

LOW-CODE FOR **HIGHER POSSIBILITIES**

by  **noesis**

TEST AUTOMATION IN OUTSYSTEMS

EXECUTIVE SUMMARY

Organizations are facing new challenges in order to be ready for a changing world and deliver a successful digital transformation strategy. **Top business priorities focus on bringing business and customer innovation to the organization.** Successful digital transformation begins with applications that are built to deliver a truly digital-native experience.

The digital economy's and a fast-changing world requirement to deliver high-quality applications at the speed of the business is the driving force to more rapidly develop, deploy and update applications and services. With the current emphasis on speed to innovation and the delivery of superior customer experiences, low-code approaches and OutSystems technology is becoming even more relevant for all enterprises. **Agile and DevOps approaches demands focus on optimizing QA and testing.** Shorter release cycles and a central focus on delivering superior customer experience shifts the priority of QA towards embedding test as you build philosophy.

In this context, **accelerating automation becomes a clear focus**, as this provides the potential to combine quality with business value and speed.

And how about OutSystems development? Is it possible to automate testing on the platform? Are QA and testing able to meet the fast pace development and deliver featured by OutSystems technology?

From project initiation through automating the deployment pipeline and testing, change management, and continuous delivery, **the key to success is the ability to measure automation across the application lifecycle.**

Noesis, with 25 years providing IT services and solutions, and as a relevant OutSystems partner, with **+10 years of experience delivering low-code solutions**, soon began to focus on Quality Management (QM) as one of its key business units.

Recently, began to address QM as a built-in practice in all other services, including in OutSystems development projects. Supporting a DevOps approach, quality comes as an element that links all stages of the software development lifecycle, leading to an ongoing process of quality assurance and "quality culture".

Focusing on automation, Noesis has built its own test automation tool – NTX® – with a specific algorithm to identify OutSystems objects.

A game-changer in the industry that can boost automation and testing on the organizations and meet their fast pace development requirements.

TEST AUTOMATION **to reduce risk, cost and time-to-value**

Accelerating automation becomes a clear focus, as this provides the potential to **combine quality with business value and speed.**

Automation is no longer about just driving down costs and delivering ROI. Instead, it is vital to ensure customer experience, product reliability and speed.

The cloud is making the creation of test environments easier and more dynamic, while micro services are upending the entire notion of software architecture, including the QA component. Meanwhile, IoT is unleashing an entirely new wave of digital data and services in the world, all of which must be tested and reviewed on a continual basis.

Without a doubt, organizations must focus on QA process efficiency and the ability to manage change at scale. This requires driving efficiency and maximizing the QA impact on the business while identifying risk effectively.

Therefore, it is with no surprise that managing the size of test data sets, creating and maintaining test data sets, and complying with the data regulations for the test data are among the top challenges facing organizations today.

Driven by the business need to automate and optimize processes to deliver faster time-to-market, there is a growing appetite for smart automation or automation coupled

with analytics. The benefits include smart decision-making, fast validation, and automatic adaptation of test suites.

The scope of test automation has evolved from simply automating the test activities (plan, design and execution) to automating test environments and test data provisioning.

The emergence of tools that apply ML to testing and quality data, and tools that view source code as data that can then be leveraged by analytics are the perfect examples. These solutions can help embed policy and processes into developer execution, improving change management, quality, and security.

'At TIM Brasil, we started using the NTX® tool in 2018 to monitor journeys on major digital channels in the 24/7 production environment. This has enabled us to raise our quality standards by quickly and effectively managing defects.' - **Daniele Trechau, Digital Platforms Manager, TIM**

As organizations reimagine and optimize the way that software is developed, deployed, and tested, **the increased usage of AI-related technologies and machine learning** to help reduce continuous delivery timelines and positively affect speed-to-market can make the difference.

The QA function is well placed for considerable disruption from the application of machine learning and cognitive intelligence, based on its heritage of repositories of test cases, test suites, data formats, defects, changes, and so on.

Shift to “Automate everything mentality”

Focus on delivering business value and superior customer experience through unified and measurable automation that integrates and connects all activities across the delivery pipeline. Automation strategies go hand in hand with the journey to continuous delivery. Automation of manual steps is essential to overcome issues related to an increasing number of defects, latency

and rework. The focus is to start automation right at the beginning of the SDLC and ensure nearly all test cases are automated.

According to IDC, **by 2021 50% of organizations will prioritize automated testing with Machine Learning and Artificial Intelligence components.**

Test automation plays a central role in the ability of organizations to reduce risk, cost and time-to-value, while managing an ever-expanding ecosystem.

