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1&1

Project
Industry: IT & Telecommunikation
Function: Software QA

Efficient use of resources ensures the highest software quality: Telecommunications provider 1&1 scales with software robots

Increasingly complex applications, frequent release cycles – but the software must be reliable - always. 1&1 employs a digital workforce across departments for quality assurance of business-critical applications.

The employees in customer care at broadband, hosting and mobile comms provider 1&1 use a bespoke Customer Relationship Management (CRM) system to manage the needs of several million customers every day. 1&1 has its own testing unit with four software engineers for quality assurance of this business-critical application developed in-house. "The CRM is at the heart of customer enquiry processing at 1&1. If the system does not work, all processes stagnate. The software is continuously up- graded and optimized", explains Andreas Förch, head of the QA unit within development: "We carry out several quality checks at various test levels to ensure any new updates to our CRM system have a smooth go-live."
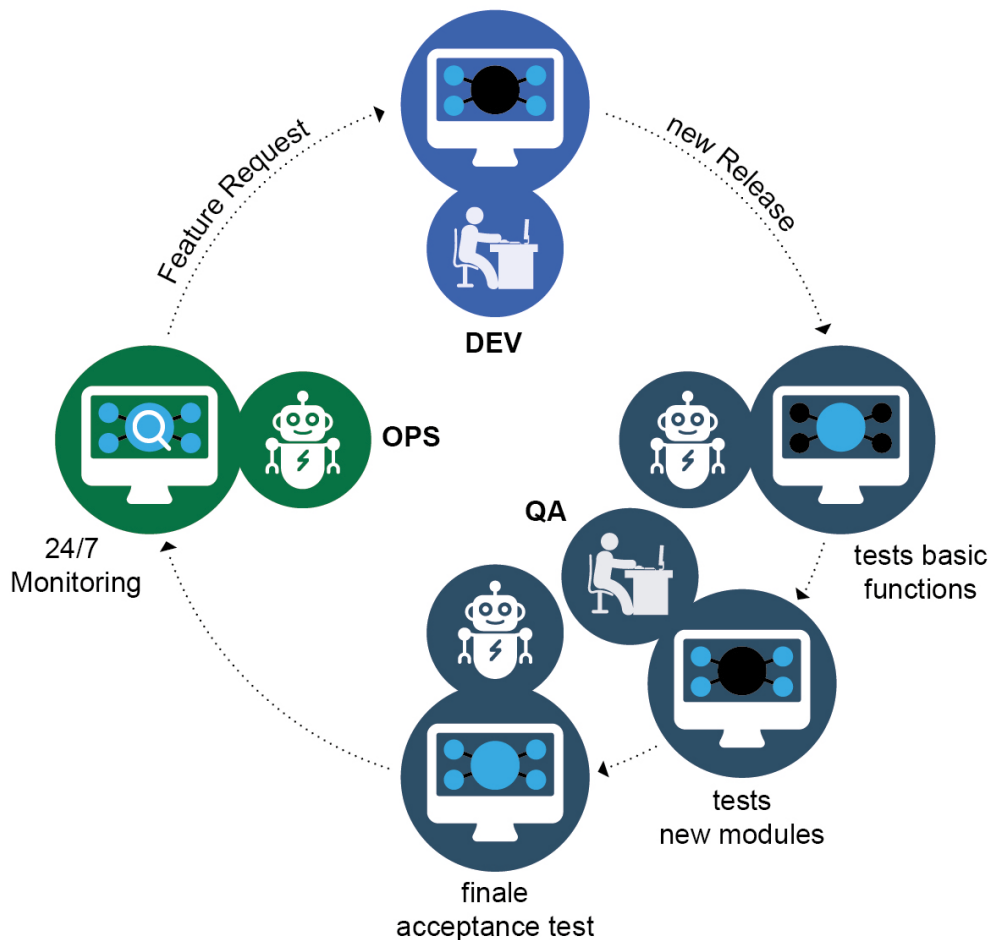
Just before release: so little time, so much to do

Do the newly developed modules of the software meet the specifications from the customer care departments? Do they work? "This is what our qualified testers are particularly focused on." However, intensive examination of

changes made is not a complete quality check. The testing unit has to undertake functional checks of the entire new release as well as its smooth integration into the existing digital landscape at 1&1.

"Comprehensive system integration and acceptance tests create a high demand on the capacities of our test team because of the complexity of modern applications and IT environments - and at an increasing frequency of execution." Add to this an inevitable time pressure – if the software development process is delayed at all, time for testing is limited, "and being at the end of the 'application supply chain' we act as overstretched crash test dummies."

