

DevOps Assessment – with a focus on Testing



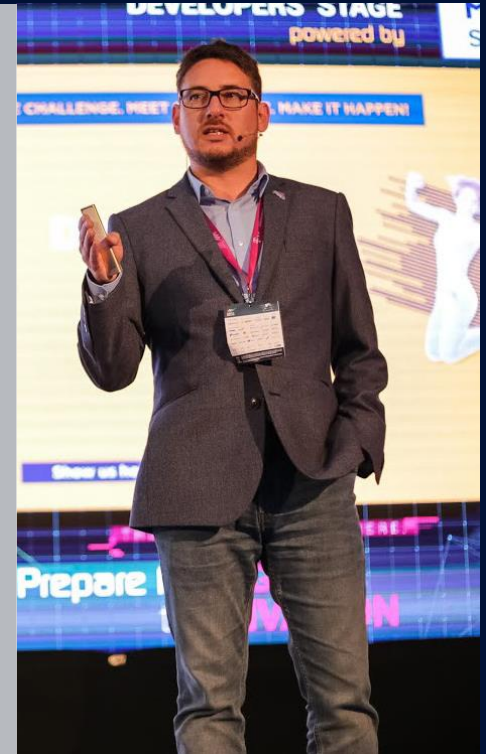
Szilard Szell, DevOps Evangelist, SAFe SPC, NOKIA
SQA DAYS - 25th May, 2018, Minsk

Introduction

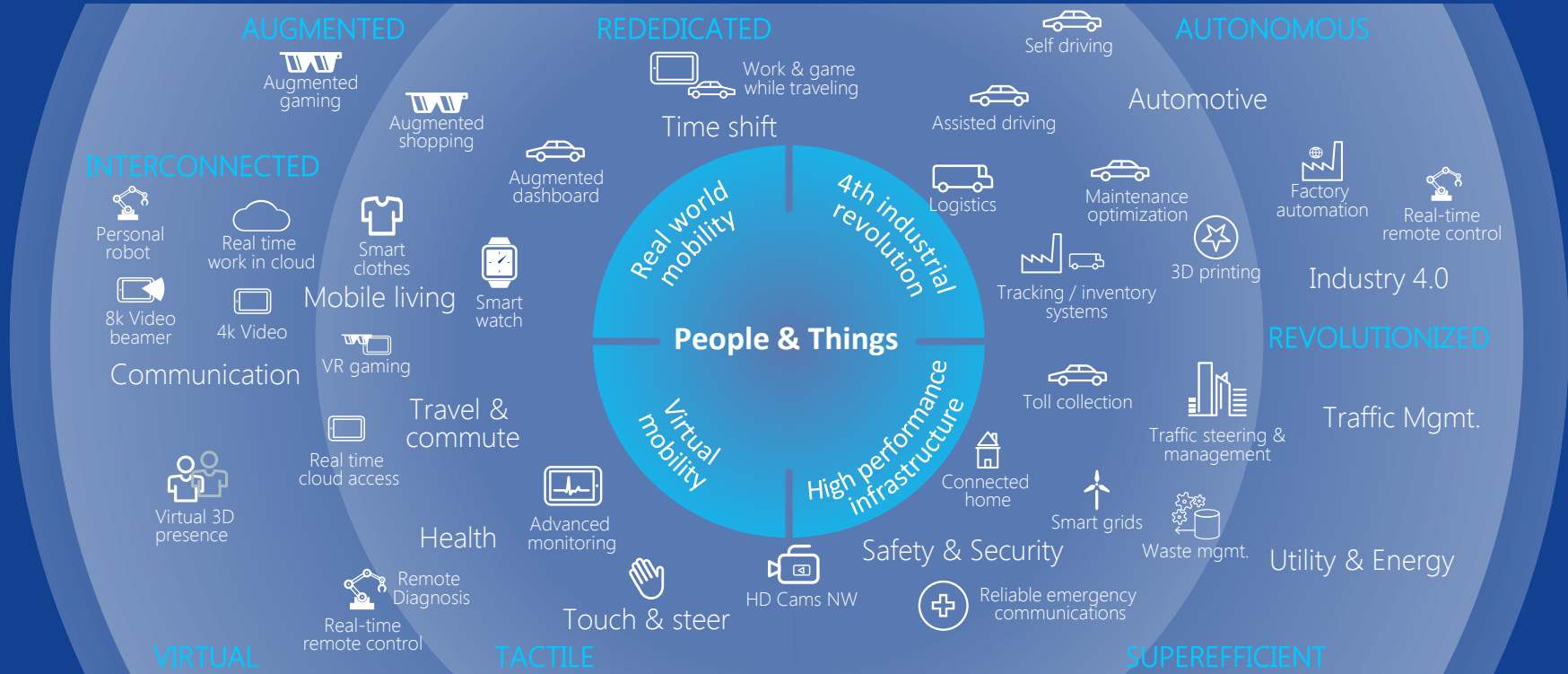
Szilárd Széll – DevOps Evangelist, NOKIA

