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WHITE PAPER

Accelerate your SAP transformation with OpenText DevOps

Lifecycle management, functional testing, and performance engineering for successful SAP transformations

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Accelerate your SAP transformation with DevOps

OpenText™ DevOps offers a full range of solutions to ensure high quality and fully tested releases making a successful SAP transformation, at any scale. With solutions for lifecycle management, functional testing, and performance testing, the OpenText DevOps portfolio for SAP is uniquely positioned to ensure success.

SAP transformations are a boardroom-level issue, having the attention of CEOs worldwide. With more than 245 million cloud subscribers in more than 180 countries, including 99 percent of the largest 100 companies,[1] investment in SAP is visible at the highest levels. SAP is constantly innovating, with advances in technologies such as SAP S/4HANA and RISE to the cloud, it's enabling new platforms such as Internet of Things, and the SAP Business Technology Platform (BTP). At the same time, many SAP customers are making a transition to a DevOps style of delivery, which introduces new challenges. Keeping up with the changes in SAP offerings, together with the move to DevOps, requires unprecedented technological support for organizations that must provide an uninterrupted service to their business and customers, while maintaining a consistently high level of quality.

Why are SAP transformations so demanding?

Most of SAP's customers actually depend on SAP to run their business. Business processes managed by SAP run across the whole organization, and even out to other organizations, such as customers, suppliers, or partners. Any interruption to an SAP process could have disastrous and costly consequences for everyone involved. Maintaining that business continuity presents several significant challenges, both from the business's perspective and from a technical perspective.

Business challenges for SAP customers

No "one size fits all' migration path

SAP is highly adaptable to each customer's needs and there is no single method for SAP migrations for all organizations. Every customer is unique and has its own challenges, each of which need to be identified, understood, customized into SAP, and tested.

Hard to find specialized staff

It can be difficult to find and hire SAP experts who have been through a similar transformation, and who can bring their experience to the table. Therefore, using your existing key users to augment the SAP project team, especially for testing activities, becomes tempting. This however can lead to overburdened, ineffective, and inexperienced teams, increasing the risk of critical errors and failed projects.

1 SAP, Global company information

The show must go on

Updating SAP means an in-flight update to business-critical processes. When your business depends on SAP, any downtime can be catastrophic. You need to understand and de-risk any changes that could affect users, through testing, before any negative impacts.

Quality must remain high

Any errors in an SAP system, or in data, can propagate quickly to numerous internal and external systems. Maintaining integrity is paramount and requires extensive testing.

Data security

Data must be secured, and the organization must show that they comply with security regulations. It is important to understand the regulations and ensure changes to the system don't leave the company liable.

Technical challenges for SAP customers

It's not just business challenges. There are many technical challenges as well:

Worldwide teams and coordination

SAP projects typically involve coordinating people from around the globe into a single effort, this requires end-to-end traceability, management, and visibility throughout the software development lifecycle.

Proprietary technology

SAP's user interface, such as SAPGUI, SAPUI5, and SAP Fiori, has proprietary attributes and requires specific technology capabilities in order to test effectively.

Complex ecosystem

The SAP landscape includes a diverse ecosystem of applications, creating inter-dependencies that need to be fully tested as part of an end-to-end business process lifecycle, which encompasses SAP and non-SAP systems. Some of the communications protocols between SAP and other systems are proprietary. For example, OData, IDoc, and RFC is not supported by all testing tools.

Varying delivery methods

Organizations typically employ a system of record in the back office that is accessed through a system of engagement on the front end. When the system of record is stable, it tends to be maintained using waterfall-based development methodologies. On the other hand, the system of engagement can be fast-paced and dynamic, using DevOps methodologies to deliver updates almost continuously. Keeping those systems in sync is a challenge, due to the different methodologies, as is sharing and collaboration between the teams working on the different systems.

SAP S/4HANA migration approach

SAP recommends SAP Activate with a six-phase approach to migration, which works for both on premises and cloud. The framework supports teams through the different stages of the project, beginning with discovery and preparation, followed by an exploratory stage, then into realization and deployment into production, it finishes with running the new system.

OpenText DevOps solutions align to this through technical and process integrations, which will closely accompany customers throughout each stage of their SAP migration to ensure a successful transition.

