**Decoding Intelligent
SAP Quality Assurance with
Wipro, SAP, and Tricentis**

Abstract

With digital transformation driving new business models and ways of working, it is crucial for enterprises to think differently and move quickly to reap the benefits of the digital economy. Cloud-based SAP transformation -- underpinned by new-age SAP testing capabilities -- is key to building a defect-free SAP production and release environment.

This paper throws light on the capabilities and strengths of Wipro, SAP, and Tricentis in ensuring successful large-scale SAP transformations. By leveraging various tools and proven approaches, organizations can not only reduce cost but also create faster time to value.

3 key challenges in SAP testing

With a constantly evolving digital landscape and increasing technological advancement, organizations are aggressively leveraging cloud-based SAP transformations to improve scalability, increase uptime, boost availability, and speed up the implementation process while ensuring cost optimization. In fact, by 2023, SAP expects cloud revenue to exceed 15 billion euros with predictable recurring revenue accounting for 80 percent of sales[1]. As agile and SAP DevOps delivery models become the core of successful digital transformation, here are a few key trends that are accelerating its adoption:

Faster time to value: Organizations are increasingly transitioning from the waterfall method to the agile & DevOps way of delivery for faster time to value, enhanced quality, improved predictability, and better user experience. However, implementing agile & DevOps for SAP requires specialized technical and functional automation tools for enhanced delivery & continuous change management. It is also crucial to ensure a robust development and testing process while supporting continuous feedback from the business teams on the Minimum Viability Product (MVP) delivered by the scrum teams.

Exceptional business capabilities: The SAP cloud platform empowers organizations to leverage open APIs and use side-by-side extensibility to integrate external content deployed in the SAP Cloud Platform (SCP) with their SAP S/4 HANA cloud system.

Rapid adaption to business changes: Organizations are increasingly migrating from highly customized SAP ECC landscape to a standardized and simplified SAP S/4HANA powered by SAP automation tools, ready-to-use content, ready-to-run systems, and quarterly upgrade releases for increased agility. However, migrating to SAP S/4HANA requires either implementing SAP S/4HANA Cloud MTE (Multi-Tenant Edition), or STE (Single Tenant Edition), or SAP S/4HANA on-premise version, or converting in-place systems for simplification purpose. SAP DevOps & agile delivery models are the way forward to handle such rapid, large-scale transformations and upgrades. A successful implementation of SAP DevOps delivery model requires robust SAP testing capability underpinned by a clear testing strategy, proven approaches, established processes, and advanced tool-sets. This will equip organizations to identify defects in early development and in the quality assurance cycle, conduct SAP custom code analysis, and impact-based regression testing for optimizing the testing scope while reducing effort and cost. At the same time, it will also ensure strong and effective test management for agile project delivery, continuous testing and test automation, resulting in rapid agile-based SAP development and deployment for a unified user experience.

In addition, to fit their unique SAP landscape and release management needs, organizations are increasingly leveraging CI/CD approach for their SAP development projects by leveraging SAP ChaRM. However, applying agile or DevOps to their SAP development and creating a CI/CD pipeline while minimizing large investments requires defect-free releases, shortened testing cycle time, and reduction in the cost of quality. The traditional approach of manual functional testing, script-based test automation, and testing every single test-case fails to provide the required agility and cost-effectiveness.

Taking a 'shift left' approach and preparing in advance to jumpstart testing and test automation

An integrated solution approach by Wipro, SAP, and Tricentis helps effectively address SAP testing challenges. For instance, Wipro's multiple in-house SAP accelerators and tools such as Wipro's genie enable seamless SAP S/4HANA transformation by leveraging ready-to-use test scenarios and test cases from a pre-built SAP S/4HANA specific repository. Similarly, Wipro's

