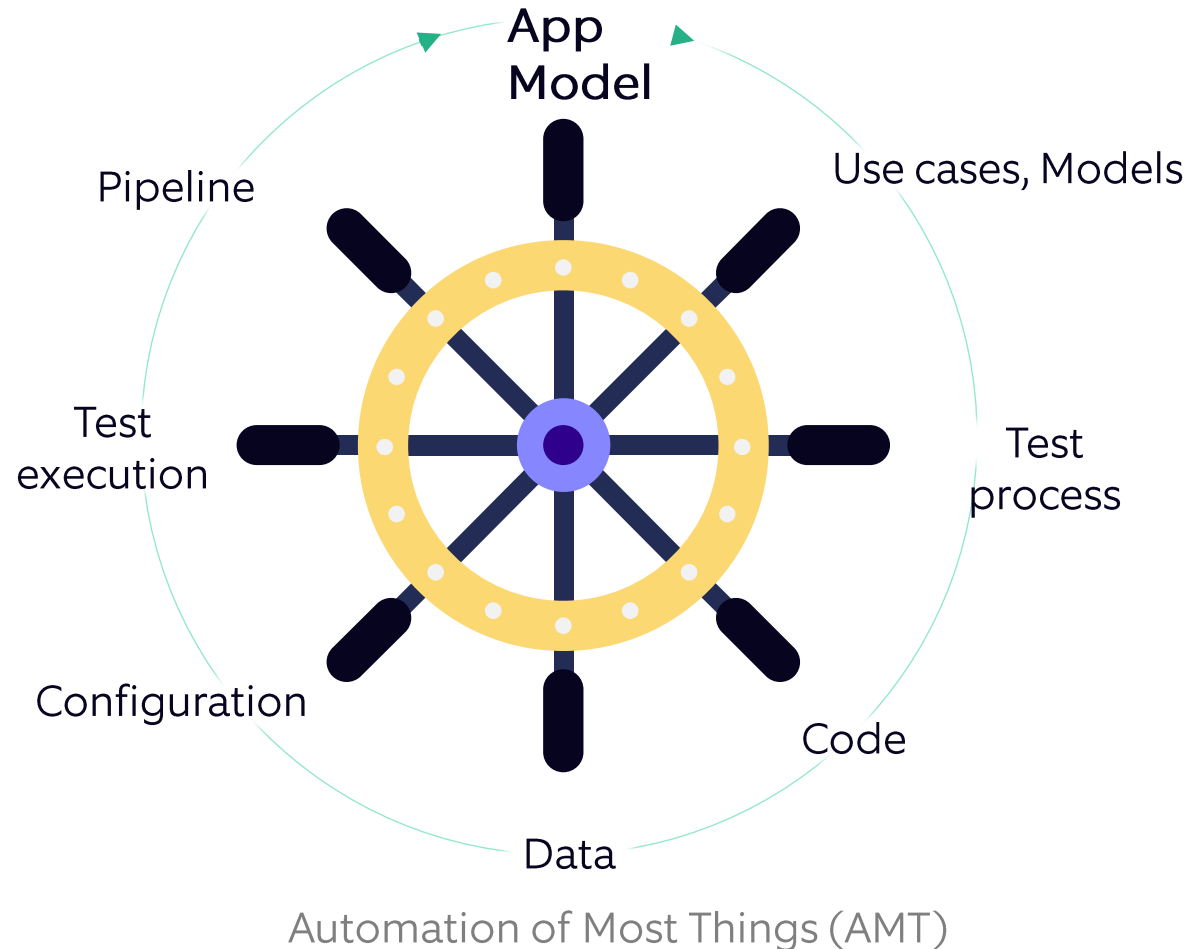do we mean by the next level?

