




# 中国软件测试认证委员会

Chinese Software Testing Qualifications Board

# Innovate Your Localization Testing

- LIU, Hai-Ying (Sandy)
- HPE Software G11N Team
- August, 2016

A young girl with dark hair in pigtails, wearing a pink t-shirt and blue jeans, stands in a classroom facing a large green chalkboard. She is holding a piece of chalk and has just written the equation  $22 + 2 =$  on the board. The classroom has light-colored wooden walls, a large window to the left showing trees outside, and a wooden floor. Above the chalkboard, there is a small map of the world and a number line from 29 to 52.
$$22 + 2 =$$

# Agenda

01

- **Challenges We Face**

02

- **Our Innovate Practice**

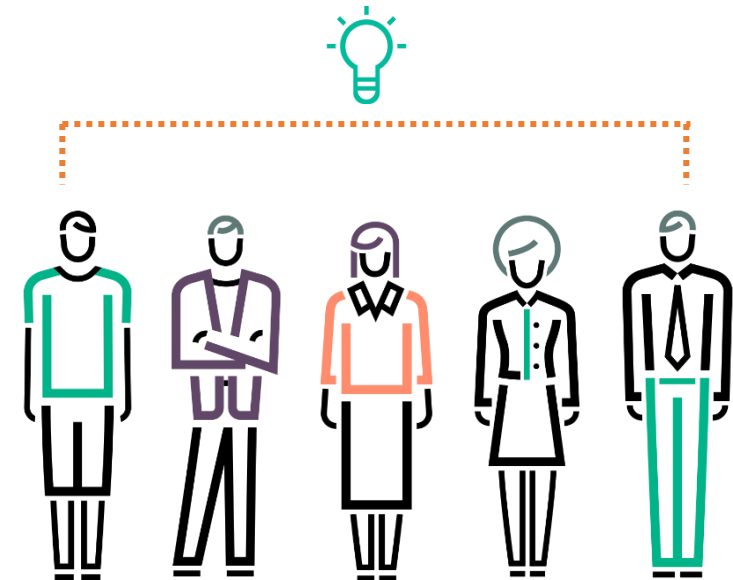
03

- **Innovation Practice**

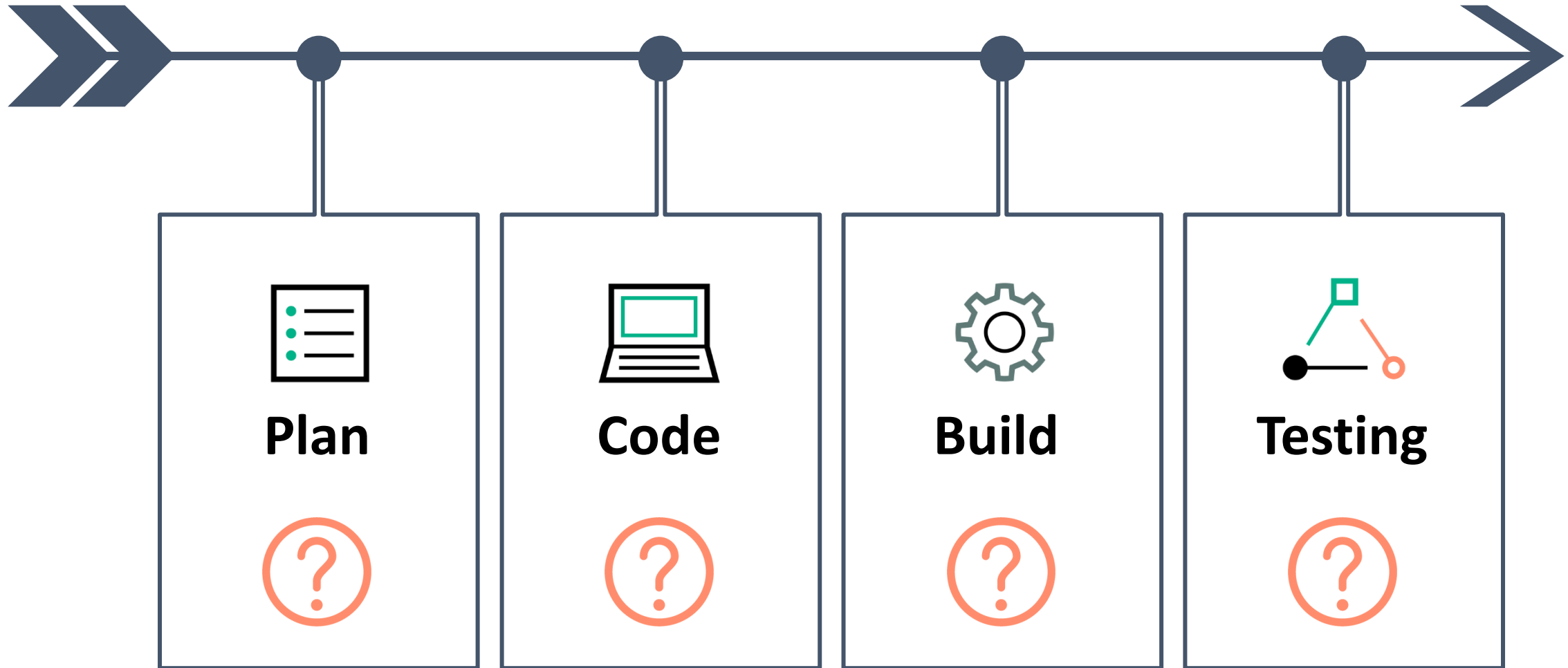
# Challenges In Localization Testing

Challenges	Priority
<ul style="list-style-type: none"><li>• Huge scope<ul style="list-style-type: none"><li>• Multiple language support</li><li>• Multiple browser support</li><li>• Complex integration</li><li>• 3<sup>rd</sup> party product</li></ul></li></ul>	HIGH
<ul style="list-style-type: none"><li>• High time pressure</li></ul>	HIGH
<ul style="list-style-type: none"><li>• Agile mode</li><li>• Sim-Ship</li></ul>	
<ul style="list-style-type: none"><li>• Limited resource</li></ul>	HIGH
<ul style="list-style-type: none"><li>• Limited human resource</li><li>• Limited budget</li></ul>	
<ul style="list-style-type: none"><li>• Quality request</li></ul>	HIGH!!!
<ul style="list-style-type: none"><li>• Higher than higher</li></ul>	

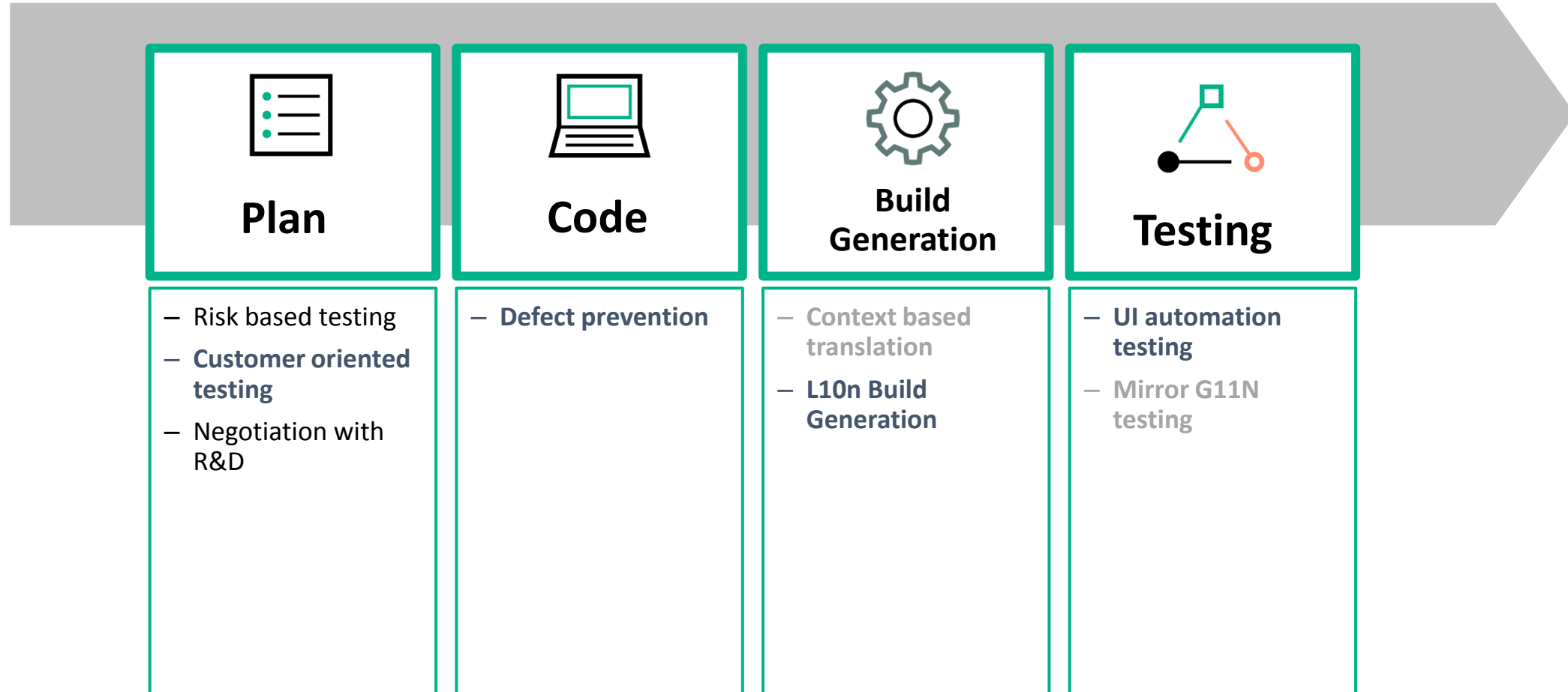
## IMPOSSIBLE?!