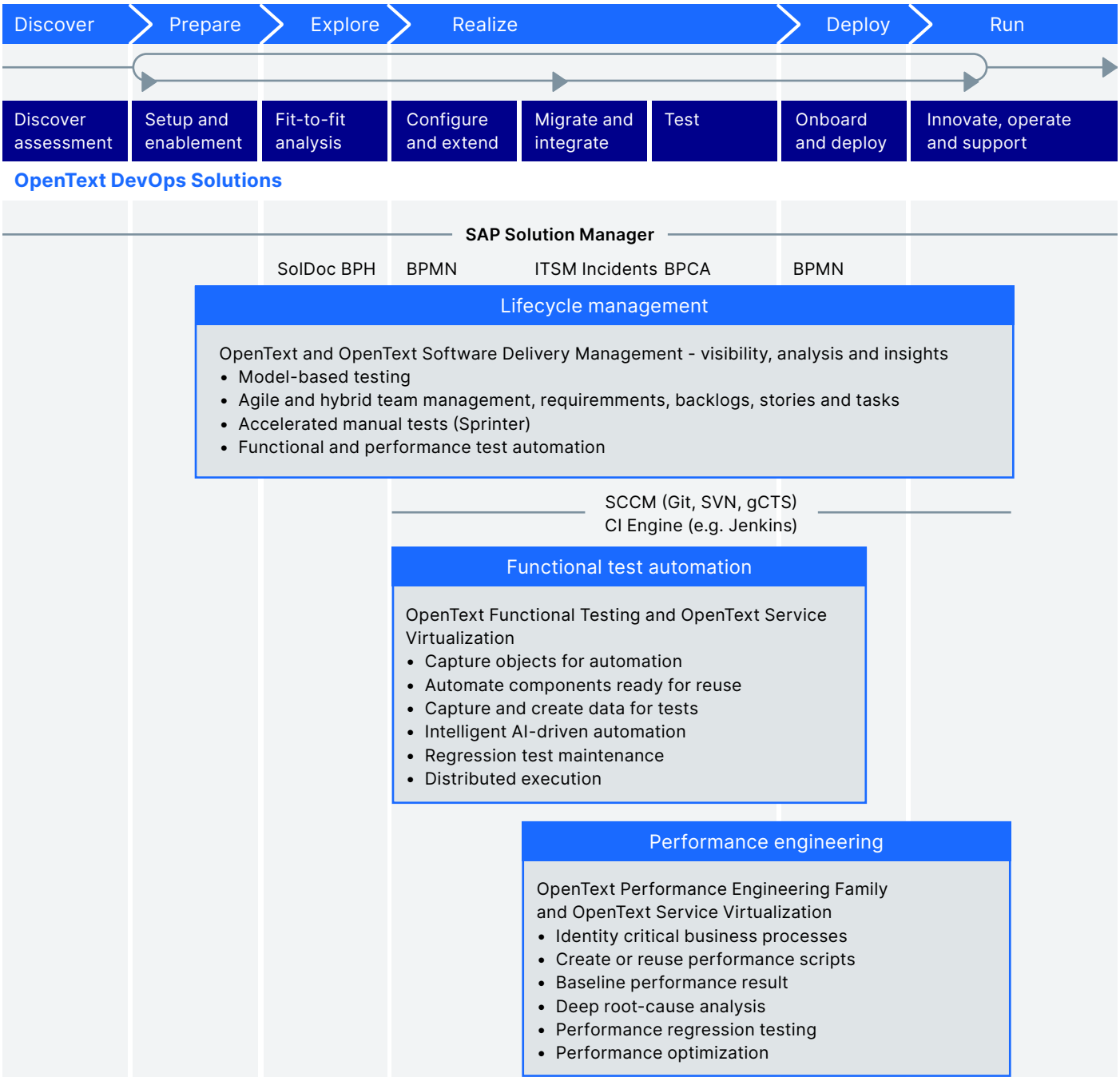

Figure 1. SAP S/4HANA migration approach

DevOps solutions for SAP

OpenText is uniquely positioned to solve many of the technological challenges you're likely to encounter while ensuring the quality of your SAP systems. This won't solve every business challenge but it will mean you can go live with confidence.

DevOps is a set of integrated software solutions that enable IT and line of business teams to deliver applications with confidence, faster than ever. It covers the disciplines of application lifecycle management, automated functional testing, and performance engineering. The DevOps portfolio supports software delivery teams using any development methodology, from traditional waterfall to modern Agile and fast-paced DevOps. It is designed to support organizations of any size and vertical, providing end-to-end visibility into strategic investments all the way from portfolio planning through development, testing, deployment and production.