- Responsibilities
- Test Coach and DevOps Evangelist in NOKIA with 18 years experience
- President of the Hungarian Testing Board
- ISTQB Process and Compliance Work Group Chair
- Program Committee Chair and Member of – UCAAT and HUSTEF

- Certifications
- DevOps DASA Foundation, SAFe SPC, Certified Scrum Master
- ISTQB CTEL-ITP-Full
- IREB CPRE
- Lean Six Sigma Green Belt



Explosion of possibilities announcing new performance levels of people and things

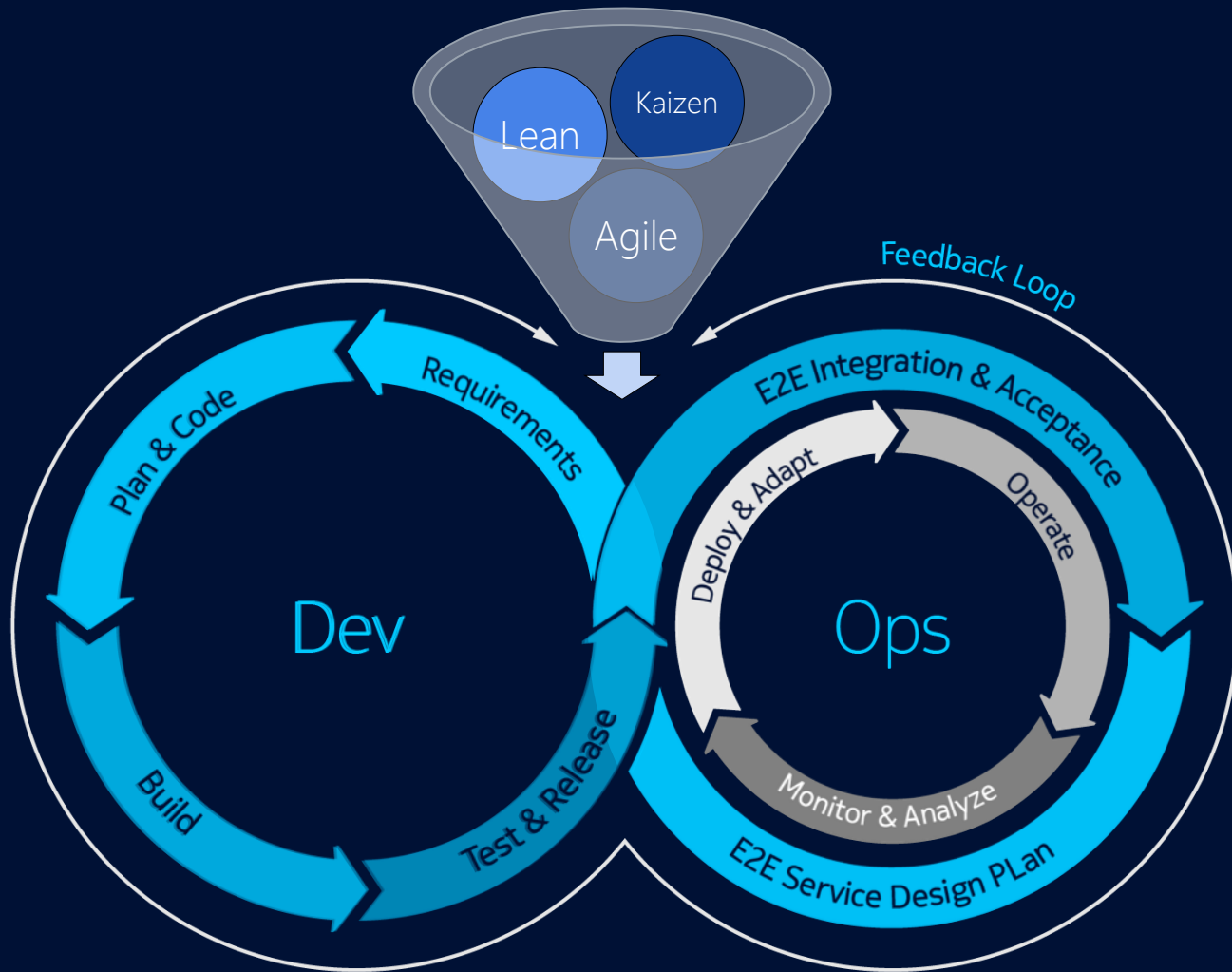


Agenda for today



- 1 DevOps in a Nutshell
- 2 DevOps Assessment
- 3 Testing Aspects of DevOps
- 4 Summary