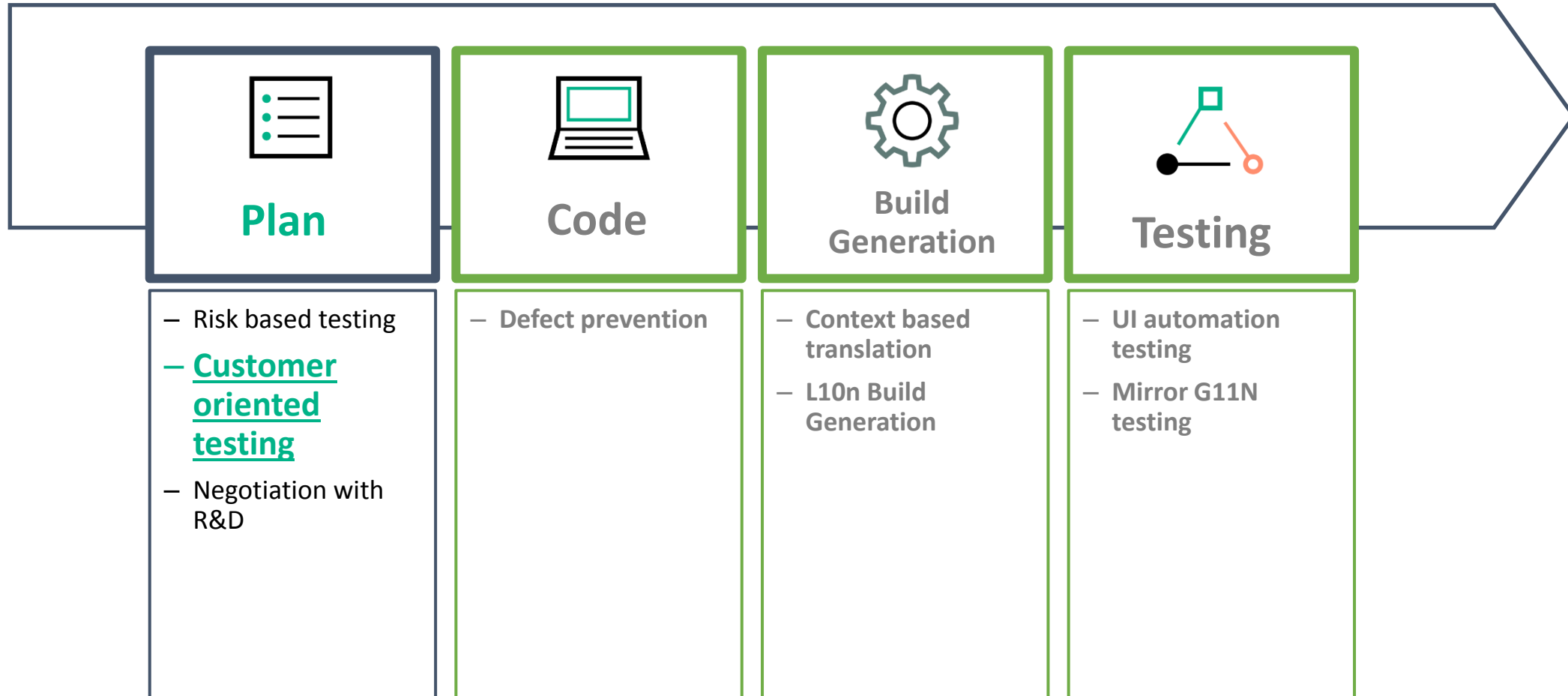
# Change is necessary!



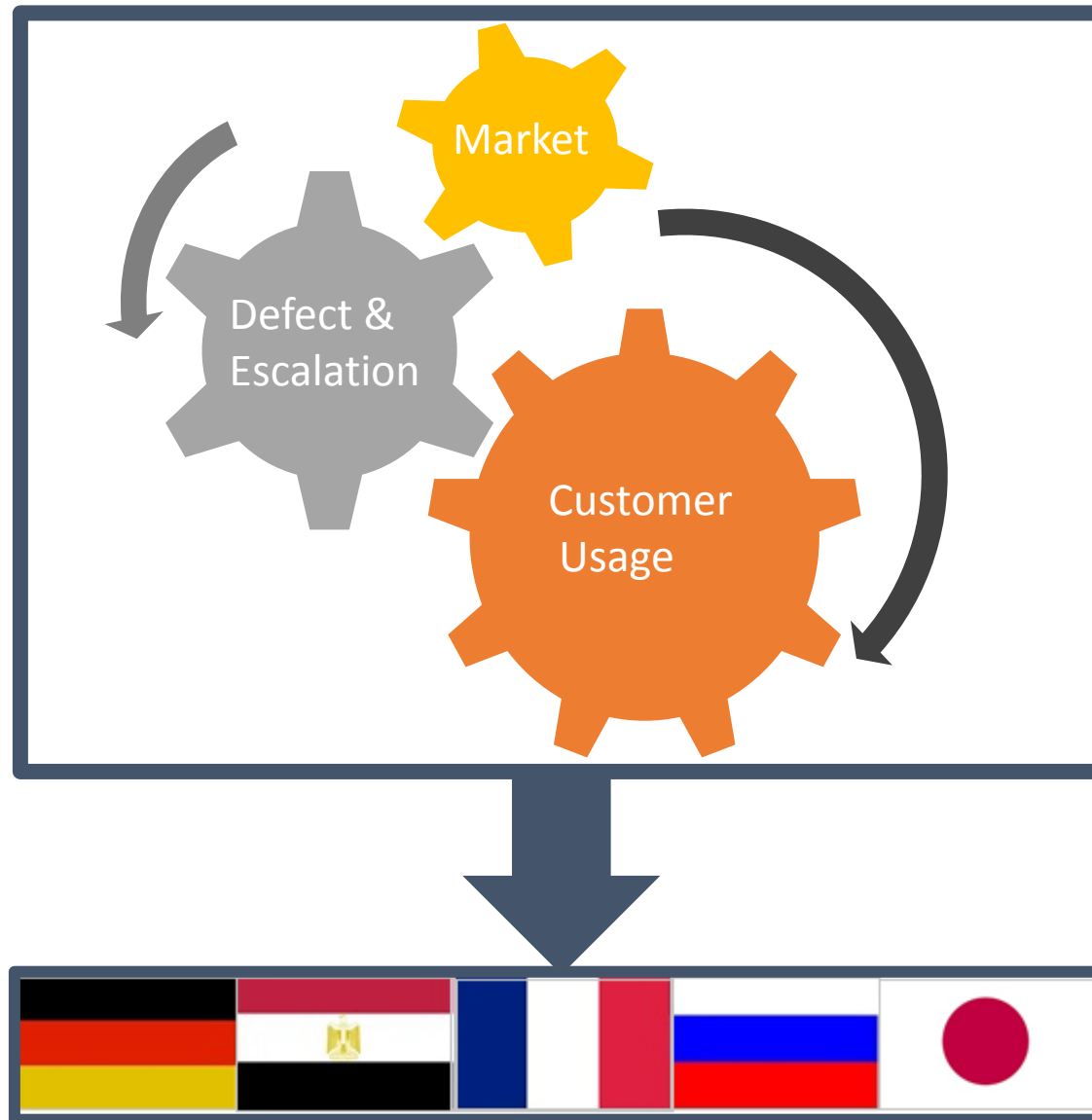
# Our Innovate Practice



# Our Innovate Practice



# Customer oriented testing – Efficient test matrix



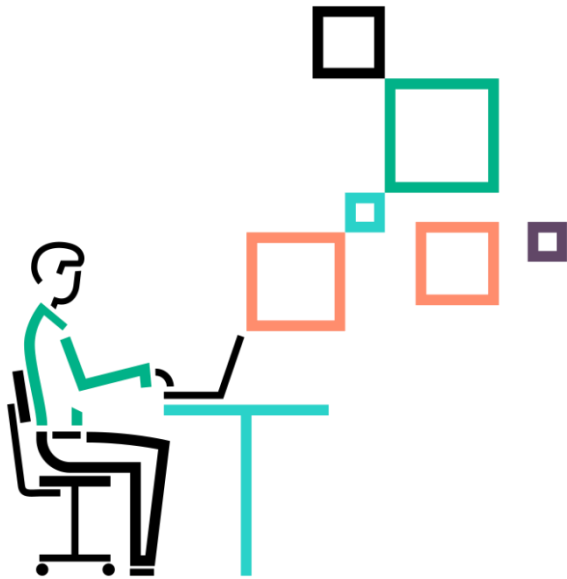
Open issue:

How to measure the efficiency?

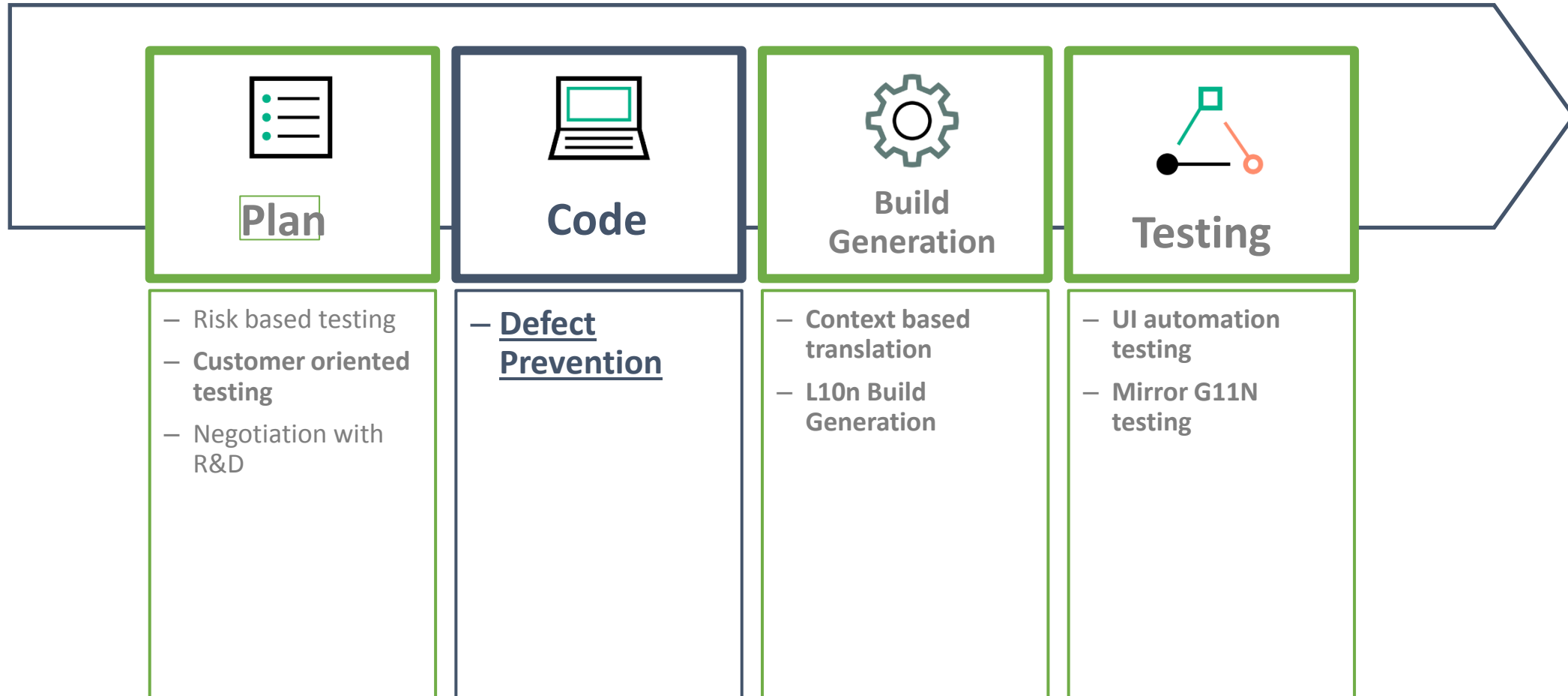


# Open issue

How to measure the efficiency accurately?