The following are the products in the DevOps portfolio for SAP:

Functional testing

OpenText Functional Testing

OpenText™ Functional Testing automates functional testing through an intuitive, visual user experience that encompasses keyword-based automated software testing with intelligent AI-driven testing in one environment. The advanced capabilities in OpenText Functional Testing help you significantly reduce the cost, time spent, and complexity of creating automated tests through its AI features, the ease of use and simple-to-maintain tests, while driving continuous quality. As well as testing applications through their user interface, testers can use OpenText Functional Testing's API testing capabilities to test services and applications through their programming interfaces. OpenText Functional Testing includes support for SAPUI5 objects and methods, SAP Web Dynpro, SAPGUI, and the SAP NWBC desktop application, plus more.

OpenText Functional Testing for Developers

OpenText™ Functional Testing for Developers is a powerful and lightweight functional testing solution built specifically for continuous integration and continuous testing. It enables and encourages developers and QA to collaborate in agile teams by using the same tool for development and testing of applications. Among the many technologies enabled by OpenText Functional Testing for Developers is support for SAPGUI and SAPUI5 applications.

OpenText Functional Testing Lab for Mobile and Web

OpenText™ Functional Testing Lab for Mobile and Web provides an end-to-end quality lab of real devices, emulators and, cloud browsers. It offers a robust and comprehensive solution for all your testing requirements, aimed at reducing costs and saving time while ensuring the best quality for your customers.

Business process testing

In many organizations, there are people who know how things are supposed to function and how the business processes should flow, and there are those who are able to build automated tests. Sometimes, these people are not aligned. OpenText Business Process Testing is a unique way to close this so-called "quality gap," by putting the power of building, data driving, and executing tests in the hands of subject matter experts and QA engineers with no scripting knowledge. How? By taking programming out of those tasks and replacing it with an intuitive, code-free, script-less, web-based interface for capturing business process flows and storing them as components that can be used for both manual and automated tests.

OpenText Sprinter

OpenText Sprinter is the ideal solution for accelerated manual testing, providing advanced functionality and a rich toolset to make manual testing more efficient and effective. Everything you need to create and execute manual tests more quickly and report any defects that you find, are available from within OpenText Sprinter, such as recording to a manual script, record/replay macros, data entry automation, and videos. In fact, all of the tasks necessary for manual testing with minimum interruptions to your work. OpenText Sprinter includes support for SAPGUI and SAPUI5.

Performance engineering

OpenText Professional Performance Engineering

OpenText™ Professional Performance Engineering enables testers to create and run performance tests on an unparalleled range of application technologies, to ensure that applications can withstand the demands placed on them in production. OpenText Professional Performance Engineering includes support for SAP applications running on the web and mobile, as well as SAPGUI applications. It also has advanced features for script-less test creation giving fast, correlation free load tests.

OpenText Enterprise Performance Engineering

OpenText™ Enterprise Performance Engineering is a cross-enterprise performance testing tool that enables Performance Testing Centers of Excellence to manage multiple, concurrent performance testing projects across different geographic locations without any need to travel between the locations.

OpenText Enterprise Performance Engineering, you manage all aspects of large-scale performance testing projects, including resource allocation, licensing and scheduling, from a centralized location accessible through the web. It helps streamline the testing process, reduce resource costs, and increase operating efficiency. OpenText Enterprise Performance Engineering provides the same technological support for SAP as OpenText Professional Performance Engineering and adds the ability to generate load to very large scales.

"[OpenText Application Quality Management] tracks and manages the entire testing process and defect management for us, and we introduced automation for 72 percent of all test cases."

Jose Jiminez

SAP Delivery Center Test Management Lead, IT Global Development Center

Japan Tobacco International

OpenText Core Performance Engineering

With its smarter approach, OpenText™ Core Performance Engineering makes it easy to plan, run, and scale performance tests without the need to deploy and manage infrastructure. OpenText Core Performance Engineering includes all the Load Injector hardware you need to run your tests from the cloud as well as the ability to connect to you own local Load Injectors so you can work behind your firewalls.

OpenText Service Virtualization

OpenText™ Service Virtualization enables delivery teams to virtualize both SAP systems and non-SAP modules, removing the dependencies on any eco-system component, with full support for the SAP service protocols such as oData, IDOC, and RFC.

Lifecycle management

OpenText Application Quality Management

OpenText™ Application Quality Management empowers organizations to manage the core application lifecycle, from requirements through deployment, granting application teams the crucial visibility and collaboration needed for predictable, repeatable, and adaptable delivery of modern applications.

As part of the overall lifecycle process, including DevOps, OpenText provides the Connect Core data integration platform, which enables the all-important artifact synchronizations between products. As part of this, we include a native SAP Solution Manager connector, which enables OpenText Application Quality Management to connect to SAP Solution Manager to export blueprints and solution documentation from Solution Manager as a Business Process Hierarchy into OpenText Application Quality Management's Requirements module.