SAP business process recorder records existing SAP processes and converts them into detailed documentation for a reduced test design effort. At the same time, SAP test data miner reduces SAP test data identification and extraction efforts while new-age business process capture tools such as Celonis help to capture and analyze the existing SAP processes. (see Figure.1)
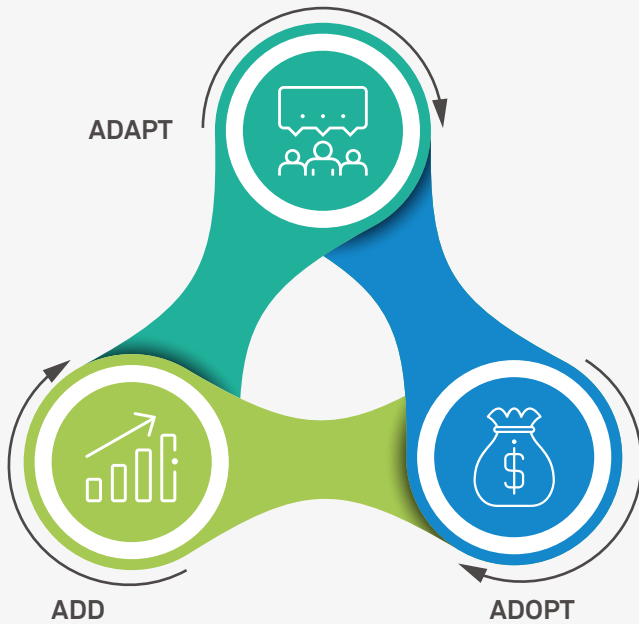

Figure 1: Wipro's SAP capabilities

- Leverage ready-to-use test scenarios and Test cases from our pre-built S4H repository
- Identify & Create New Test Cases for given functionality
- Use the predefined content as a template
- Modify the template as per client specific requirements

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On the other hand, SAP's test automation tools such as ATC, CBTA and START automate testing, provide pre-automated test cases for reuse and SolMan 7.2 Test Suite helps with SAP testing for all SAP transformations. SAP SolMan 7.2 can be easily integrated with test management tools such as JIRA to effectively manage agile-based SAP development work. Not only this, SAP SolMan work packages can be easily mapped to JIRA epics while work items can be mapped to JIRA stories. In a similar way, SAP ACTIVATE framework, using Model Company, provides ready-to-run reference solutions for industry-specific requirements. Organizations can take advantage of SAP's fully activated appliance underpinned by pre-configured best practices, test cases, and demo scenarios. During the regular SAP S/4HANA upgrades, SAP helps companies gain access to the whitelisted APIs impacted by the upgrade. This in turn helps identify specific integration scenarios that need to be regression tested.

Finally, Tricentis' new-age tools such as LiveCompare combined with Tosca delivers testing solutions for a seamless SAP upgrade or migration, impact analysis, and script-less test automation. This approach combines the power of most-at-risk impact analysis and test automation to optimize the testing cost and effort, while ensuring high quality and coverage. In addition, this also helps identify test hits and gaps wherein test hits are automatically organized into execution lists and are run using Tosca distributed execution. Moreover, LiveCompare helps in identifying all automated test cases including Tosca and CBTA, which are not subjected to any functionality change, and can be run immediately without any sort of modification. It also helps detect automated test cases from Tosca & CBTA that are subjected to a functionality change and would require maintenance before they can be executed. At the same time, with LiveCompare, companies can identify manual test cases related to the impacted functionalities and all the gaps that are required to be filled for claiming 100% testing coverage. LiveCompare's continuous impact analysis and release assurance safeguards the integrity of the production release (see Figure 2).
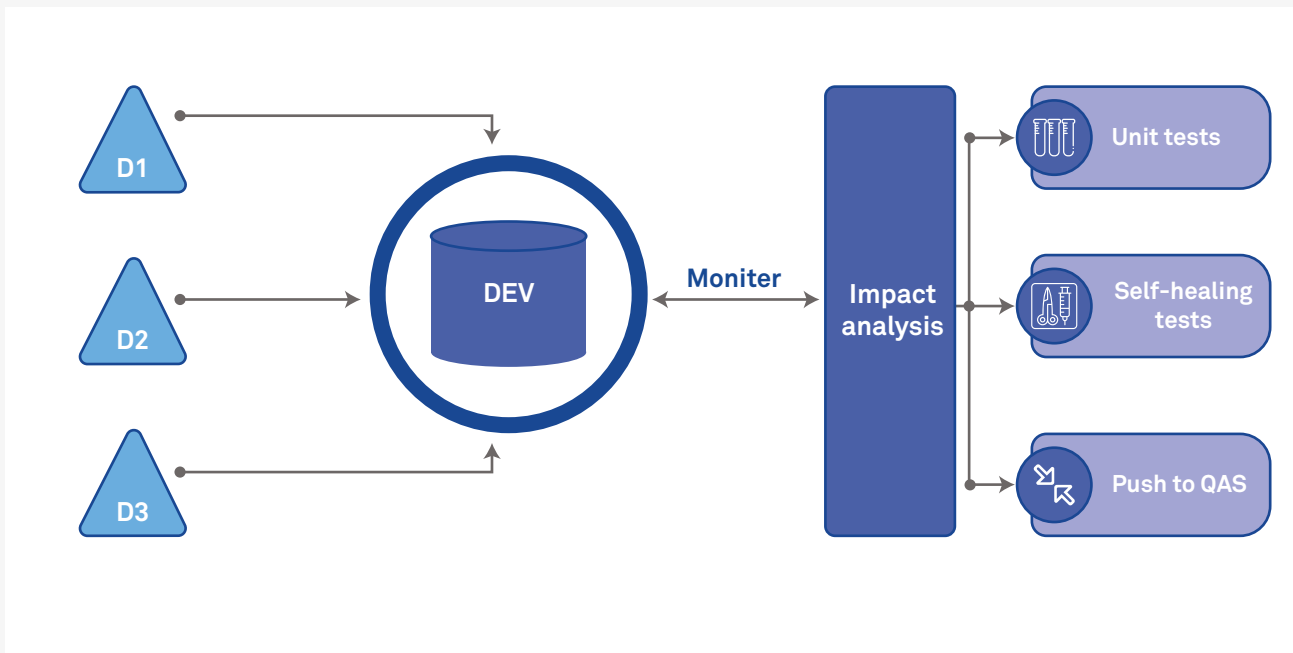