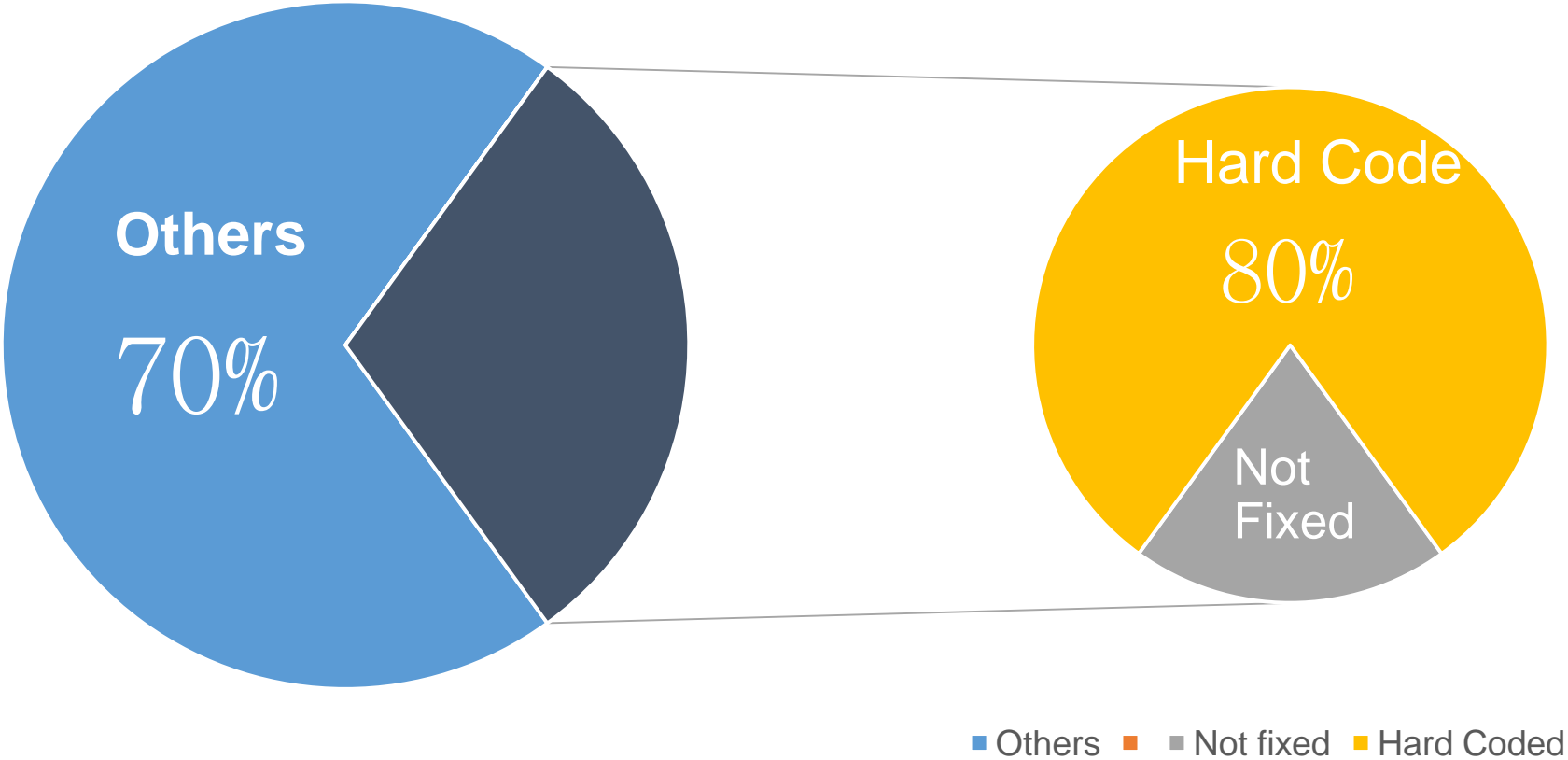


# Our Innovate Practice

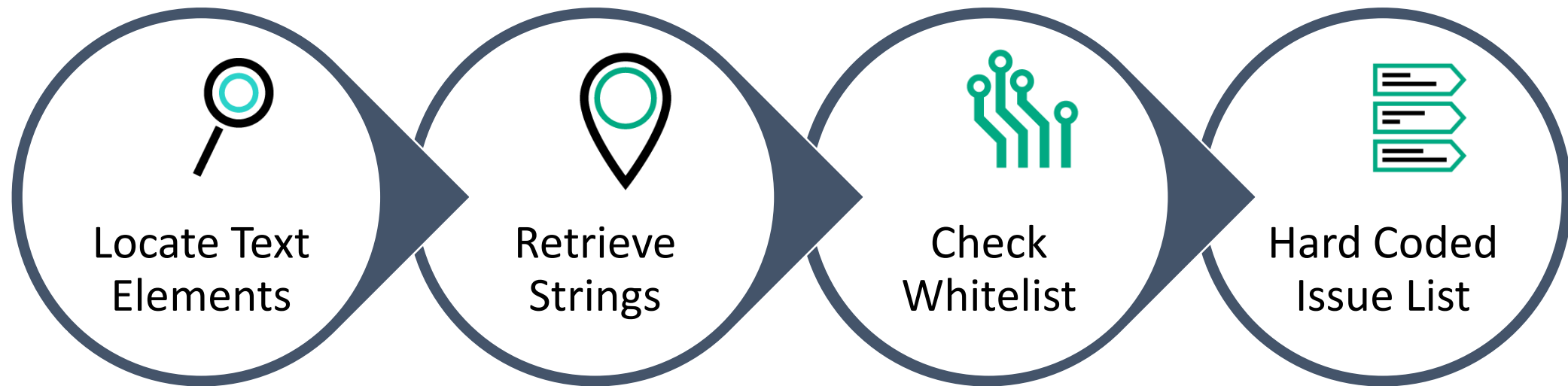


# Defect Prevention - Why Hard Code?

## HARD CODE DEFECTS

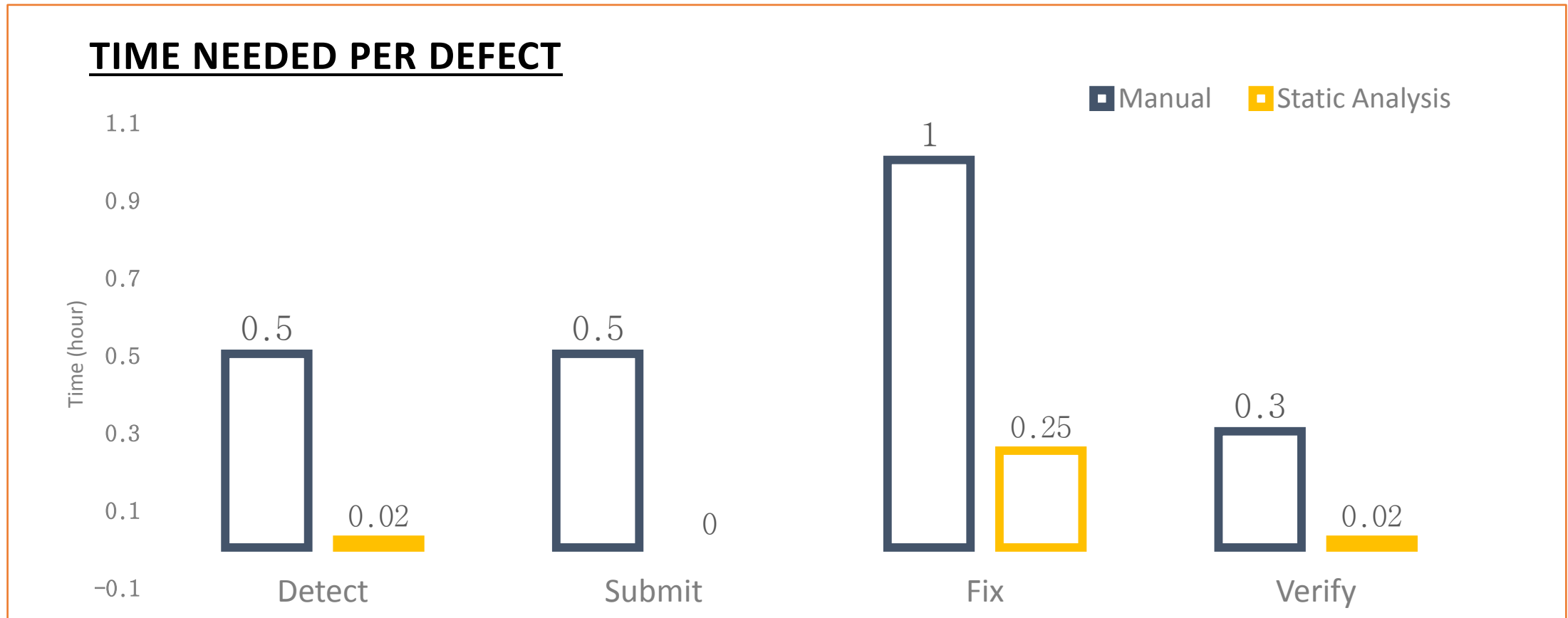


# Static Code Scan For Hard Code – DEVOPS Solution

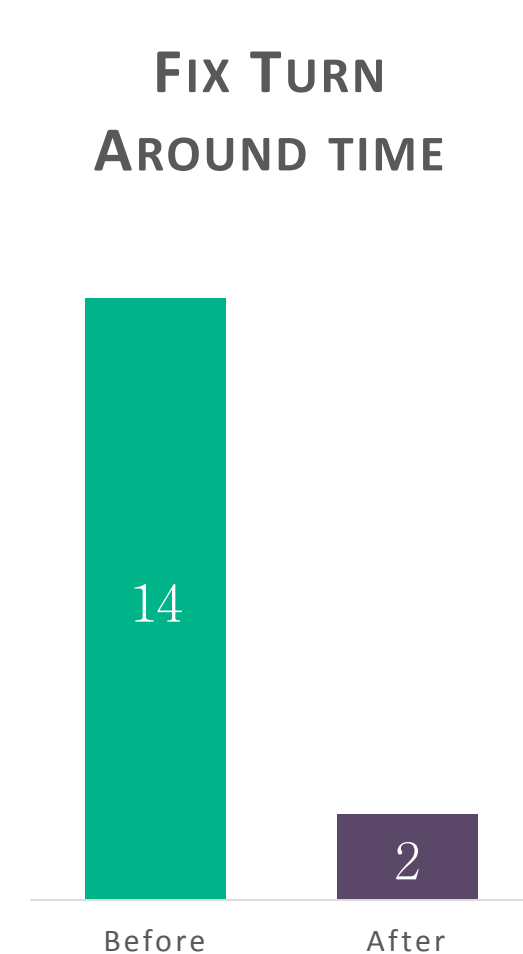
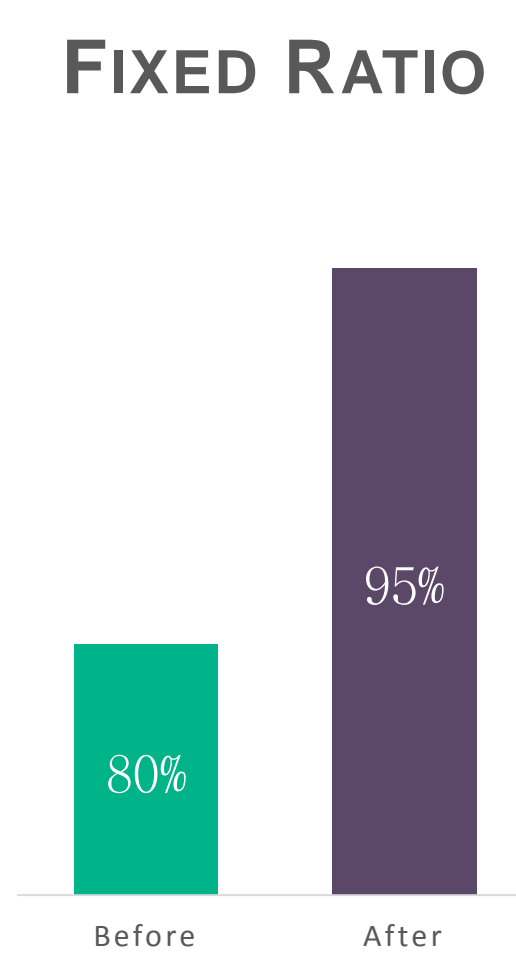
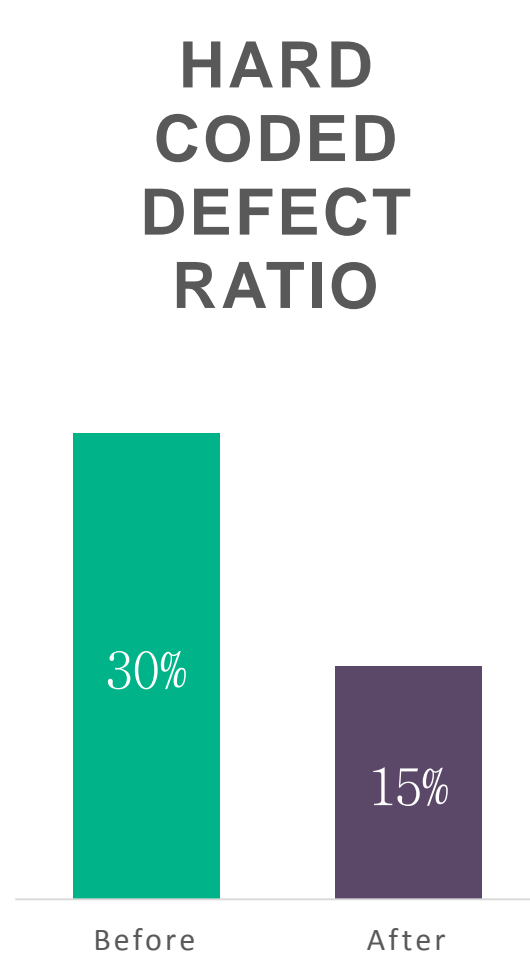


# Prevent Defect – Static Code Scan For Hard Code

- 2.3 hour per defect; 1.6 EM can be saved per 100 bugs
- Turn around time: several weeks to less 2 day



# Prevent Defect – Hard Coded Defect Before VS After

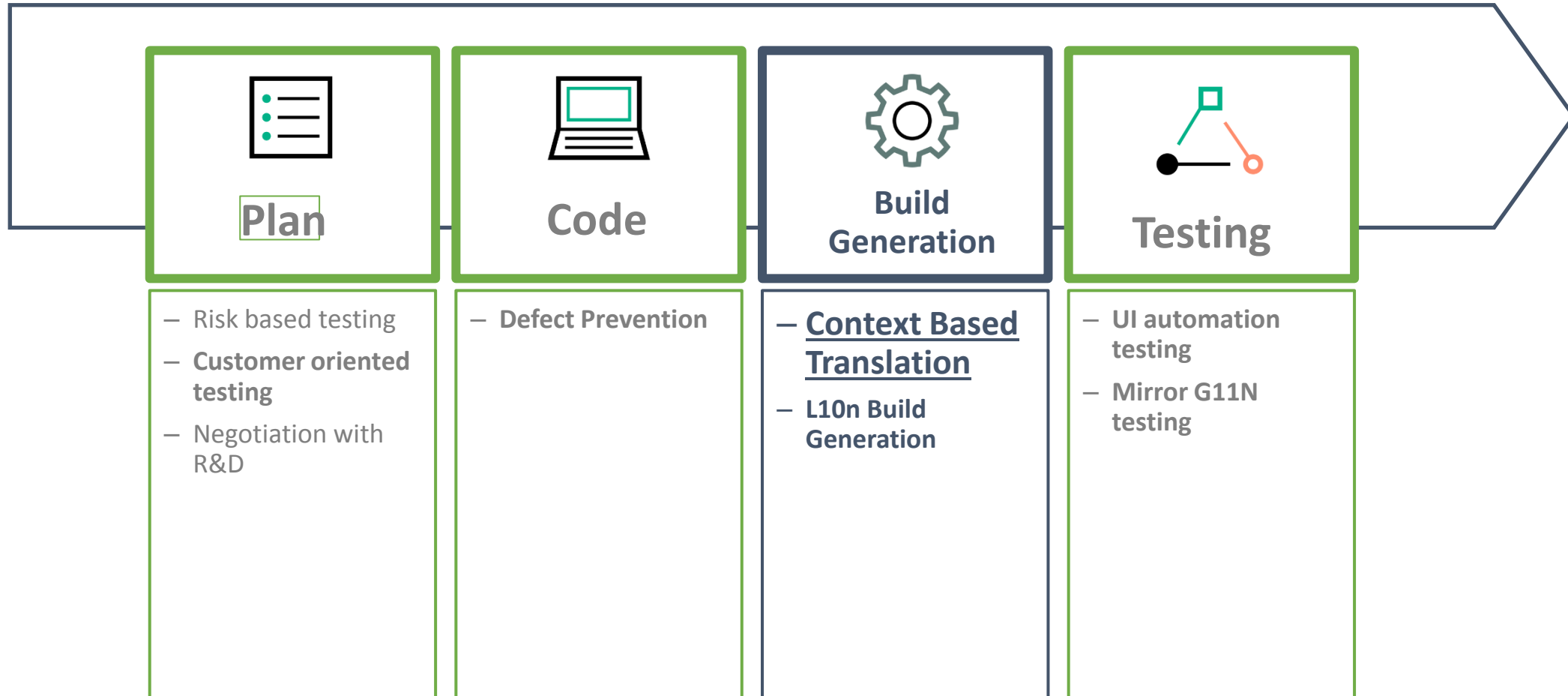


# Open issue

## How To Prevent Other Kinds Of G11N Defects?



# Our Innovate Practice

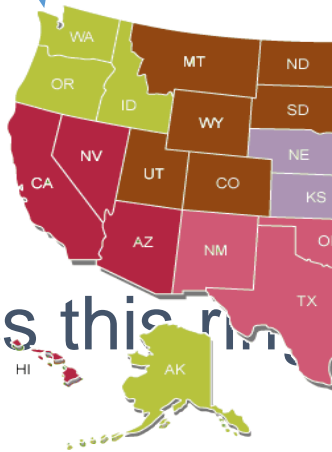




# What is Rigi?



Does this run



HP Service Health Reporter

System Management Virtualization

Report Period: 8/24/11