This affords testers full visibility into the requirements from SAP and allows them to design and run tests to ensure that these requirements are implemented as intended. Furthermore, Solution Manager Business Process Change Analysis (BPCA) results can be brought into OpenText Application Quality Management Requirements showing what is impacted by what changes. If a defect is found and entered in OpenText Application Quality Management, the defect can be automatically synchronized with the SAP Solution Manager ITSM module.

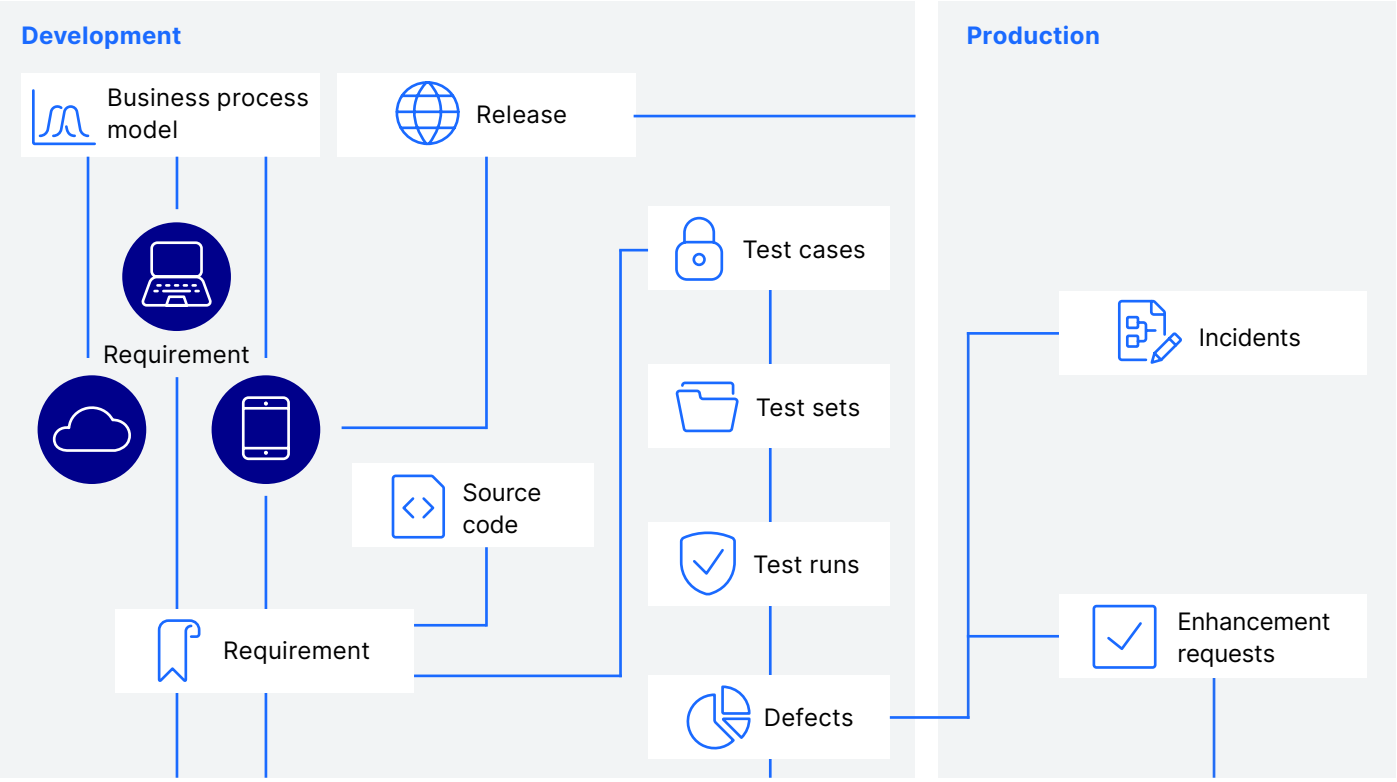

Figure 2. ALM allows end to end traceability

OpenText Software Delivery Management

OpenText™ Software Delivery Management is a web-based application lifecycle management solution that enables teams to collaborate easily, manage the application delivery pipeline, and visualize the impact of changes. OpenText Software Delivery Management can be synchronized with OpenText Application Quality Management to provide end-to-end traceability and governance of SAP projects.