Figure 2: LiveCompare impact analysis

Journey to self-healing test automation

Tosca test automation is extremely resilient to changes. However, if an SAP application undergoes any changes due to technical or business requirements, it can damage automated test scripts. This is known as the half-life problem of test automation (see figure 3).
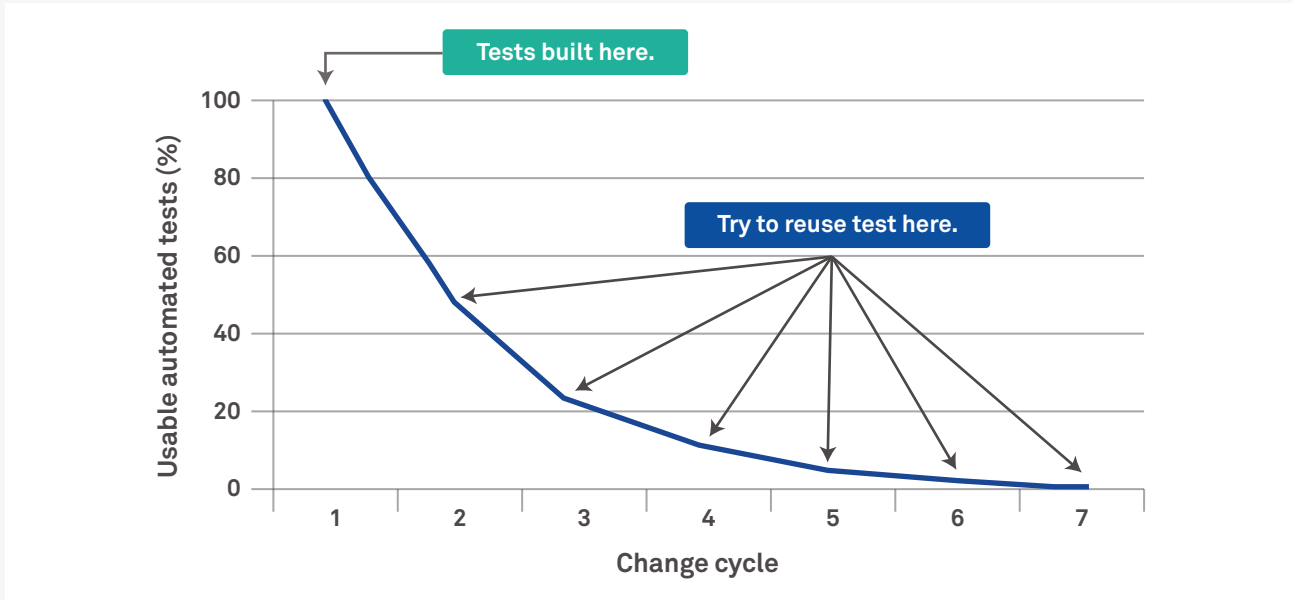