Logical System Entitlement Configuration

This report displays the Logical Systems running on the selected Node and their respective entitlement configuration.

Physical Node

Hosted On	Node Model	Virtualization Type
Node OS	Node CPU Speed (MHz)	No. of CPUs

Available Logical Systems

Logical System	OS Type	State	Number of Disk	Number of LAN	Minimum CPU Entitlement (MHz)	Maximum CPU Entitlement (MHz)	CPU Shares	Minimum Memory Entitlement (MB)	Maximum Memory Entitlement (MB)
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HP Service Health Reporter

システム管理の仮想化

レポート期間: 11/08/24

論理システムエンタイトルメント構成

このレポートは選択したノードおよび各エンタイトルメント設定で実行している論理システムを表示します。

物理ノード

ホスト先	ノードモデル	仮想化のタイプ
ノードOS	ノードCPU速度 (MHz)	システム数

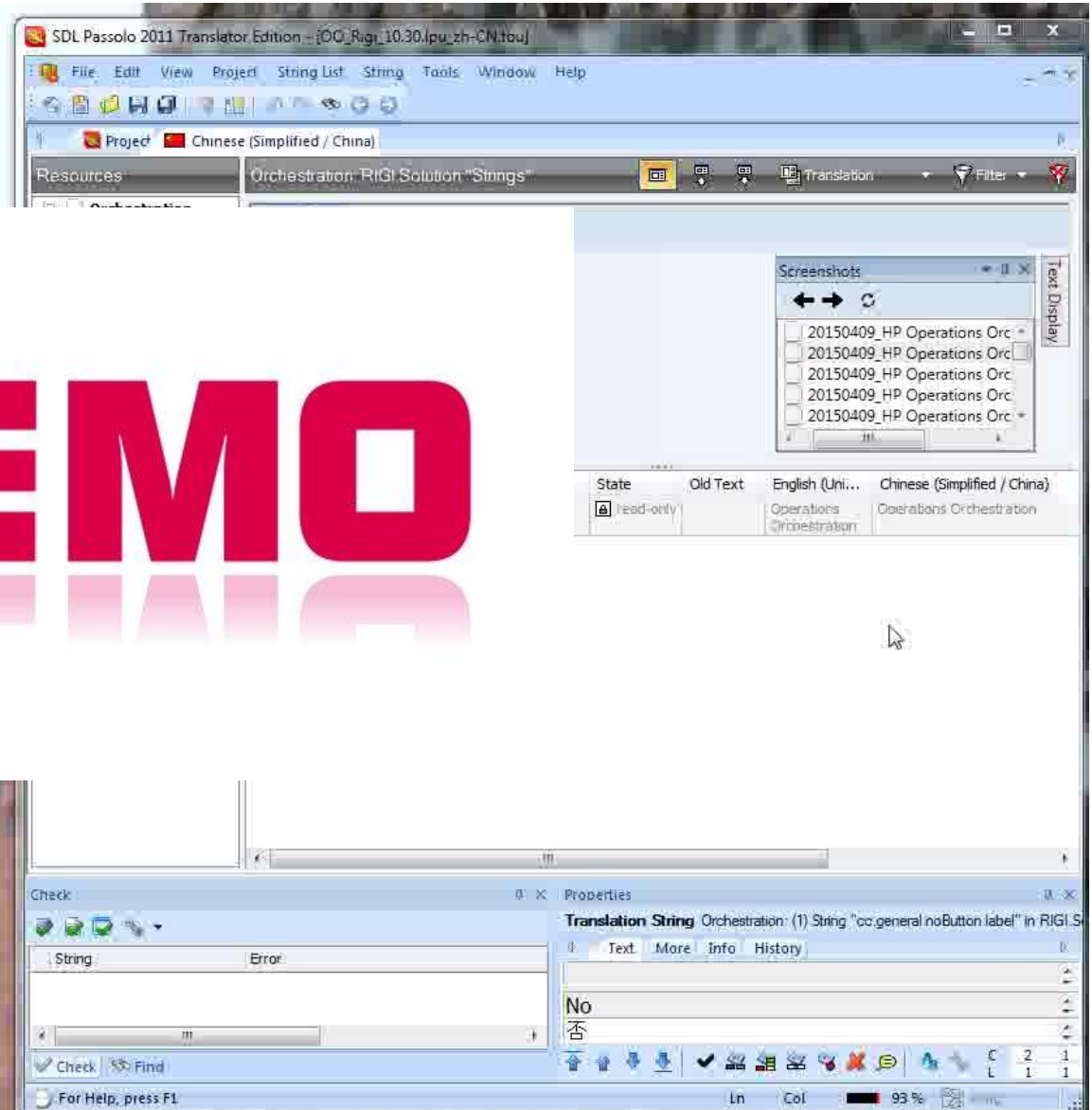
使用可能な論理システム

論理システム	OSのタイプ	都道府県	LAN数	最小CPUエンタイトルメント (MHz)	最大CPUエンタイトルメント (MHz)	CPU占有率	最小メモリエンタイトルメント (MB)	最大メモリエンタイトルメント (MB)