DevOps



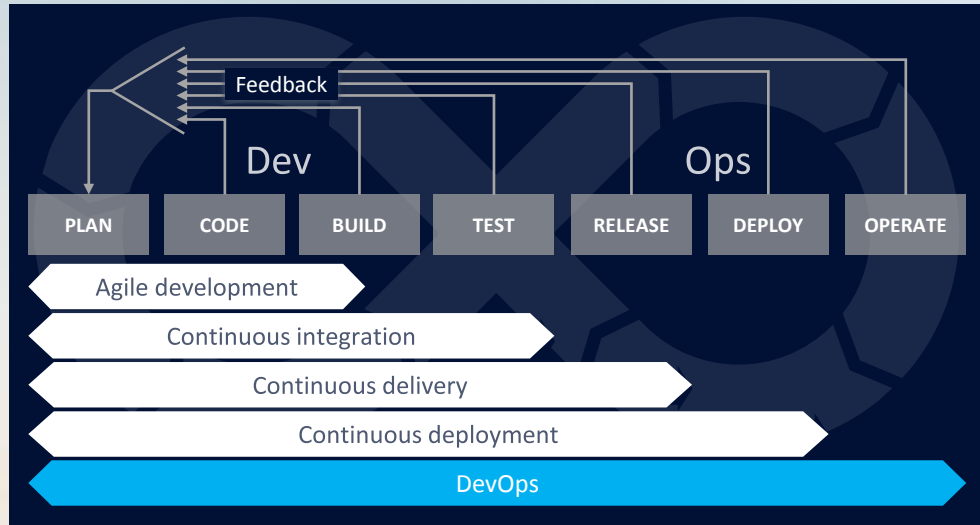
DevOps – for highest business agility

Radically reduced cycle time for higher value capture and faster time to market

WHY

- Culture for quality and transparency
- Business agility
- Full automation
- Simplify operations

WHAT



HOW

- Microservices & containers
- Automated workflows
- Continuous SW delivery
- Digital delivery: Core AppStore

Fewer failures

Faster time to market

Operational efficiency

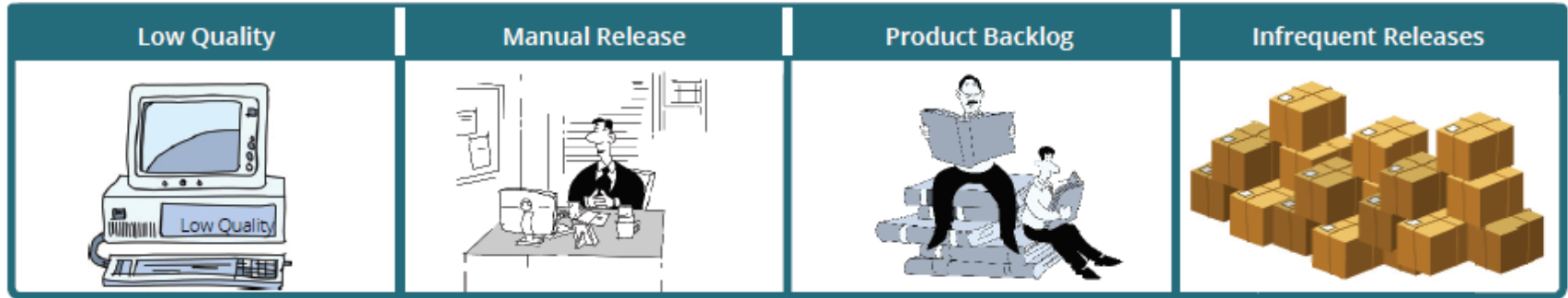
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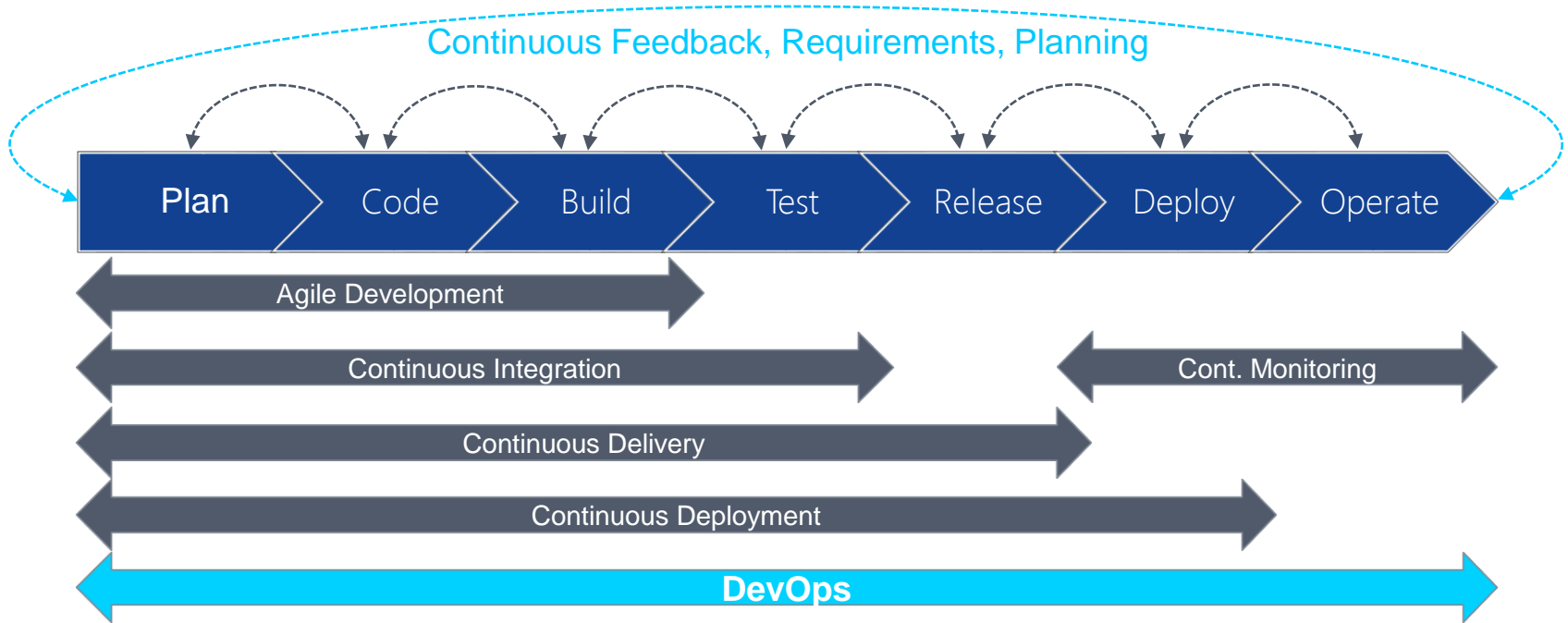
Goal of DevOps Center of Excellence