Using the same DevOps enabling artifact synchronization platform, as described previously with OpenText Application Quality Management, OpenText Software Delivery Management includes integrated planning, continuous integration, test management, and release management. With these capabilities, Agile teams and DevOps toolchains deliver high quality software with insight, traceability, analytics, end-to-end visibility, and continuous quality.

OpenText Software Delivery Management can also be integrated with SAP Solution Manager to ensure consistency of Solution Documentation across the solutions, to allow for Defects to flow back into SAP Solution Manager ITSM and also for SAP Business Process Change Analyzer results to flow into OpenText™ Software Delivery Management marking which requirements are impacted by transported changes in SAP.

Model-based testing

This is an innovative way of linking your required business processes to your manual and automated testing priorities by reusing the documented SAP processes to accelerate and guide the testing efforts. You will use the inbuilt path coverage strategies to automatically break your processes into multiple variances and then connect to tests. The units that make up the end-to-end tests can then be ran manually or automated using AI technology.

Flexible deployment options

You can test SAP cloud-deployed software using all the power of the cloud itself and avoid deployment and maintenance headaches with OpenText™ Cloud services and solutions. Our cloud solutions let your business use the OpenText software you need, when you want, as we offer the largest toolkit of cloud solutions with flexible pricing and trusted insights to make sure you have everything you need. Our customers benefit from knowledgeable, experienced, and personalized assistance as part of the solution including coordinated quarterly upgrades ensuring you are never left behind.

Unique capabilities to address unique SAP challenges

Earlier, we listed several of the technical challenges presented by an SAP transformation. The DevOps solutions for SAP are in a unique position to address these challenges.

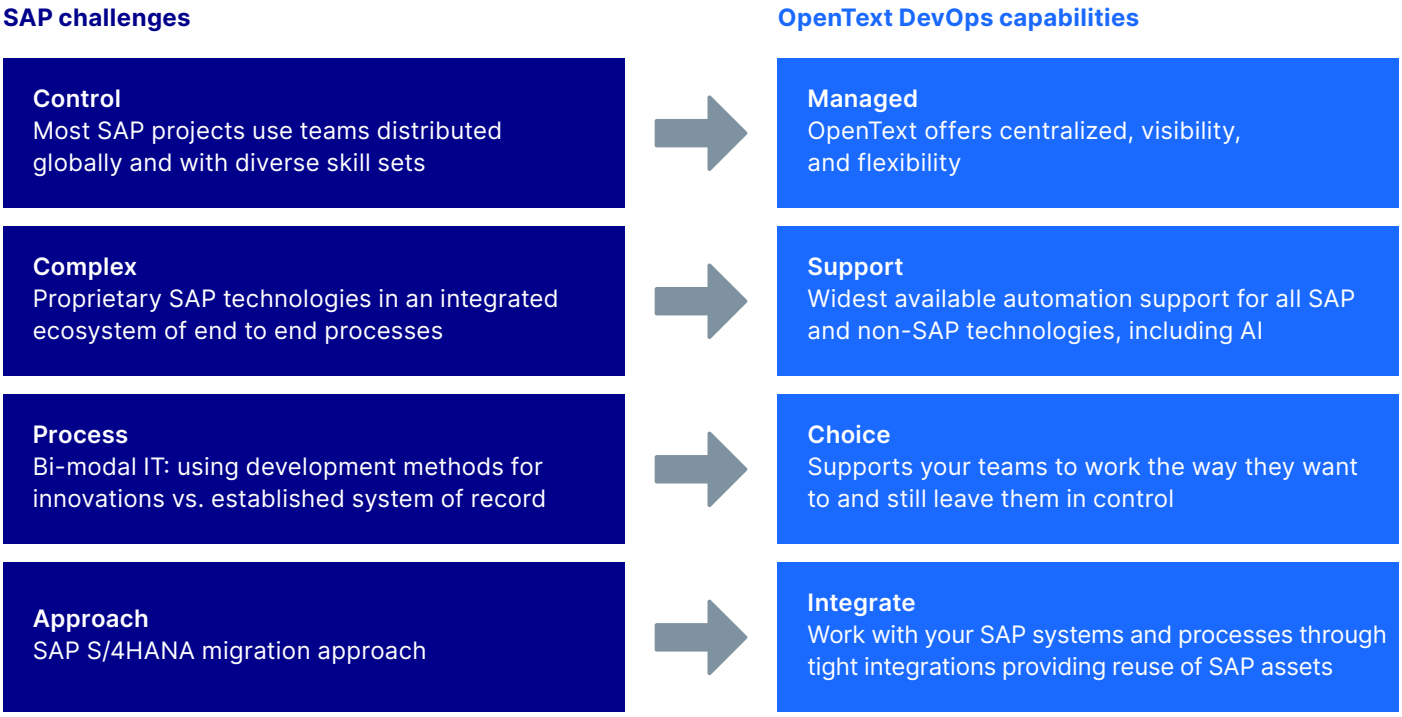

Figure 3. DevOps adds value to SAP landscapes

Let’s look at these in more detail.