# What is Rigi?

Rigi

**DEMO**



# Rigi Highlights & Limitations

- **Full integration** with Passolo
- Can work with **online mode** on top of live application as well as offline screenshot mode.
- **WYSIWYG**: Allows you to see how the application looks like after translation

## Highlights

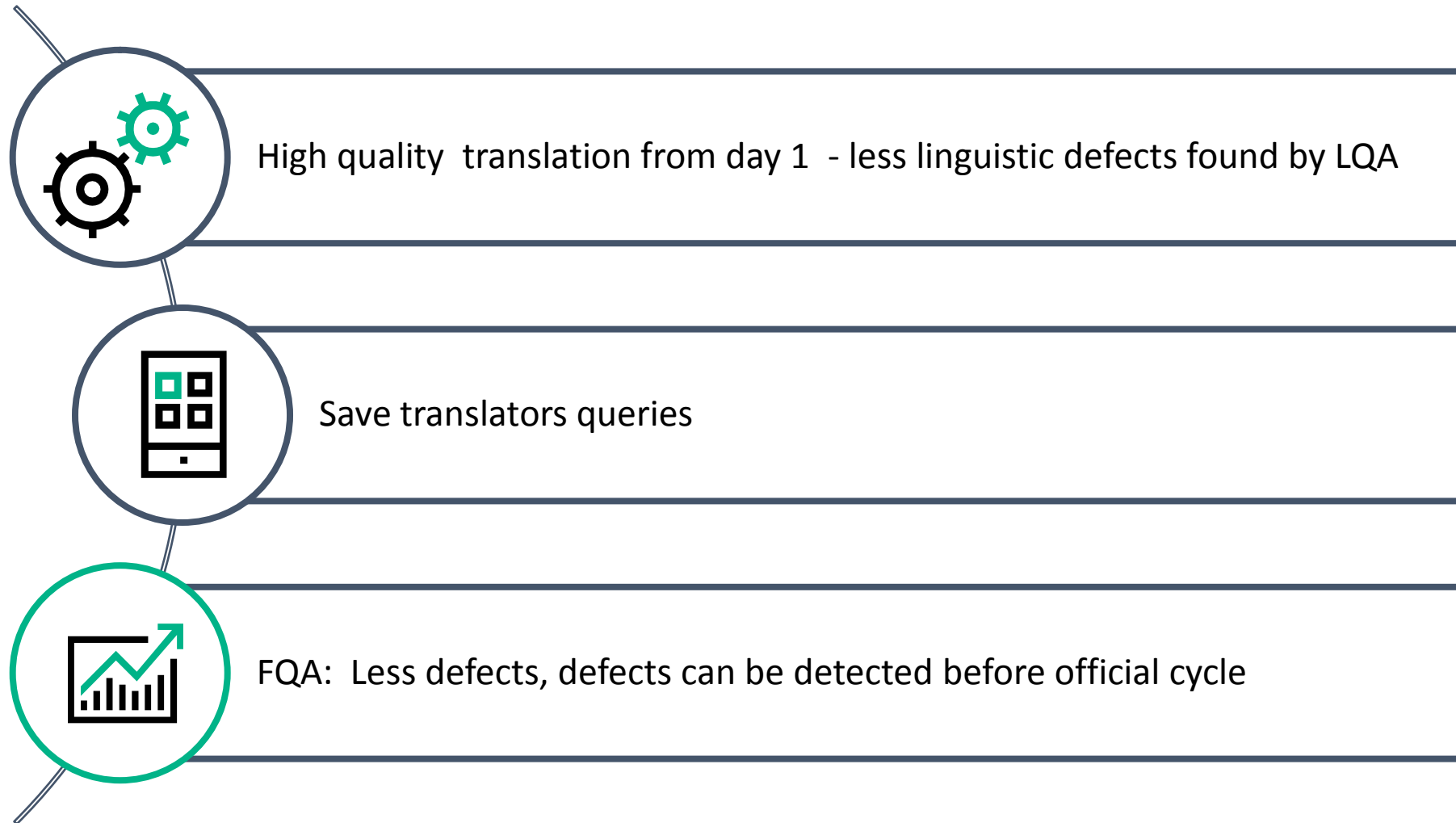


- Support web application only
- Support json and Java properties file (hopefully to be extend later on)
- Support visual UI and not error messages, alerts and etc
- Applet and Adobe Flex are not supported

## Limitations



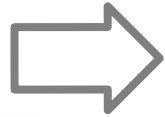
# Rigi Key Added Value



# Process for Rigi Adoption

## LPM/R&D

- Create Rigi-specific LPU
- Create dummy translations for Rigi to work
- R&D include dummy translations in live product environment
- Export Rigi-bundles



## LQA

- Check the delta of User Stories
- Identify User Stories related to the UI
- Navigate through the application to the new UI
- Take snapshot with Websnap



## Vendor

- Within Rigi bundle, either refer to online live application or screenshots embedded to get context info of particular strings.
- Check the appearance of the translation on application for possible layout issues.

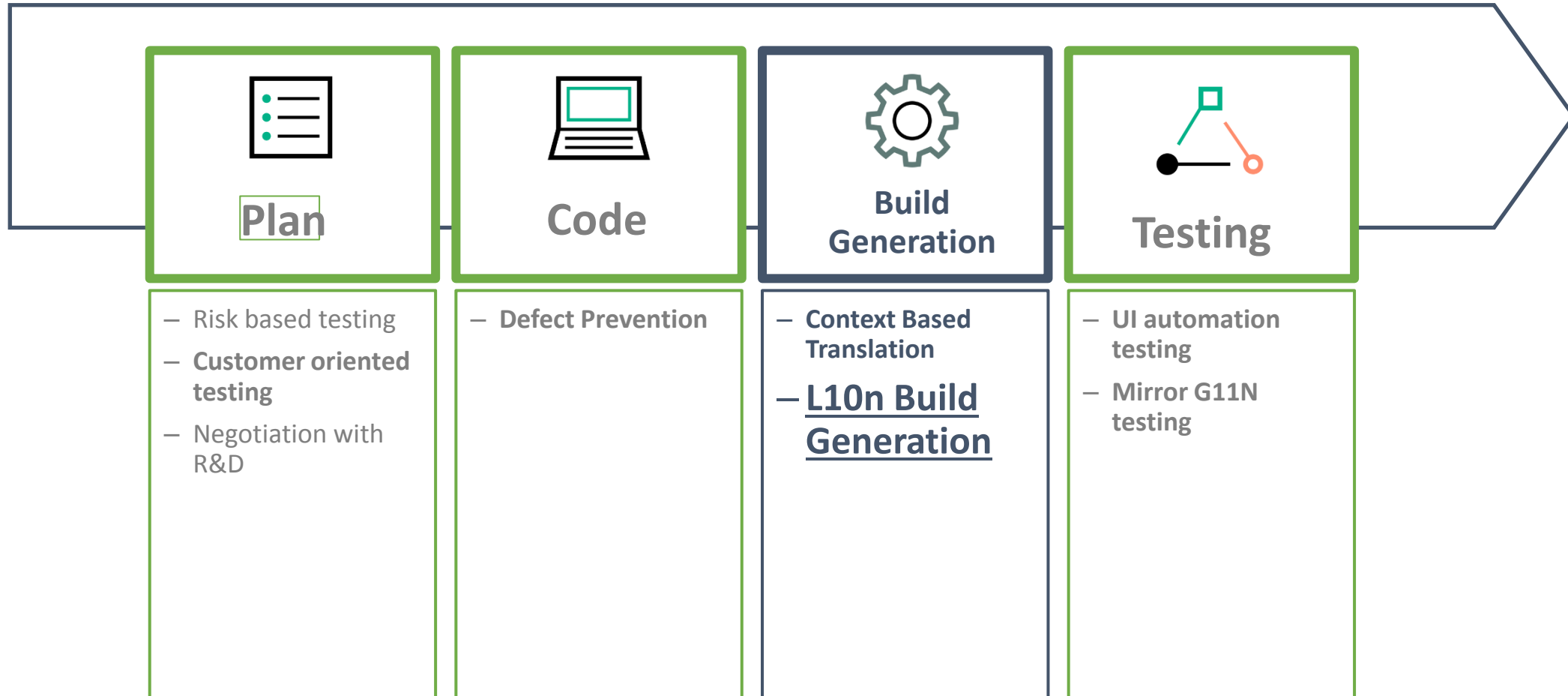
# Open issue



**How to increase support?**

**What about machine translation?**

# Our Innovate Practice



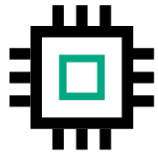
# Generate L10n Build Automatically

## – A Case Study





# Generate L10n Build Automatically – Benefit



**Good and quick  
build for QA**

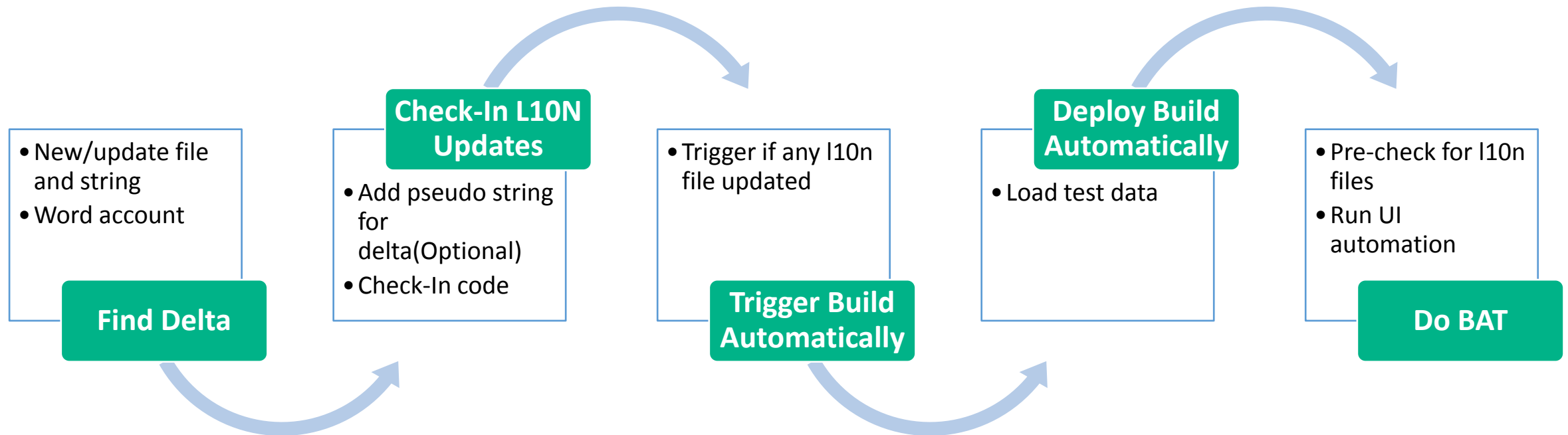
- **Avoid UI remaining in English** because of file missing
- **Avoid bad build** because of bad l10n file
- **Easy communication**
- **Early l10n quality assurance**; avoid bug fix delay to next version