Figure 3: Automated test scripts

In this scenario, with every successive release, only 50-60 % of the test automation is usable. The other 40-50% is damaged by changes incurred as a result of the SAP application user interface. As users are unable to identify the damage until the release date, there's often no time to heal the test automation. This pushes users to leverage expensive and error-prone manual testing resulting in defective production. When LiveCompare and Tosca capabilities are combined, we can monitor the SAP QA systems and identify the impacted Tosca test automation scripts, providing testing teams with the maximum time to heal the automated test cases by re-scanning the application (See Figure.4)
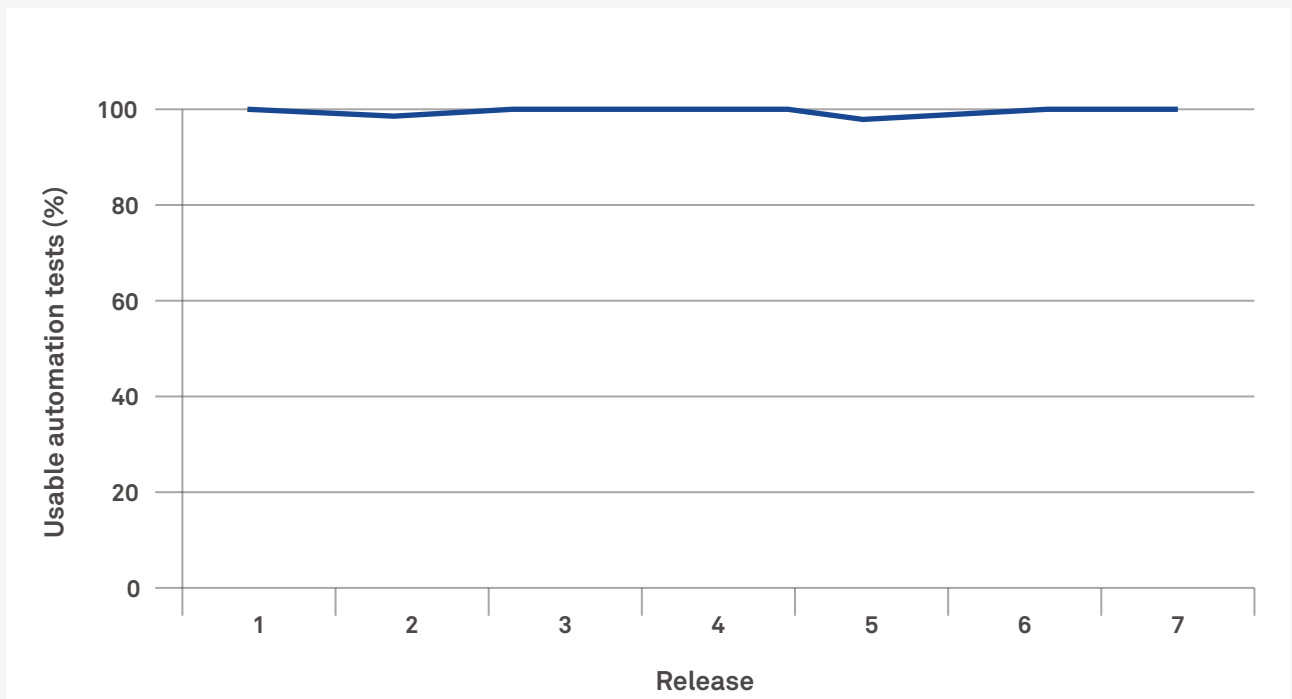