Globally distributed teams

SAP projects are normally large multi-team, multi-year efforts using resources from all parts of the organization, wherever they are globally. These teams will likely never have worked together before, and all have key knowledge and experience that is required for a successful delivery. The challenge to coordinate and aid collaboration is significant and very important if wasted time, rework and duplications are to be avoided. For testing OpenText products are a perfect fit for this situation.

OpenText DevOps products are all specifically designed to be used in projects with teams spread across the world, sharing work, seeing what others have done but in a controlled and secure way. You can allocate “jobs” to individuals or small teams and watch as they progress in real time, monitoring status and being ready to provide help as required. You can operate a follow the sun approach, when one team clocks off another picks up where they have finished. In this way you can keep your project moving in the right direction by making course corrections and reallocating work easily, when required.

Additionally, in the later stages of testing you could well be using staff with more business experience and who are less technically able. Again, this in no issue as you will be able to provide them with specific and simple interfaces where the required testing process and actions to followed are clear and obvious—letting them get on with the job at hand, not working out how the testing tool works.

Proprietary technology

DevOps solutions support SAP protocols across functional testing, performance testing, and mobile testing.

To ensure that your SAP implementation is working correctly, and that it supports the load that your users will put on it, you need to be able to understand the technical implementation and interfaces between each of the parts of the system. The OpenText functional and performance solutions support the technical protocols that you need in order to test your SAP implementation, and enable you to quickly and easily create extensive tests that can run as part of your delivery pipeline.

Running a performance test on production systems can cause a performance degradation and user dissatisfaction. Ideally, the part we’re testing should be isolated from the production systems. This is where service virtualization comes into play.

By virtualizing these systems, and simulating their behavior, they will continue to work as normal in production, and will be effectively disconnected from the system under test. But, the system under test is unaware of that, because service virtualization can faithfully emulate their behavior. The system under test behaves as it would in production, and none of the production systems are affected by the test. Once the test is successfully completed, and any issues or defects resolved, we can deploy to production and engage the real systems.

	ADM Solution	SAP Technology
Functional testing	OpenText™ Functional Testing (GUI Test)	SAPGUI, SAP WebGUI, Fiori (SAPUI5), S/4 HANA, CRM, Solution Manager, Web Dynpro, NetWeaver Business Client, Portal, Hybris, Ariba, SuccessFactors, FieldGlass, Concur, Business Networks, SAP Cloud (public and private)
	OpenText™ Functional Testing (AI Test)	Mobile, Browser, Fiori (SAPUI5), SAPGUI
	OpenText™ Functional Testing (API Test)	IDoc, RFC, O Data, SAP.Net Connector
	OpenText™ Functional Testing for Developers	Fiori (SAPUI5), SAPGUI
	OpenText™ Functional Testing Lab for Mobile and Web	Fiori (Hybrid App & Pure Web)
	OpenText™ Core Software Delivery Platform (MPT)	BPMN formats e.g. Signavio, Solution Manager, Celonis
	BPT	Business users, Packaged Apps Kit
	Sprinter	SAPGUI, SAP WebGUI, Fiori (SAPUI5), Mobile
Performance and virtualization	OpenText™ Professional Performance Engineering	SAPGUI, Fiori (SAPUI5), SAP WebGUI, HTML5, SAP Cloud, SMP (SAP Mobile Platform)
	OpenText™ Enterprise Performance Engineering	SAPGUI, Fiori (SAPUI5), SAP WebGUI, HTML5, SAP Cloud, SMP (SAP Mobile Platform)
	OpenText™ Core Performance Engineering	SAPGUI, Fiori (SAPUI5), SAP WebGUI, HTML5, SAP Cloud
	OpenText™ Service Virtualization	IDoc, RFC, O Data
	Network Virtualization	Standard protocols
Lifecycle management	ALM	Solution Manager integration
	OpenText™ Software Delivery Management	Solution Manager integration

Figure 4. OpenText DevOps for SAP technologies

Development methods that suit teams needs

Combining ALM with OpenText Software Delivery Management allows SAP teams to address the DevOps challenge of syncing infrequent changes to systems of record with fast paced changes to systems of engagement.