**Apply Agile for  
L10n**

- **Get delta and word count** for translation on timely basis (avoid last minute large translation drop)
- **Fast translation file process** ( pre and post process) (ideally 1 iteration 1 drop)

# Generate L10n Build Automatically – How To?

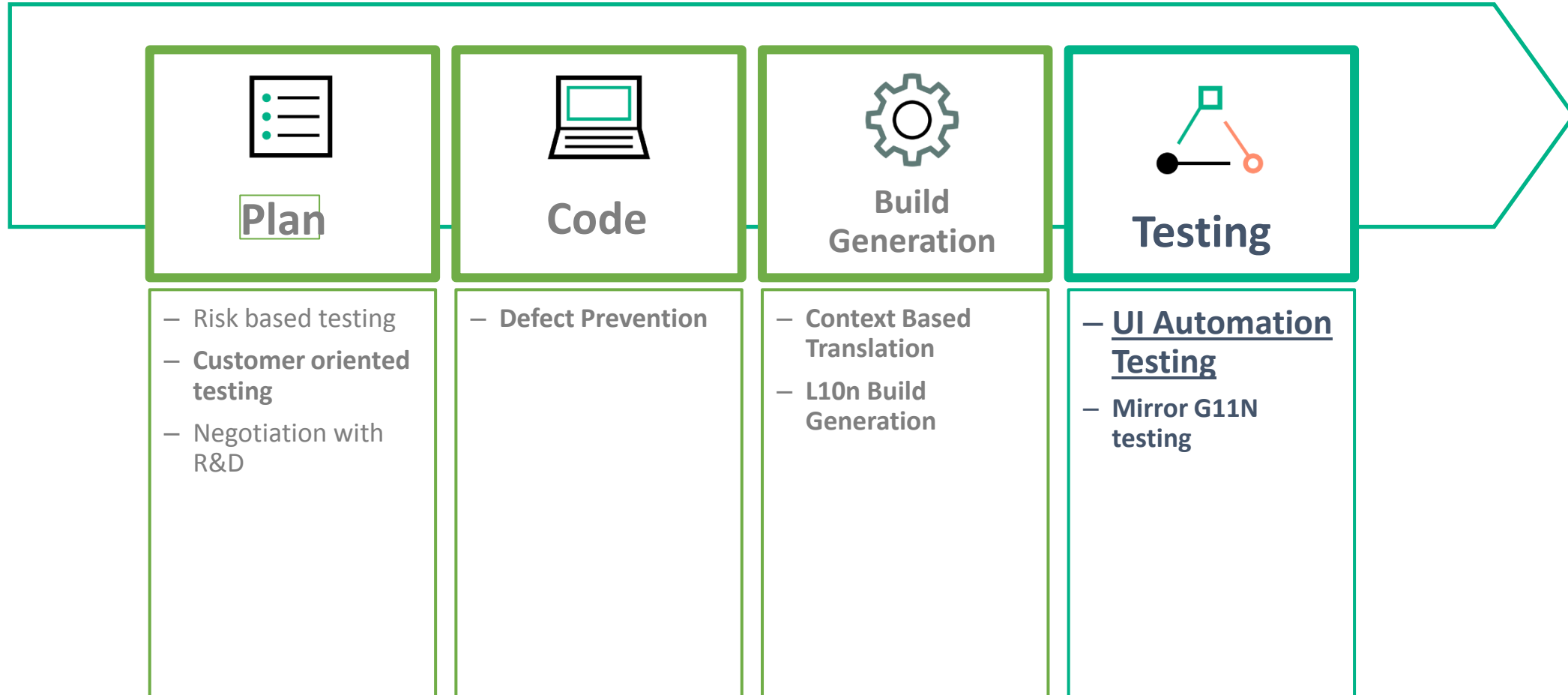


# Open issue

## How to get support from Dev team?



# Our Innovate Practice



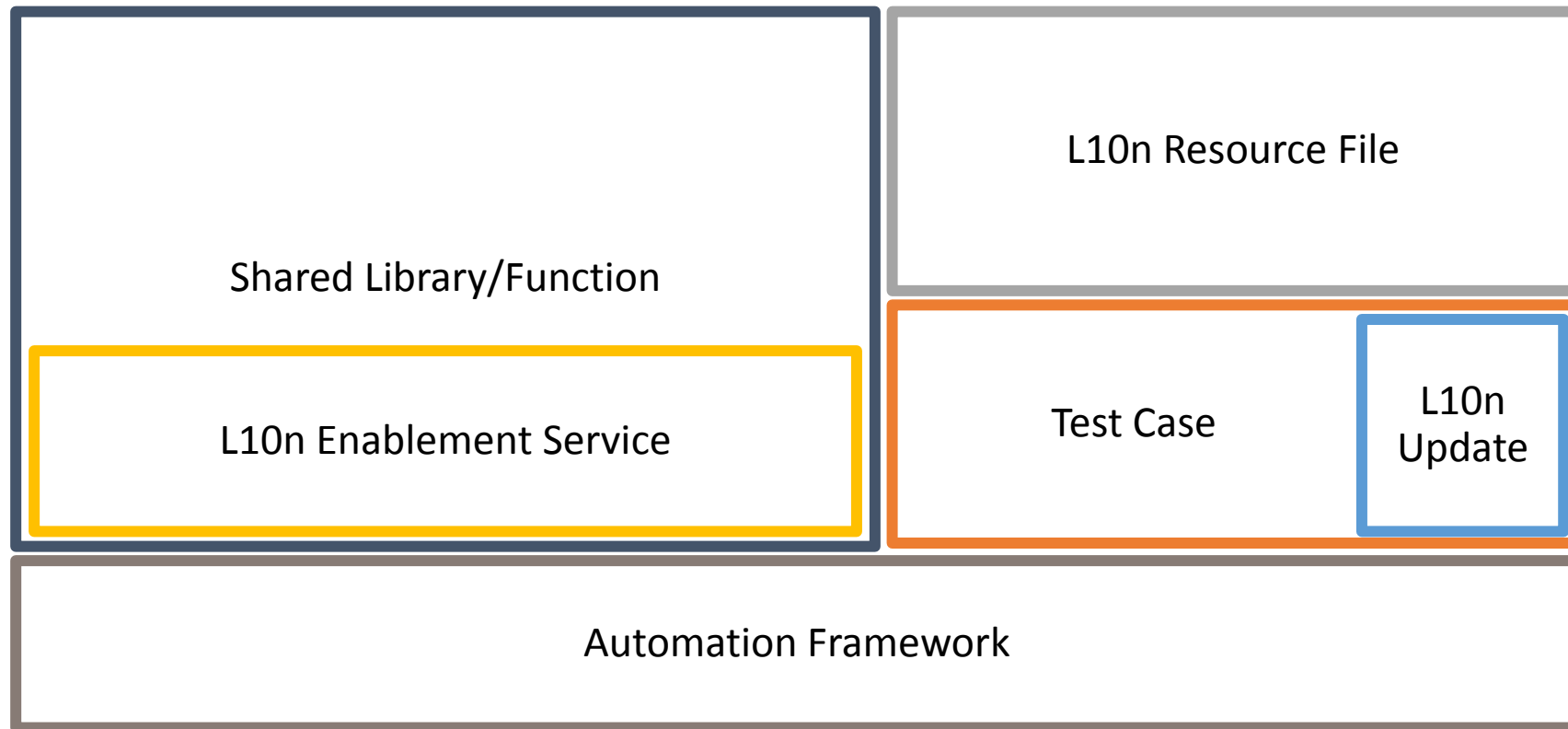
# Test UI Automatically – Challenges When Try To Leverage

Hard Coded  
Strings

Input & Output  
String in English

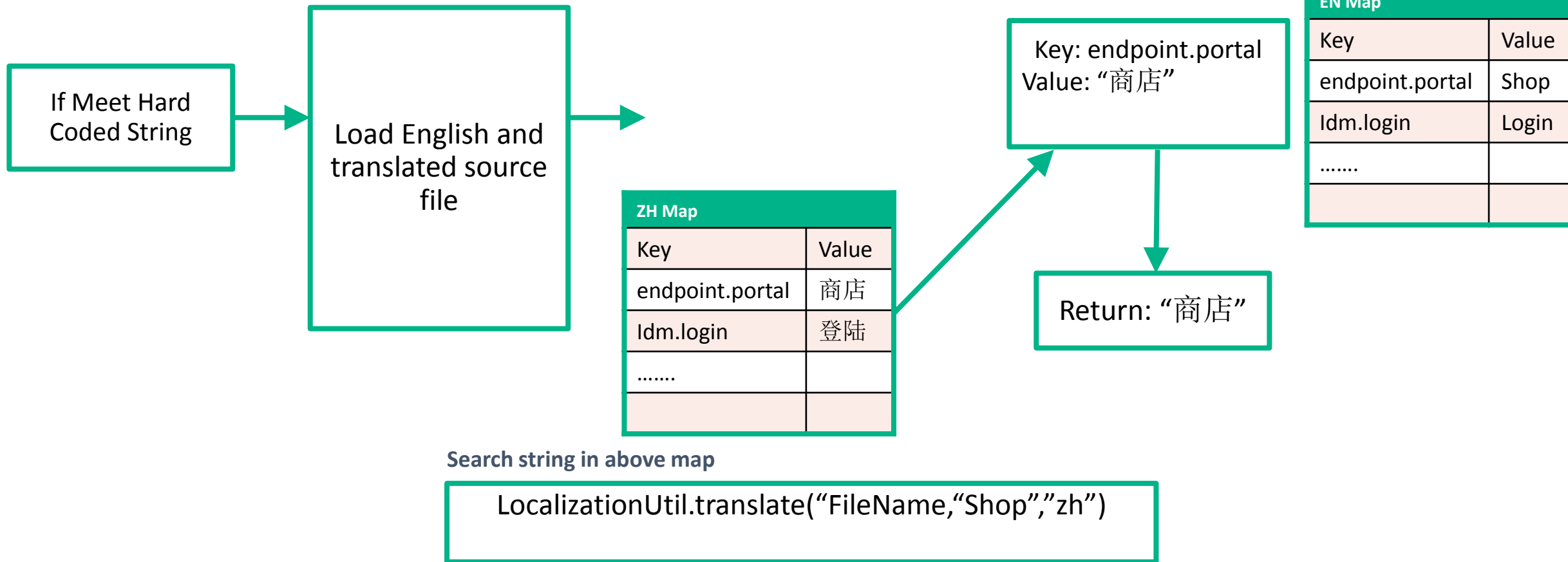
Not Able To Do  
L10N Checkpoint  
Like Layout