3 How
can we reach the next level?

The 5 pillars of QA's next level

Hyper-automation
- Intelligence Enabling
- Intelligent test automation
- Self healing

Predict Customer Experience
- Design thinking
- Customer centric
- Persona based

Connected Enterprise
- Integrated working
- Intelligent digital mesh
- Protocols

Cloud Adaption
- Scalable Solutioning
- Availability
- Infrastructure on demand

Intelligent Systems
- Testing the uncertainty
- Data science
- Data analytics

Cyber Security & Data Privacy

Reactive Practices
- Ad-hoc
- Decentralized
- Experience driven
- Expert driven

Organized Practices
- Mature testing framework
- Process standardization
- Management processes
- Knowledge management

Adaptive Practices
- CQA
- Process improvement
- Innovative and smart

Lean QA & Continuous Quality

Hyper automation for QA:
Intelligent and covering the complete cycle

App
Model

Use cases, Models

Pipeline

Test
execution

Test
process

Configuration

Code

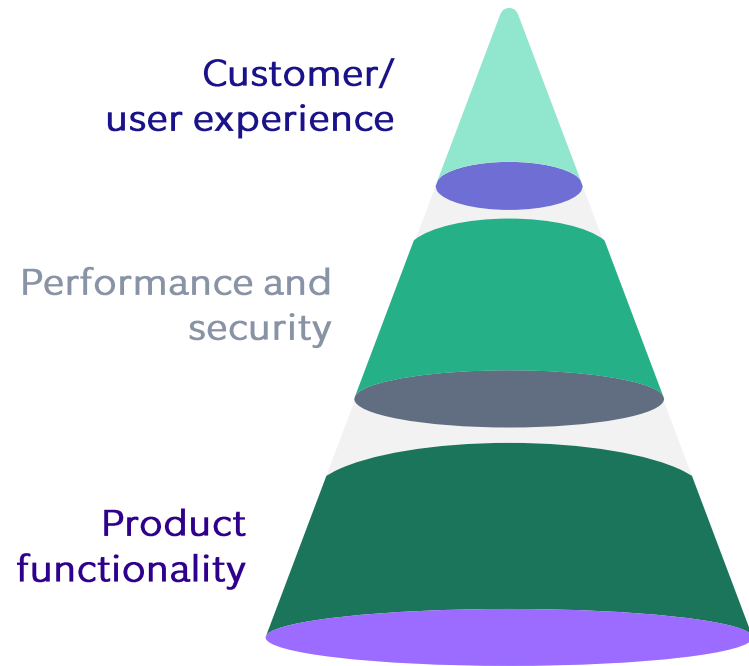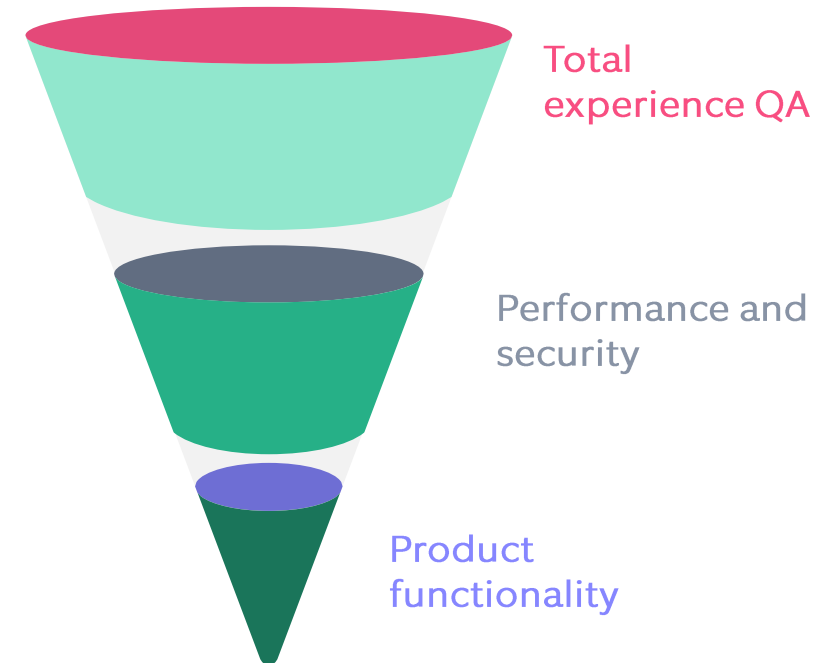Data

Automation of Most Things (AMT)

Examples:

- Model learning
- Automated test case generation
- Coverage detection & visualisation
- Intelligent risk indication
- Automated test data generation
- Virtualised environments
- Self-healing
- Intelligent log file analysis
- Automated root cause clustering

..... and this is just the beginning!