Digital technologies—and the ways we use them in our personal lives and work—have dramatically changed the way business is done. The pace at which it is happening now is accelerating faster than the pace of transformation in organizations. Digital transformation is accelerating the transformation of business activities, processes, and models to fully leverage the changes and opportunities of digital technologies. This is a direct response to the "age of the customer."

In order to close the gap between customer expectations and business's responsiveness, organizations are massively shifting their budgets from the back office to the digital front office—from the "systems of record" to the "systems of engagement."

Systems of record host traditional enterprise applications, such as enterprise resource planning, finance/accounting, and human capital management.

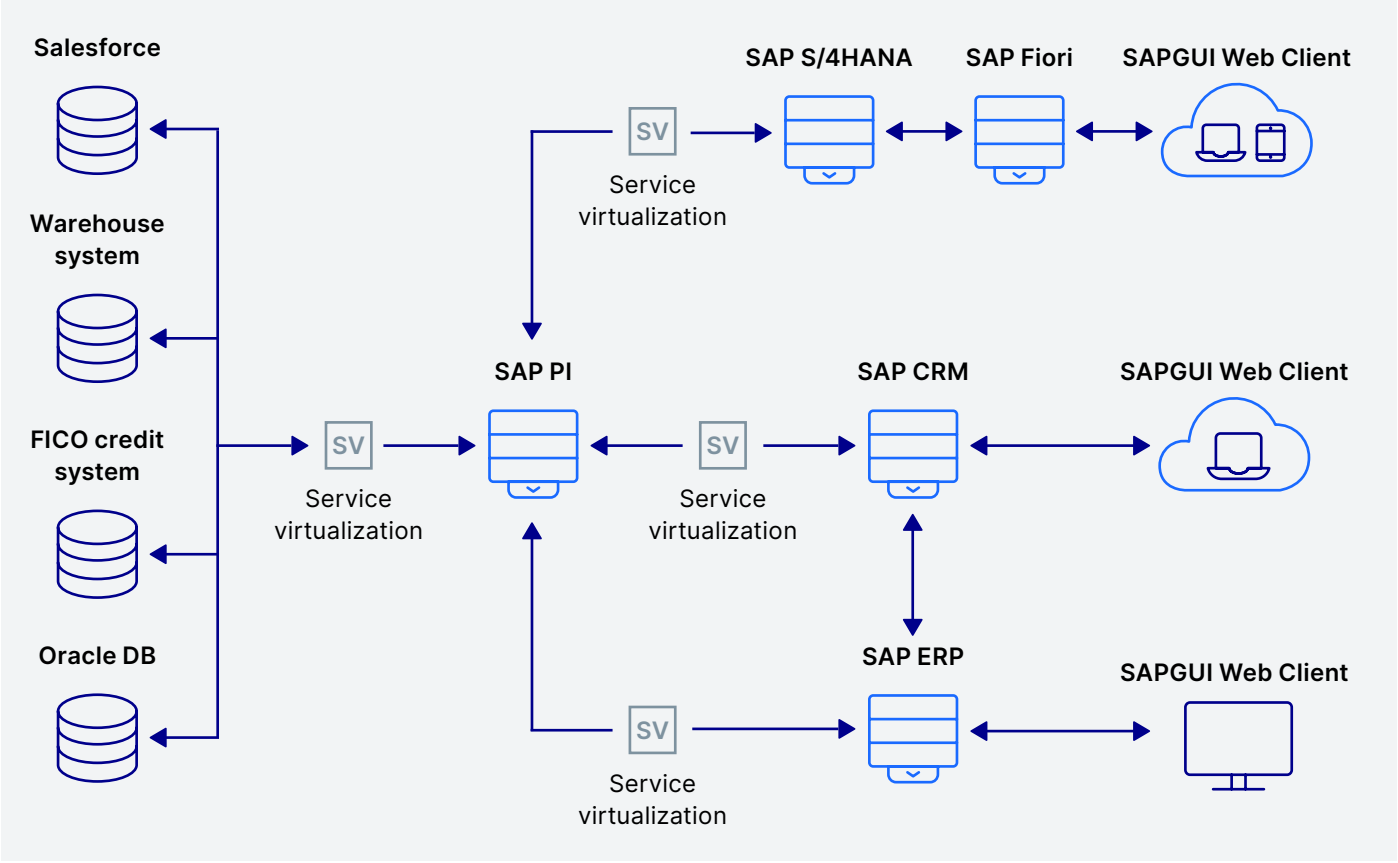

Figure 5. SAP topology: Multiple connected systems

Systems of engagement touch people, empowering customers, partners, and employees with context-rich apps and smart products to help them make decisions on the go. To meet customer expectations, the digital front end needs to work flawlessly and fast across all channels and platforms, independently of browsers, devices, connection speeds and geographies.