# Test UI Automatically –How To Do L10N Enablement Effectively



# Test UI Automatically

## – L10n Enablement For Hard Code



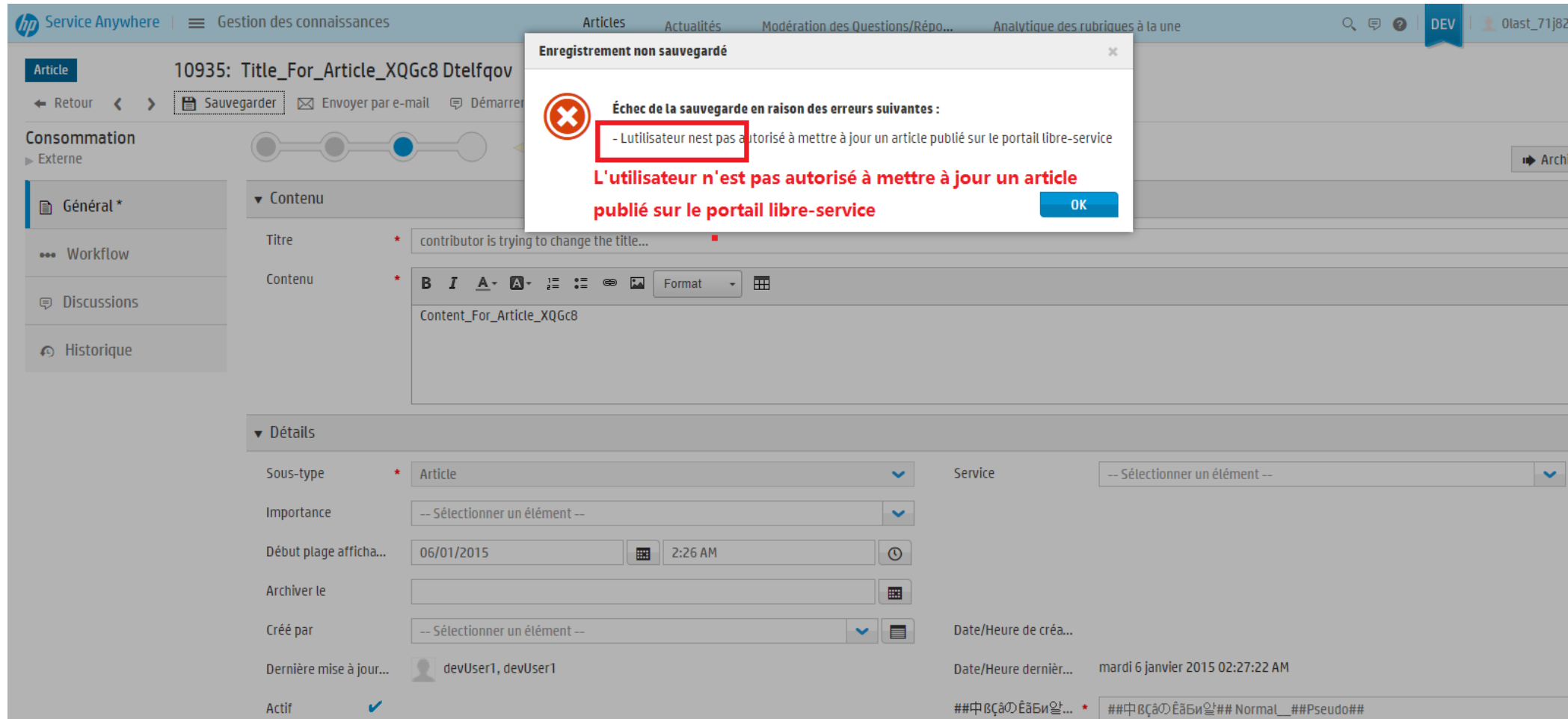
# Test UI Automatically

## – What It Can Check and Can't

G11N checkpoint	Can be checked out or not
Function	Y
UI Layout	N
Hard code	Depends
Garbage	Depends
Date time Number format	Depends
Sort/Search	Not yet; have possibility
Inconsistent translation (version by version or 1 drop vs another)	Depends



# Test UI Automatically – Defect Example



# Open issue

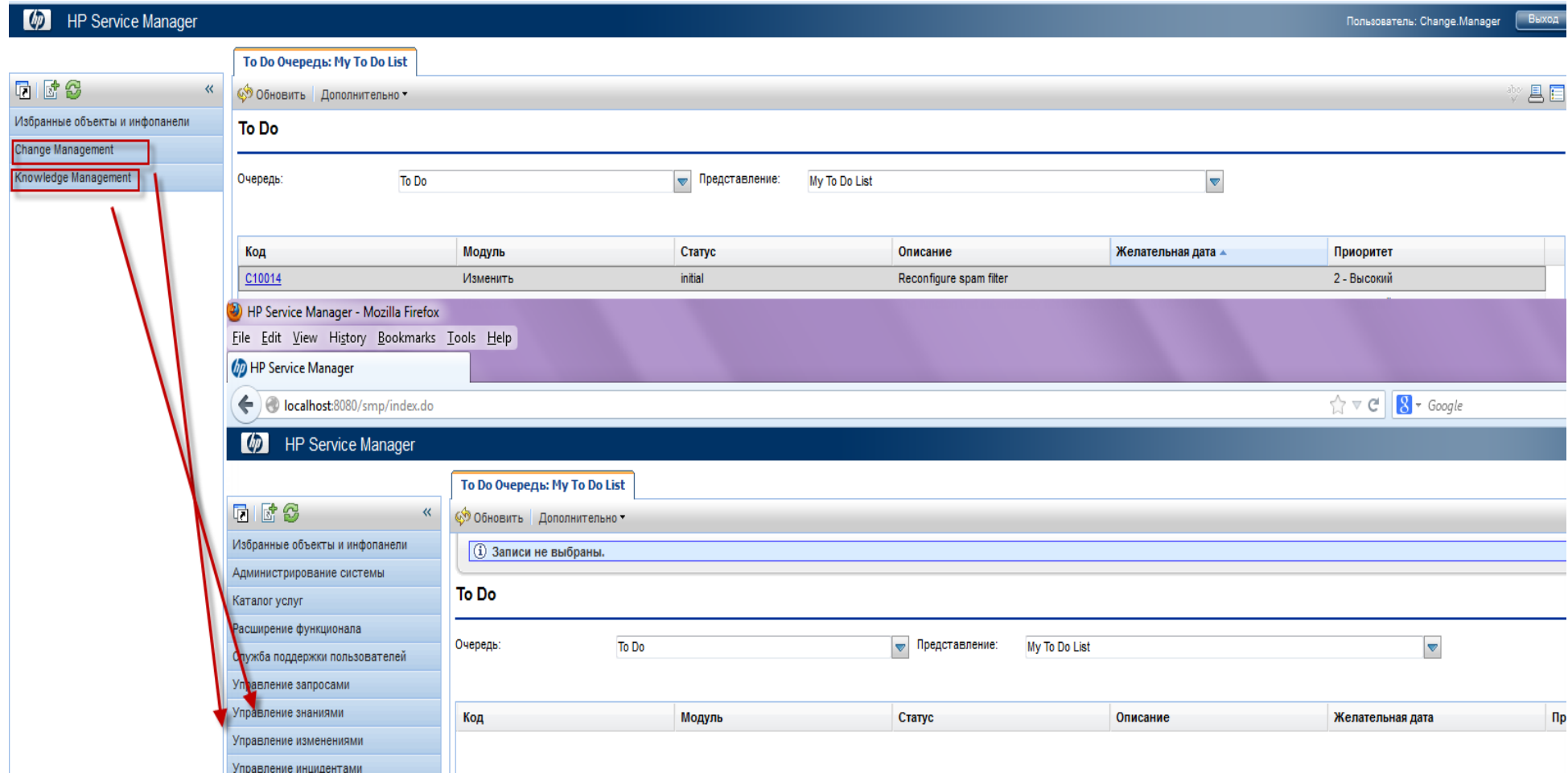
Based on R&D solution? Or G11N Own Solution?

Big Maintenance Task?

ROI Estimation?



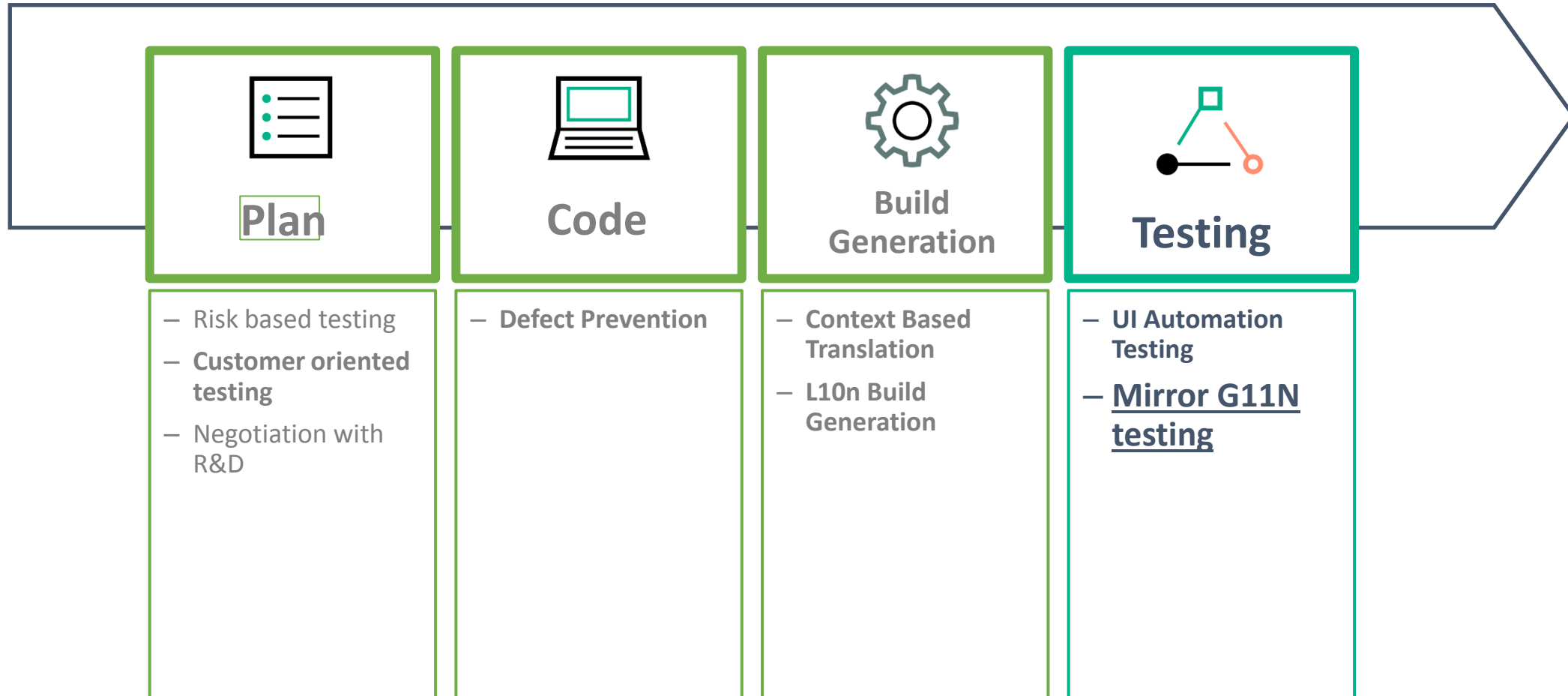
# Test UI Automatically – Defect Example