NTX® -TEST AUTOMATION MADE INTUITIVE

Noesis has been **developing test automation continuously over the last 10 years**, building alliances with technology partners who are leaders in the automation market.

Noesis has developed its own product - NTX® - NgineTesting eXperience. A test automation tool.

Automation tools have several applications in the context of Quality Management, such as:

- › Creating and comparing data;
- › Comparing actual results against projected results;
- › Creating scripts that run overnight;
- › Confirming the software is “up and running”.

NTX® is a test automation platform, which can be used by anyone in the organization, because is a NO-CODE solution, allowing non-technical people to automate tests: testers, developers, or business people.

In addition to its simplicity of use and the fact that it does not require any technical knowledge, **NTX® also allows:**

- › Specifying the automated testing before development.
- › Reusing the specifications introduced in the tool in future releases of the applications.

NTX® Advantages

NTX® is a solution that simplifies test automation in an intuitive, fast and versatile way. It allows optimizing the time-to-market of a solution while reducing costs and its overall development cycle.

NTX® is built to ensure integrability with test and defect management tools, working on all operating systems and running tests in different environments.

Automated tests are created directly on the solution and saved in test management tool, as well as the evidences from test runs.

This powerful tool can assure mobile, web, image recognition, and SAP automation, having a specific algorithm to capture Outsystems objects

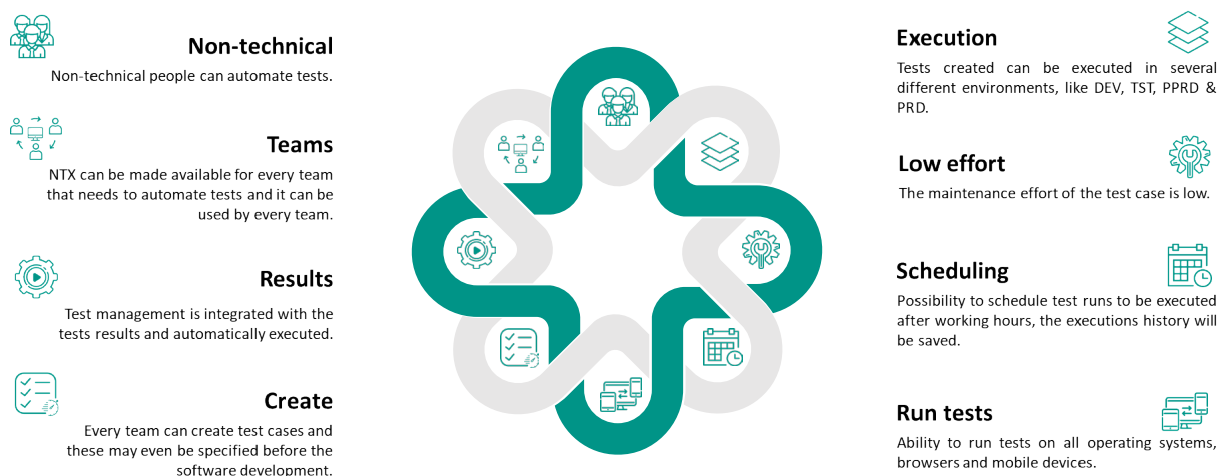


Figure 1 NTX® Advantages

NTX® Main Features:

- › **JIRA 7compatible**
- › **Automated tests** – It allows to create automated tests by getting automatically the objects from the application to be tested.
- › **Automatically saving** - The created specification is saved automatically in the test management Jira plugins Xray and Zephyr, as well as in Azure DevOps and Microfocus ALM.
- › **Executing tests**-to execute or schedule a test execution of the created automated tests.
- › **Visualize Results** -being able to visualize the test execution results in the test management tool.
- › **Test & Defect management** - Completely integrated with test & defect management tools.
- › **Test case duplication** - Option to duplicate the test case.
- › **Data transfer** - Possibility to transfer data between the multiple steps and scripts.
- › **Objects** - Automatically objects identification.
- › **Datapool** - Easy to create a datapool.
- › **Image** - Possibility to automate all technologies by image.
- › **Monitoring** - Possibility to execute NTX tests in order to measure applications availability and requests latency

Traditional test automation vs. NTX®

NTX® allows to orchestrate the execution of different types of tests (web, mobile, OutSystems, others), in one execution. In addition, with the introduction of Artificial Intelligence, the software will learn which fail more often and it will suggest to the user a possible correction.

Noesis strong commitment to automation solutions aims to support and simplify the entire quality management process, optimize the time-to-market of a solution, reduce development cycle costs, increase quality and consequently ensure greater end-user satisfaction.