Driving DevOps transformation



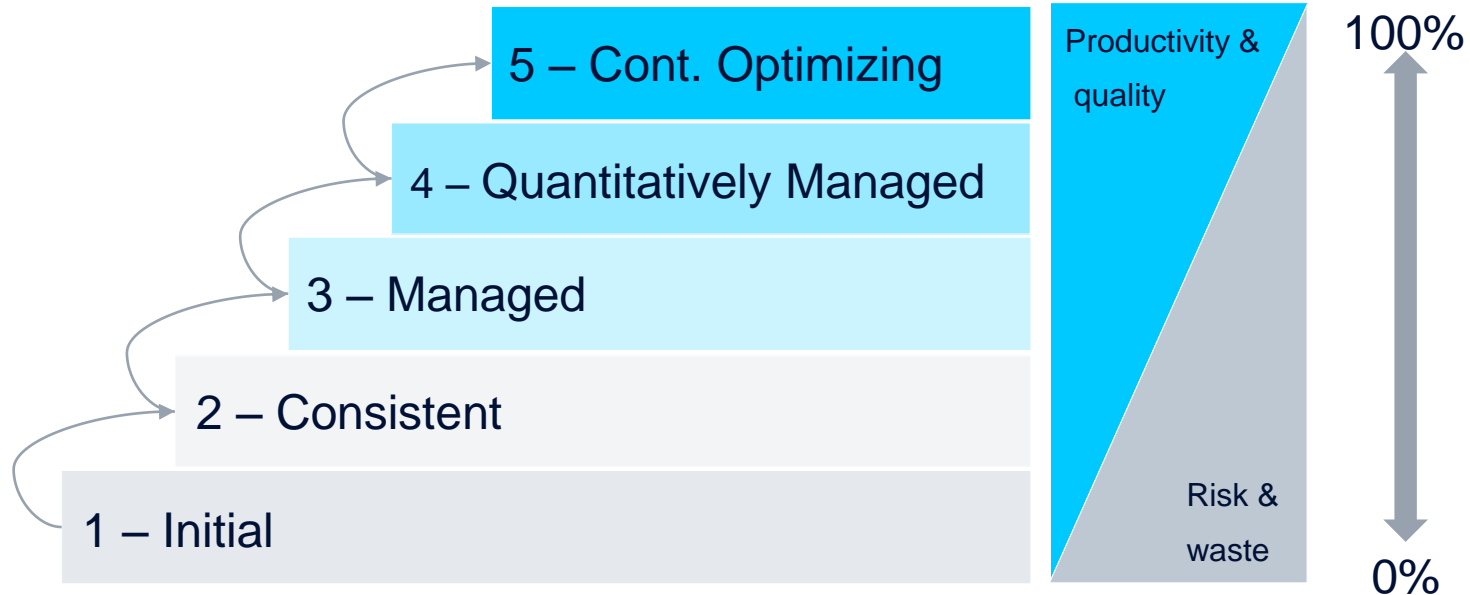
What is the scope of the DevOps Maturity Model?