In order for the 1&1 Testing Unit to be able to deliver the software on time at the scheduled release date - despite the high workload and time pressures, "we have to scale the resources in the QA team". So, does that mean a huge investment in more staff? "No – we take a much simpler approach: we automate".

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DEV

new Release

Feature Request

OPS

24/7
Monitoring

QA

tests basic
functions

tests
new modules

finale
acceptance test

Cross-departmental use: 1&1 uses software robots for automated software tests prior to go live and 24/7 application performance monitoring during operation.

Software robots for software test automation

For two years now, the Testing Unit of 1&1 has been employing digital employees from the software robotics provider Servicetrace, currently with a total of 9 robots. **"The software robots handle a lot of monotonous tasks for us and cope quickly and precisely with an enormous number of test cases",** explains Förch enthusiastically right from the start with a typical example: "The standard situation was: a new release set for the day after tomorrow. The test manager has blocked the whole day in his busy schedule for intensive testing of the new module, specified his test cases, sits down highly motivated with a good cup of coffee ready for work, starts the application and: nothing. Thankfully, this doesn't happen much anymore." This is because the tireless digital colleagues regularly check the core functionalities of each new CRM release during the development phase, "basic tasks that simply are a given, such as starting the application, loading a customer, selecting a contract".

Only after a successful functional check do the software robots hand over to their human colleagues – who can then test the new modules in detail and in a concentrated manner until their project has the necessary maturity to be included in the new release. The simultaneous work of the four test managers on their respective projects and on different test levels is perfectly managed via various slots in the test automation solution capable of servicing multiple clients.

Once manual testing of new modules has been com- pleted, the relevant new test cases are integrated into the existing test automation portfolio. At this full system testing stage, 1&1 uses the Servicetrace test automation for final system inteparticular gration and acceptance tests of the complete new release in a production-ready test environment. **"Without automation, such regular, frequent and comprehensive tests just wouldn't be possible."**

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Simply automatic: cross-departmental software QA

The German software provider was initially shortlisted for possible test automation solutions on the basis of an internal reference from 1&1 IT Operations, where Servicetrace software robots monitor the performance of digital processes from the customer and employee perspective. The use of the automation solution both in IT operations and in software QA allows efficient and seamless cooperation between the two departments today: the automation workflows created by the testing unit are reused for digital experience monitoring by IT operations.

"We make it easier for us – we automate."

*Andreas Förch,
Head of 1&1 Testing Unit for
Customer Care IT Systems*

But even after a comparison of providers, Servicetrace was selected by the decision makers of the 1&1 Testing Unit because of our mature software technology and extremely simple use and management: **"With this no code solution, employees can quickly automate test cases themselves after some short training – no further expertise or external consulting is needed."**

In addition to the hard technical facts, the team leader of the testing unit praised the "refreshing" cooperation with the Servicetrace team: "We immediately noticed here that the customer is more than just a ticket number. It's clear that for Servicetrace consultants, a solution which fits the customer is of paramount importance. Our feature requests are considered constructively and taken into account for a continuous, customer-oriented development of their solution."

Freed from routines: happy employees

In addition to a measurable increase in efficiency and agi- lity of the QA processes, the Servicetrace software robots deliver a noticeable increase in satisfaction among the 1&1 testers, because they're relieved of monotonous routine tasks ("quite honestly, it's not motivating for the employees to test the same thing every month") at times "when you don't actually want to work". The digital testers don't just cope with an enormous volume of work – they free mental bandwidth of their human colleagues for more complex and interesting tasks.

Servicetrace Test Automation – Benefits

- **No code solution:** intuitive creation of test cases
- **Precise, error-free, and fast functionality tests** from the user's perspective
- **High test coverage**
- Regular all-inclusive **system integration** and **acceptance tests**
- **High employee satisfaction** by automating tedious routines
- **Re-use of automation workflows for 24/7 end user experience monitoring** of IT operations
- **Close cooperation** between software development QA, and IT operations

Glossary

Function test/feature test checks technical requirements: "Does the software meet all the specifications noted in the specification sheet?"

Performance tests check site-specific response times for individual transactions under expected and extreme load conditions. "How long does it take to log in to the CRM?"

Regression tests check for possible side effects and subsequent errors after changes have been made. "Are there any new errors with the new version?"

System integration tests check for compatibility with all applications in the overall productive system: "Does the software integrate seamlessly into the live environment?"