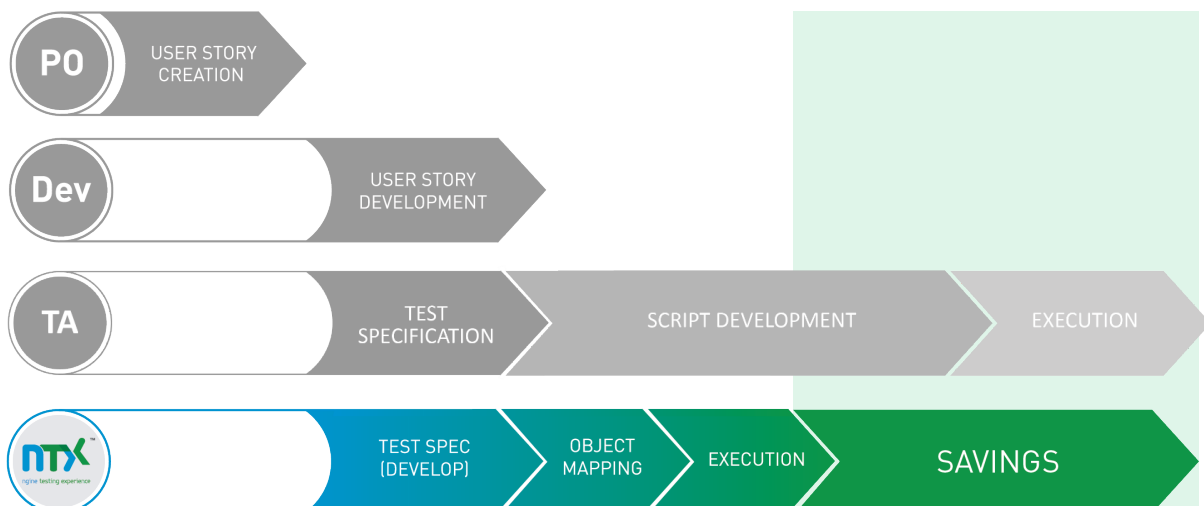


Figure 2 Traditional Approach vs. NTX®

NTX® FOR OUTSYSTEMS

And how about test automation in OutSystems?
Is it possible to automate tests with NTX® on
OutSystems platform?

Yes, it is!

Noesis has developed a specific algorithm to capture OutSystems objects with NTX®.

This is a game-changer in the Industry and makes NTX® a one-of-a-kind test automation tool that really differentiates itself from other solutions available in the market.

Around 2018, Noesis felt that customers had particular difficulty in running tests on OutSystems applications.

With a customer-centric approach, Noesis took the next step and developed an unprecedented integration with OutSystems platform: creating a specific algorithm for OutSystems applications that allows the identification of an application object, automatically, in the best possible way, without saving the random identifier. Thus, it is not necessarily a technical person to create the best way to capture the objects.

Other test automation products will obtain the identifier generated randomly by the OutSystems platform and thus, the next time the application is generated, that identifier will change, which will cause a greater effort in maintaining the test scripts, decreasing the agility and speed in the creation of automated tests. **NTX® is a No-Code solution, which means that whoever creates and maintains the automatic tests can be someone with application knowledge only,** not requiring any technical knowledge about automation and/or programming.

The **user only has to press a button for NTX® to return the object's identifier automatically.** This identification is transparent since it identifies whether the application was developed, or not, in OutSystems.

- **Ensure better SW Quality:** as more applications can be tested in less time;
- **Automated test reusability:** whenever a new version is released, the developed test battery is executed, allowing us to reuse the same scenarios in different environments;

- **Increased efficiency:** schedule executions during a certain period and obtain tests results;

- **Standards and nomenclatures definition** to define and organize internal pages and objects feeding the library. With these defined rules, the time lost in a change of team is minimal.

Test automation is the answer to ensure higher quality and cost reduction for Organizations, while developing new apps on OutSystems.

Being able to use a test automation tool specially designed for this technology, with a specific algorithm to capture OutSystems objects, will increase quality, optimize development and ensure better results.

Noesis Expertise:

+10 years OutSystems Partnership

+240 OutSystems Certifications

+20 years of expertise on Quality Management Services

+180 QA dedicated consultants

100% ISTQB certified testers

NTX® - own test automation tool

+10 years of expertise on test automation

Present in 6 Countries

Portugal, Spain, Netherlands, Ireland, Brasil, USA

With Noesis Expertise and NTX® tool, it's all about going beyond low-code to ensure higher agility.

To get to know more about NTX®, please visit:
<https://www.noesis.pt/pt/solutions/ntx>



Portugal | Spain | Brazil | Ireland | Netherlands | USA



Helping your business grow faster
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