Continuous @everything in the Software Lifecycle



Maturity Levels of DevOps Maturity Model

Similar to other frameworks (e.g. CMMI, TMMi)

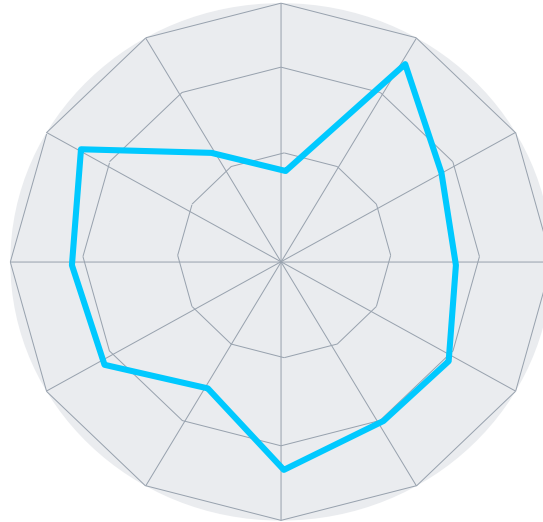


The 12 Assessment Categories

Addressing DevOps capabilities end to end – like TPI Next



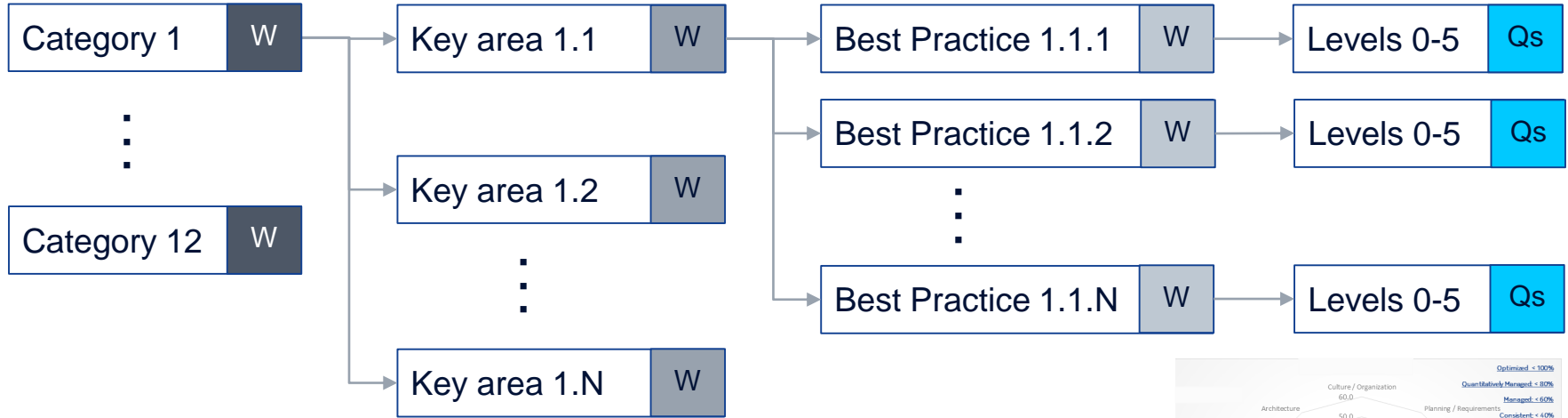
- Culture & Organization
- Planning & Requirements
- Software Config. Management
- Continuous Integration
- QA & Verification
- Architecture



- Visibility
- Upgradability
- SW Maintenance Monitoring & Feedback
- System Integration
- Network Implementation
- Network Planning and Optimization