Organizations manage their back-office systems with tools such as ALM, but as they modernize the front office, they are moving to OpenText Software Delivery Management to manage the lifecycle of the mobile interfaces, cloud, and web systems that access them. The front office and the back office are connected through their data flow, and hence, the lifecycle management systems must be aligned, through synchronization between OpenText Software Delivery Management and ALM. Tests, defects, and other artefacts can be synchronized transparently, with both systems being kept updated in real-time. While there may be different teams working on the front and back-end development, they can collaborate and ensure that nothing is missed.

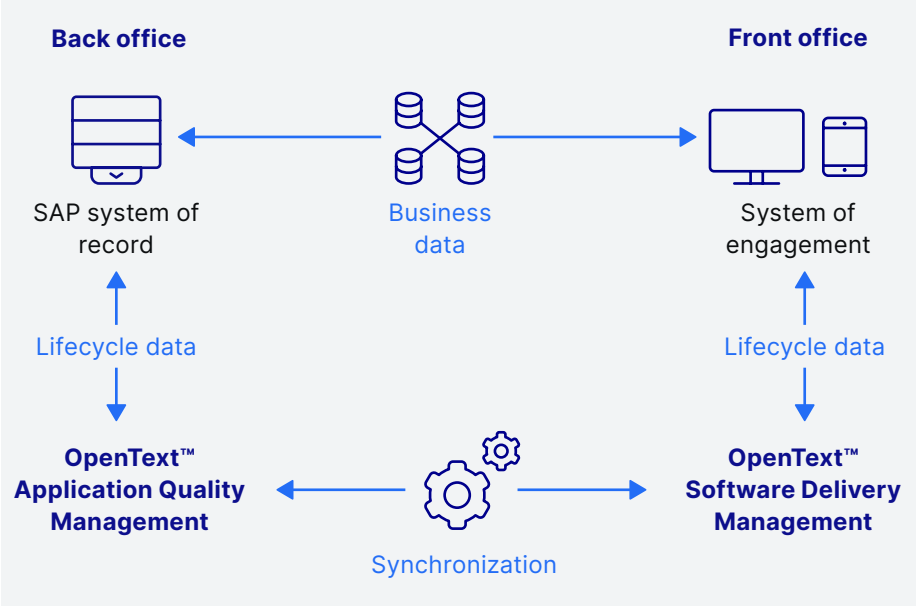

Figure 6. System of record versus system of engagement

SAP S/4HANA migration approach

ALM provides governance and traceability for SAP development and maintenance operations.

At a high level, SAP Solution Manager is where the definitions of the business processes are maintained. ALM is able to integrate with Solution Manager and allows managers and testers to see the testing requirements, the tests, and any defects, all in one place. And through the integration and synchronization between ALM and OpenText Software Delivery Management, all teams get end-to-end visibility into the state of quality, and the development pipelines.

Resources

Solution for SAP modernization

Learn more ›

SAP Solution Manager has many capabilities to help customers with their SAP implementation project. ALM extends these capabilities to deliver test management, change control management, and business process testing to ensure that the testers know what to test, and ensure that the service hasn't been inadvertently broken by a rogue change.

With OpenText Model-Based Testing, you are also able to reuse predefined or customized business process models via the Business Process Model Notation (BPMN) to import into OpenText Model-Based Testing giving you a huge boost in the time taken to create automated tests. The BPMN models are used in SAP projects describe what the end-to-end processes are and hence exactly what you should be testing. They can originate from many sources be it via process mining, SAP Best Practices or through your own processes experts but however they are defined as a tester you can reuse them to become the very basis of your testing.

Summary

Businesses are inextricably linked with the software that runs the business. As they upgrade or transform their business software, they must ensure that the business continues to function during and after the transformation, without any loss of service or degradation of quality. Any transformation brings its own challenges, but when SAP is the platform underlying the business, there are a number of unique technological challenges that must be addressed in order to ensure business continuity.

OpenText delivers a wide portfolio of application lifecycle management products this include support for all the technologies used in SAP platforms and helps organizations to manage and execute their SAP transformations at speed and quality. Customers who choose the OpenText portfolio know that they are drawing on a long and close partnership between SAP and OpenText, which has been focused from the start on ensuring customer success and satisfaction throughout complex SAP transformations.

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