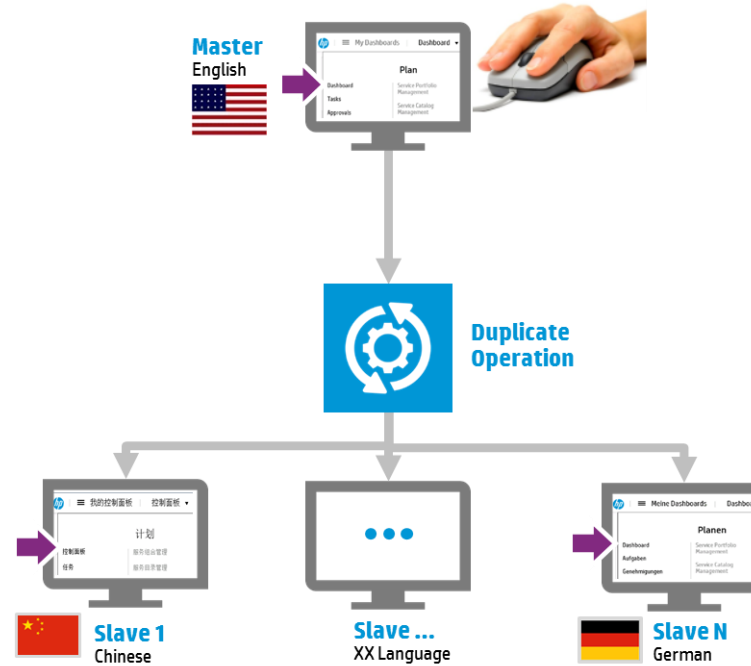
The screenshot displays the HP Service Manager web application. The top navigation bar includes the HP logo and the text 'HP Service Manager'. On the right, it shows the user 'Пользователь: Change Manager' and a 'Выход' (Logout) button. The left sidebar contains a menu with 'Избранные объекты и инфопанели' (Selected objects and info panels) at the top, followed by 'Change Management' and 'Knowledge Management', both of which are highlighted with red boxes. Below these are several other menu items: 'Администрирование системы', 'Каталог услуг', 'Расширение функционала', 'Служба поддержки пользователей', 'Управление запросами', 'Управление знаниями', 'Управление изменениями', and 'Управление инцидентами'. The main content area is titled 'To Do Очереди: My To Do List'. It features a 'Обновить' (Refresh) button and a 'Дополнительно' (More) dropdown. Below this is a 'To Do' section with a table. The table has columns for 'Код' (Code), 'Модуль' (Module), 'Статус' (Status), 'Описание' (Description), 'Желательная дата' (Desired date), and 'Приоритет' (Priority). A single row is visible with the code 'C10014', module 'Изменить' (Change), status 'initial', description 'Reconfigure spam filter', and priority '2 - Высокий' (2 - High). Below the table, there is a browser window showing the HP Service Manager application running in Mozilla Firefox. The browser's address bar shows 'localhost:8080/smp/index.do'. The browser window also displays the HP Service Manager logo and the text 'HP Service Manager'.

Код	Модуль	Статус	Описание	Желательная дата	Приоритет
C10014	Изменить	initial	Reconfigure spam filter		2 - Высокий

# Our Innovate Practice



# GMT Solution – What Is It?



Test several languages at 1 operation **in parallel**

# GMT Solution – The Problem To Be Solved



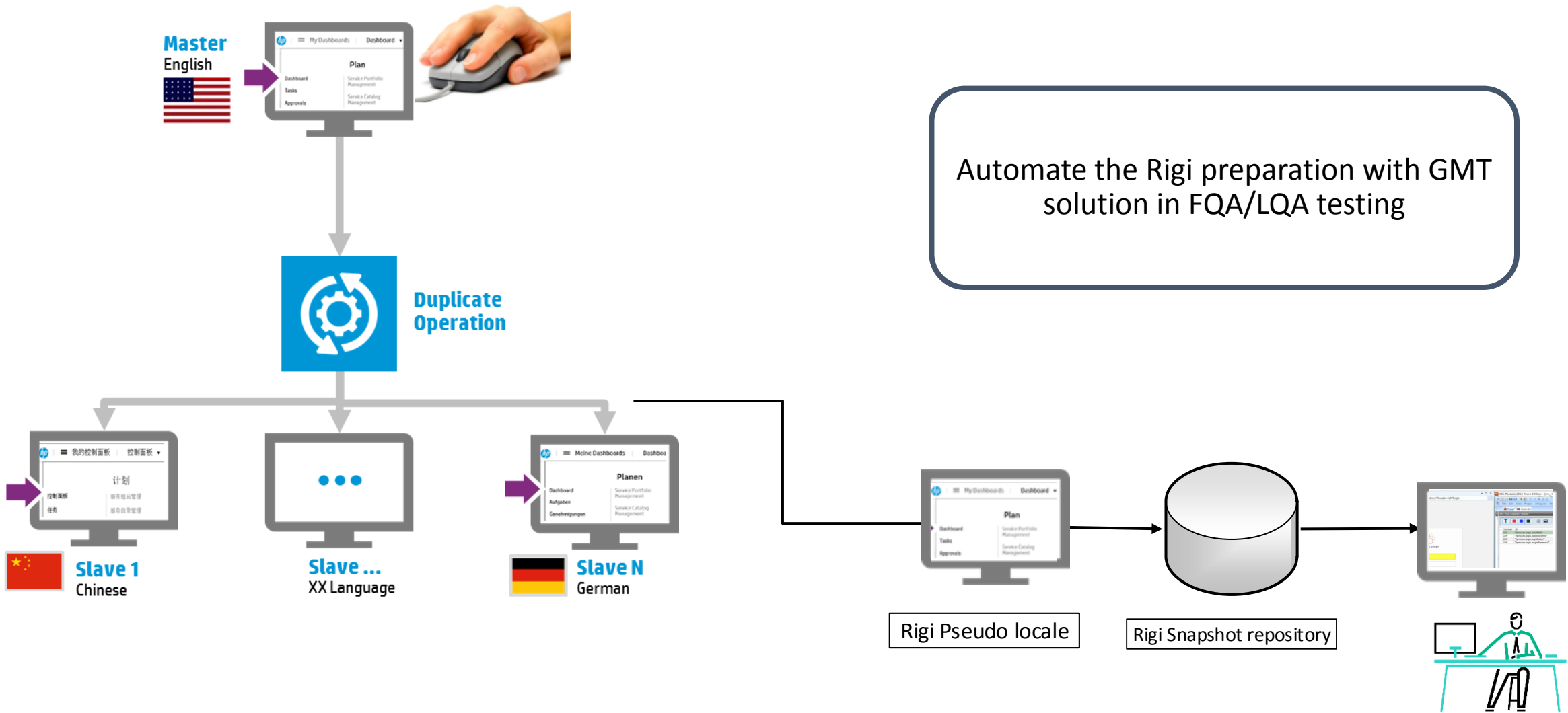
**Globalization QA Engineer:**

“I have **18** localized versions to test within the iteration to release simultaneously with English ..”

Globalization Test Efficiency

Screenshot Taking Efficiency

# Rigi with Mirror Test



# Challenges In Localization Testing

Challenges	Priority
<ul style="list-style-type: none"><li>• Huge scope<ul style="list-style-type: none"><li>• Multiple language support</li><li>• Multiple browser support</li><li>• Complex integration</li><li>• 3<sup>rd</sup> party product</li></ul></li></ul>	HIGH
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<ul style="list-style-type: none"><li>• Limited resource</li></ul>	HIGH
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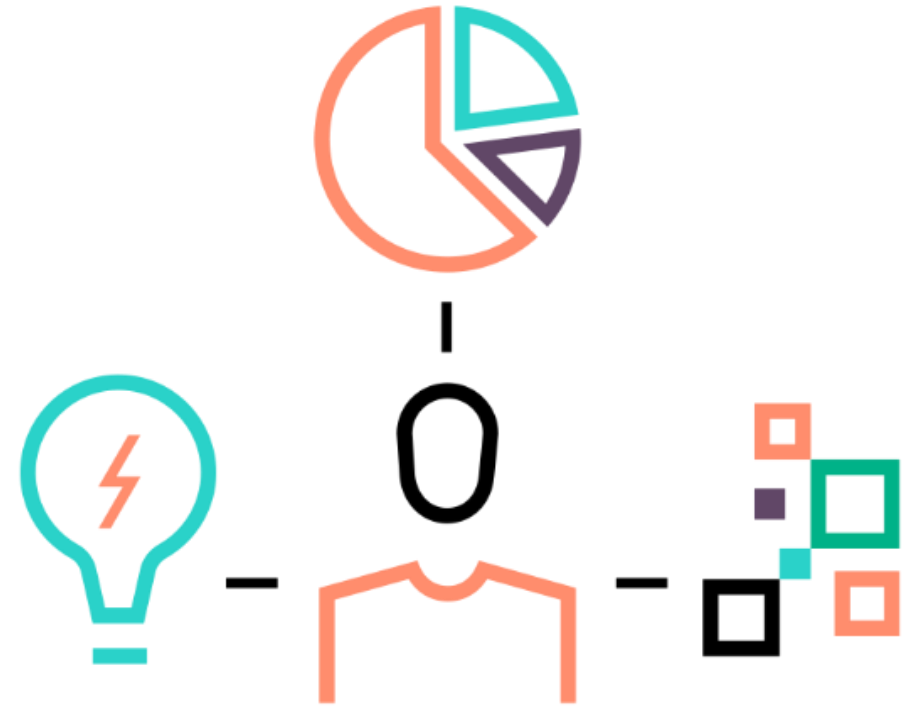
Great!





# Open issue

More innovation needed...



# Innovation Practice now!



**Thank you**  
**ISTQB®让测试更专业**