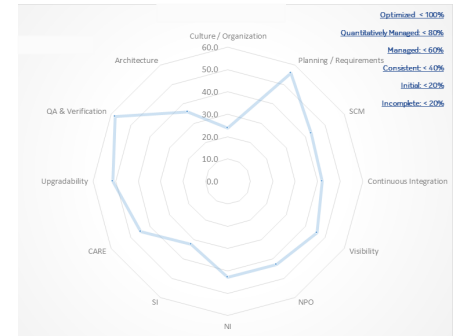
Model Structure and Logic

For calculating a weighted maturity score



W: Weight

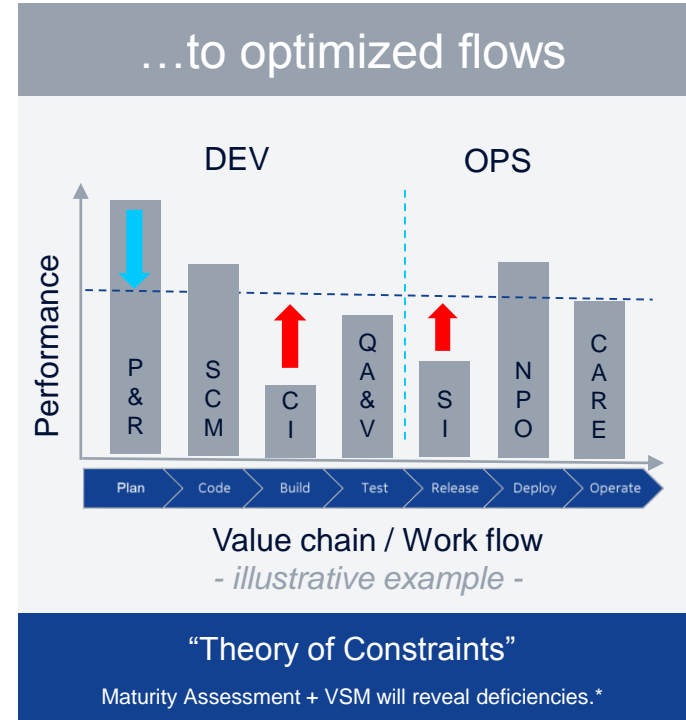
Q: Questions



DevOps Maturity Model will provide e2e insights and awareness



Illustrative examples only



Example Survey Question – Illustrative example only

From questions to conclusions to actions



Cat. QA & Verification - Determining capability in Test automation					
Which description fits best the current situation in test automation?					
Test case scripting	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scripts are utilized to perform repetitive tasks in testing		Test automation framework is used	SW dev. best practices are followed in test case automation	Test Cases are designed to be automated	Test Design Automation in place
Test results analysis & reporting	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Test Results are analyzed manually		Test case result is analyzed automatically, but reported manually	Automatically, test case verdict produced AND Test result reported	Test results cover NFRs and deteriorating trends in these trigger error	Machine Learning and Analytics is utilized to analyze test case result



Measure	
Level 0	<input type="radio"/>
Level 1	<input type="radio"/>
Level 2	<input checked="" type="radio"/>
Level 3	<input type="radio"/>
Level 4	<input type="radio"/>
Level 5	<input type="radio"/>



Analyze

Identify key issues:

Example:

- QA has automation but automation code in not well written, coding best practices not in use. Automation takes too much effort
- Test Results are analyzed Automatically, but Reporting to Test Management is still manual, no Visibility



Improve

Choose changes for implementation:

Example:

- Introduce Static Code Analyses and Code Review practice for Automation Code
- Automate Test Result Reporting to Test Management



Control

Sustain the gains
Monitor the improvements to ensure continuous improvement

Example:

- Follow up Automation code Technical Debt measures as KPI



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What is important for QA & Verification in DevOps?

Value driven testing embedded in the DevOps pipeline

In DevOps good testing can be achieved through

Customer Collaboration and **Test First Thinking**

with the aim to provide **Continuous Product level Quality Assurance**,

while being efficient by

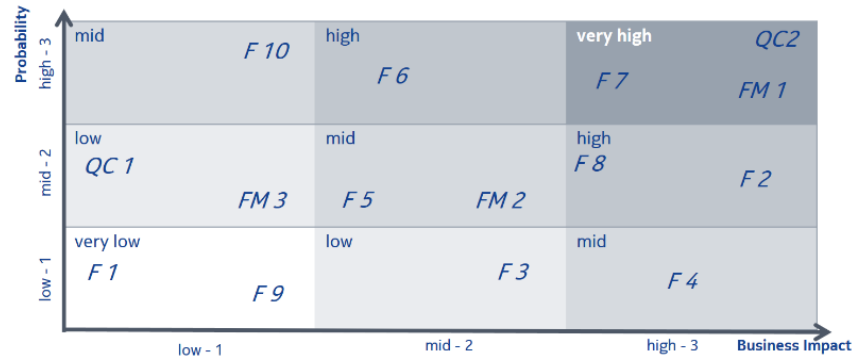
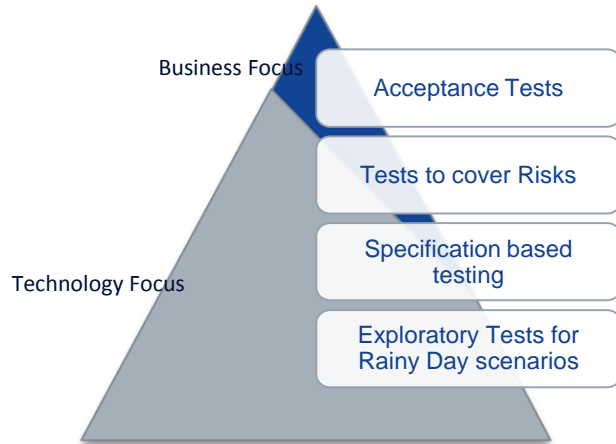
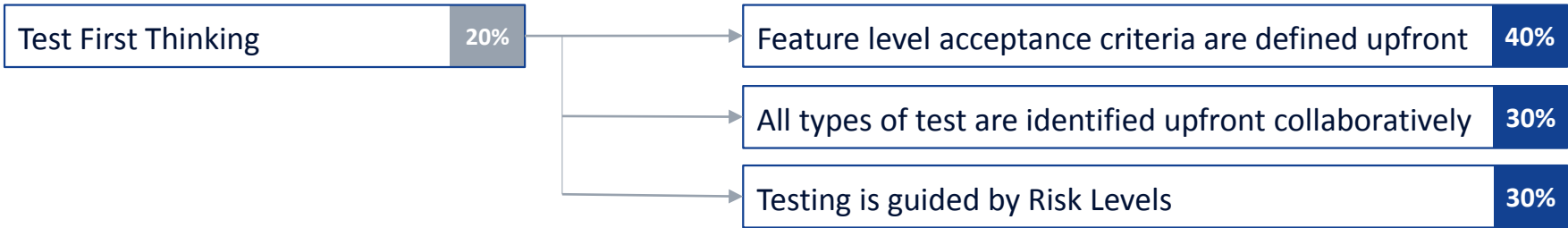
Utilizing the lowest possible test level,