Figure 4: Healing through automated test scripts

Scaling and accelerating SAP transformation with an integrated solution approach

Addressing quality assurance challenges for the highly complex & fast-changing SAP applications is an uphill task, resulting in higher cost of quality, lengthy testing cycles, and delayed deployment. A well-organized and connected tool ecosystem (see figure 5) coupled with a well-planned testing strategy, strong QA governance, and an integrated tool chain approach can help in successful large-scale SAP transformations, resulting in reduced overall cost of quality, shorter testing cycle, and faster time to value.
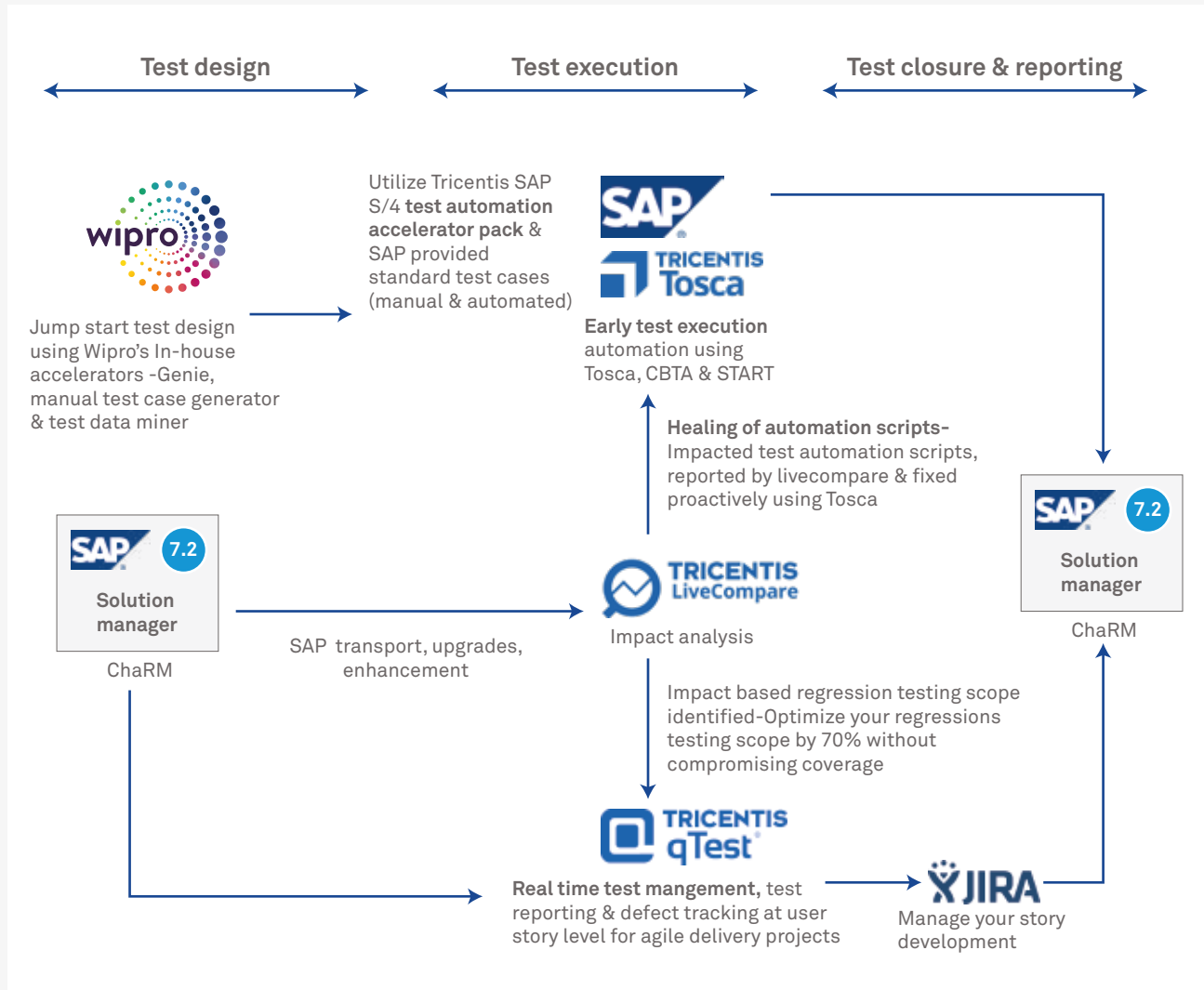

Figure 5: SAP, Wipro and Tricentis connected tool ecosystem

Early detection of defects and improved defect containment rate also help reduce SAP release deployment time and enable faster SAP rollouts and upgrades for defect-free SAP production environments.

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References

[1]https://www.crn.com/news/applications-os/sap-reports-39-cloud-sales-surge-in-2019-continued-customer-migration-to-s-4hana

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