Predict customer experience: Functionality-centric to User-centric

Customer/
user experience

Performance and
security

Product
functionality

Design Thinking

Total
experience QA

Performance and
security

Product
functionality

FUNCTINALITY-CENTRIC
APPROACH OF QUALITY

USER-CENTRIC
APPROACH OF QUALITY
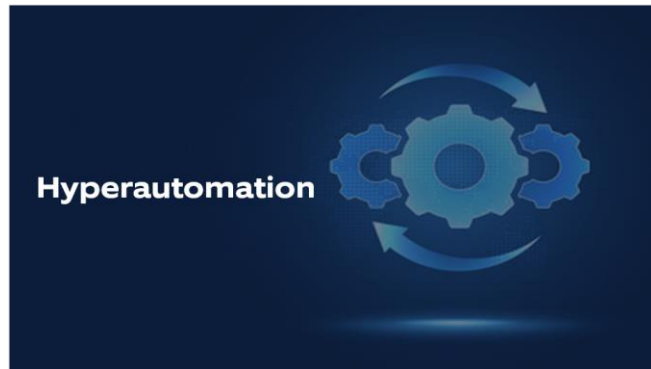
Nagarro's methodology to reach the next level

- Dedicated checkpoints for next level QA practices
- Analyzing ~200 checkpoints on recommended QA practices in key areas with different weighting

Hyperautomation

Total Experience

Connected Enterprise

Cloud

Intelligent Systems

Outcome
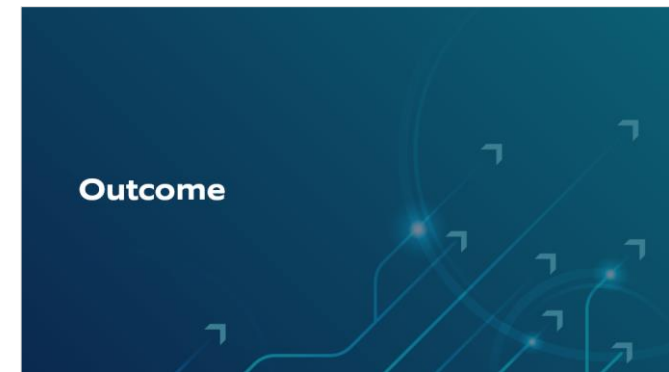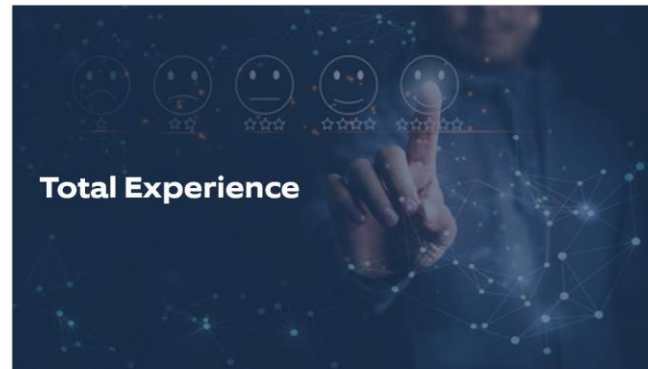
Hyperautomation

Hyperautomation

Evaluation topics

- Cycle coverage
- Use of AI / Intelligence
- Decision support & prediction
- DevSecOps, DevTestOps
- Deployment & release frequency
- Automation degree of CI/CD
- Tools: usage, consistency & state of art level

Key review areas

- Automation strategies
- Automation frameworks
- Automation coding guidelines
- Automation tools

Total Experience

Total Experience

Evaluation topics

- QA strategy for customer, employee & user experience
- Detection of silos or disintegration in place?
- Experience evaluation measures (early? continuous?)
- Ratio of user centric & persona driven QA / TCs vs requirement centric
- QA for multiexperience usage & accessability