Automation of Testing tasks

as well as by **Sharing (testing) tools** and assets

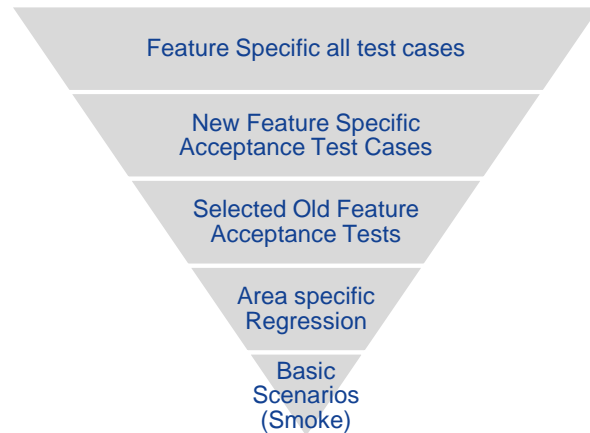
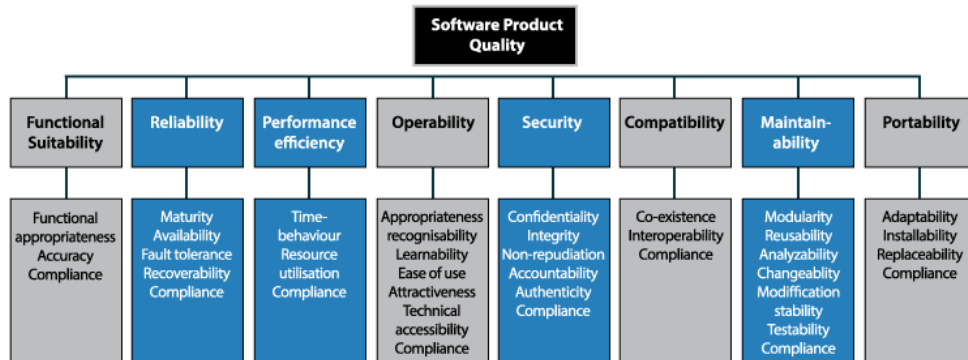
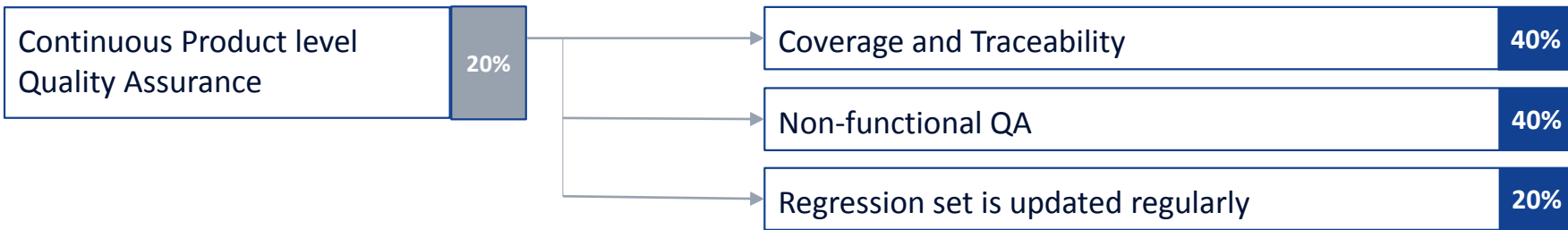
across the Value Stream.

Category – QA & Verification – Key Areas (1/5): Test First Thinking

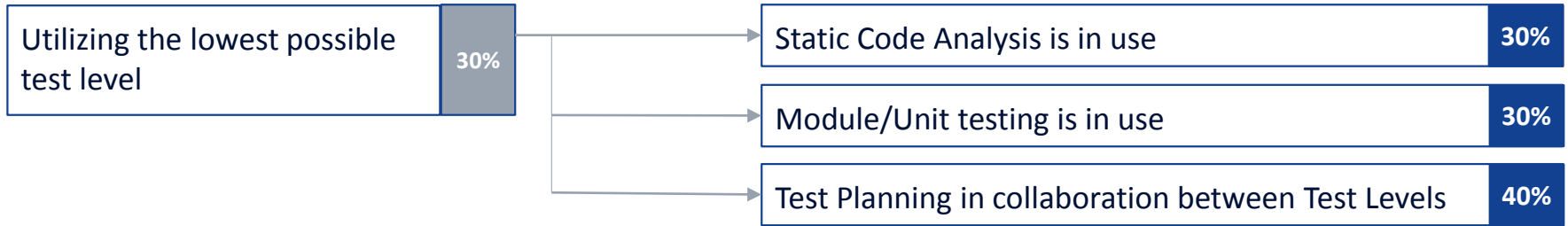


Fx – Feature x or Functional Requirement
QCx – Quality Characteristic or Non-functional Requirement
FMx – Failure mode

Category – QA & Verification – Key Areas (2/5): Continuous Product level Quality Assurance



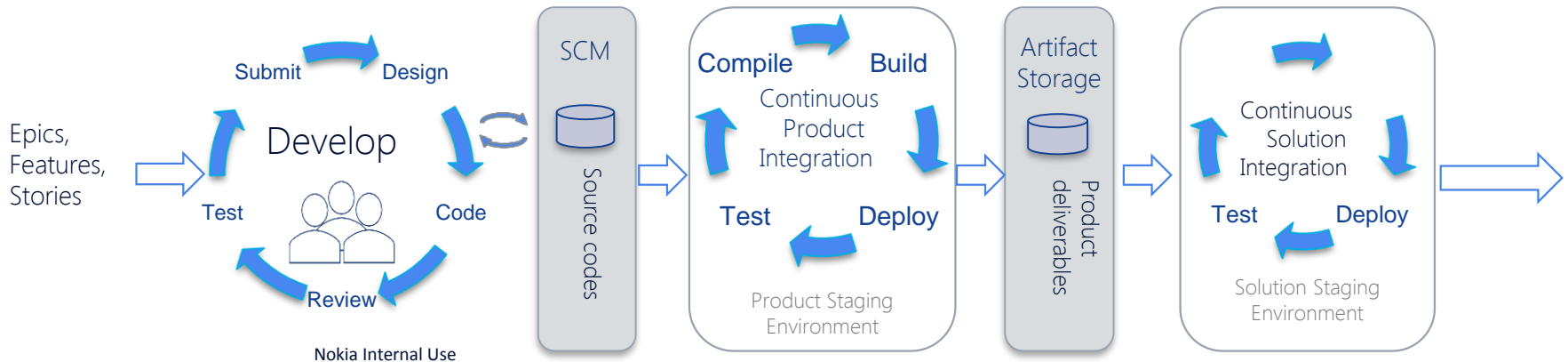
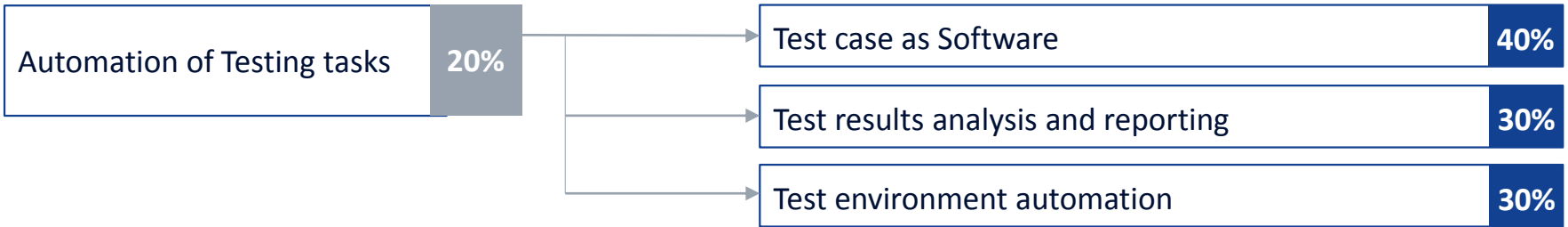
Category – QA & Verification – Key Areas (3/5): Utilizing the lowest possible test level (Shift Left)



Product Aspect	Specification Review	Static Analysis	Component Test	Product Integration	System Test	System of System Int.
Functionality	Feedback	Feedback	Feedback	Feedback	Feedback	Certify
Performance	Feedback	Feedback	Feedback	Feedback	Certify	
Reliability	Feedback	Feedback	Feedback	Feedback	Feedback	Certify
...						

Blue arrows indicate a shift left in testing activities: one arrow points from the 'System Test' column back to the 'Specification Review' column for 'Functionality', and another points from the 'System of System Int.' column back to the 'System Test' column for 'Performance'.

Category – QA & Verification – Key Areas (4/5): Automation of Testing tasks



How to translate levels into real-life scenarios?



Dream state scenario:

Tester is a **value driven role** in the DevOps team who is **collaborating** throughout the value chain up to the **customer**, driven by **knowing the risks**, providing quick **feedback** on development and **quality assurance of product**, using **shared tools** and **commonly available automation solutions**, building on **Continuous exploration** and **improvement**



Pessimistic scenario:

Testing is a **cost driven**, separated **silos** at the end of the pipeline, being a **bottleneck** caused by its **low automation**, long feedback cycle, outdated practices and tools

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Summary

- Big size transformation needs an dedicated team of Experts
- Study available DevOps Maturity Models, but dare to build your own if needed
- Testing is a needed skill set in DevOps
- Testing in DevOps is NOT ONLY Automation, but relies on it a lot
- Continuous Exploration and Learning is key

A person in a colorful wetsuit is surfing on a wave. The word "NOKIA" is overlaid in large, white, semi-transparent letters across the middle of the image. The surfer is positioned on the letter 'I'.

NOKIA

Спасибо!