Key review areas

- Test concept, strategies, test plans
- Persona driven test cases
- UX testing
- User interviews and persona creation
- Accessibility testing
- Privacy strategies

Connected Enterprise

Connected Enterprise

Evaluation topics

- Test pyramid analysis
- Integration test coverage
- Intelligent simulation & automation
- Security & privacy QA strategies, plans and evaluation / testing
- Resilience & chaos testing maturity

Key review areas

- Test environment management
- Test data management
- Integration strategies
- Test automation
- Chaos testing
- Security & privacy strategies, assessments, test plans

Cloud

Cloud

Evaluation topics

- Test data handling
- Environment handling
- Cloud testing strategy
- Scalability concepts & cost models + testing
- Security & privacy QA strategies, plans and evaluation / testing

Key review areas

- Test environment management
- Cloud strategies and data creation approaches
- Tooling
- Scalability testing
- Security & Privacy strategies, assessments, test plans

Intelligent Systems

Intelligent Systems

Evaluation topics

- Model QA: strategies, approaches, best practices, KPIs
- Tests for under-/overfitting
- AI decisions & categorizations validation
- Testing in production: usage, evaluation & deployment of shadow models

Key review areas

- AI systems testing strategy
- Model training and tuning
- AI decisions & categorizations
- Model test sets
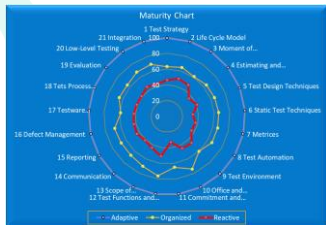- Tooling
- Ethical testing approaches
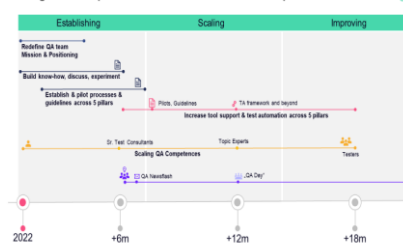
Outcome

Outcome

- Building awareness & creating initial dynamic
- Presentation, Discussion & Report
  - Status assessment
  - Recommendations
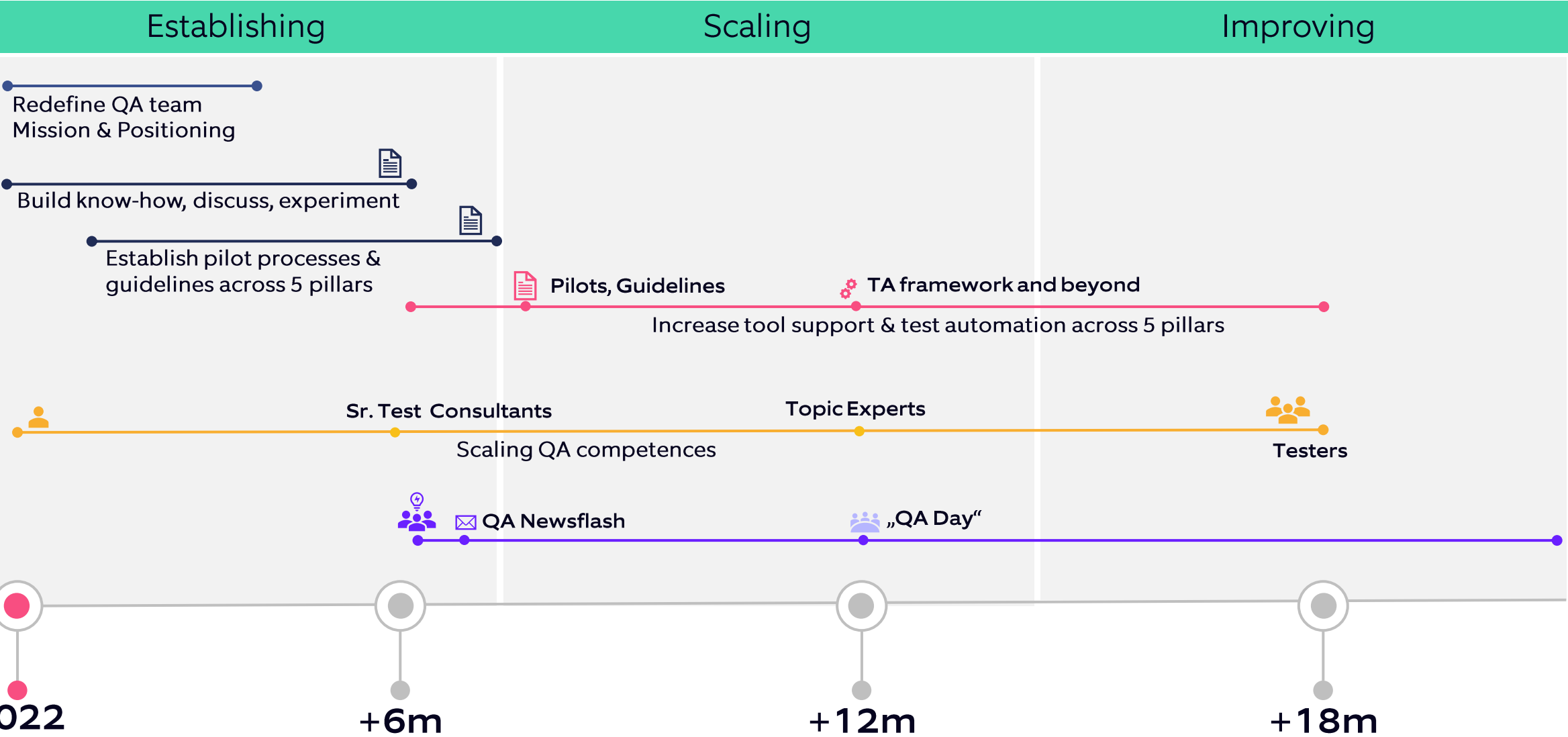 - Improvement backlog
  - First steps & Roadmap

Nagarro's template to reach the next level

Establishing	Scaling	Improving

**Redefine QA team
Mission & Positioning**

Build know-how, discuss, experiment

**Establish pilot processes &
guidelines across 5 pillars**

Pilots, Guidelines   **TA framework and beyond**

Increase tool support & test automation across 5 pillars

Sr. Test Consultants   **Topic Experts**

Scaling QA competences

Testers

QA Newsflash   **„QA Day"**

2022   **+6m**   **+12m**   **+18m**

Let's move to
the next level
together!
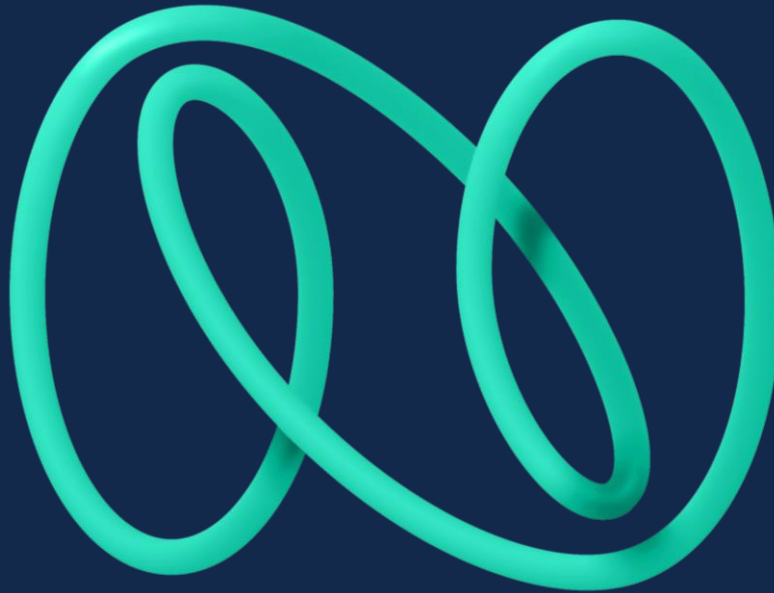
Reach out to us: aqt@nagarro.com