The Journey of Digital Transformation
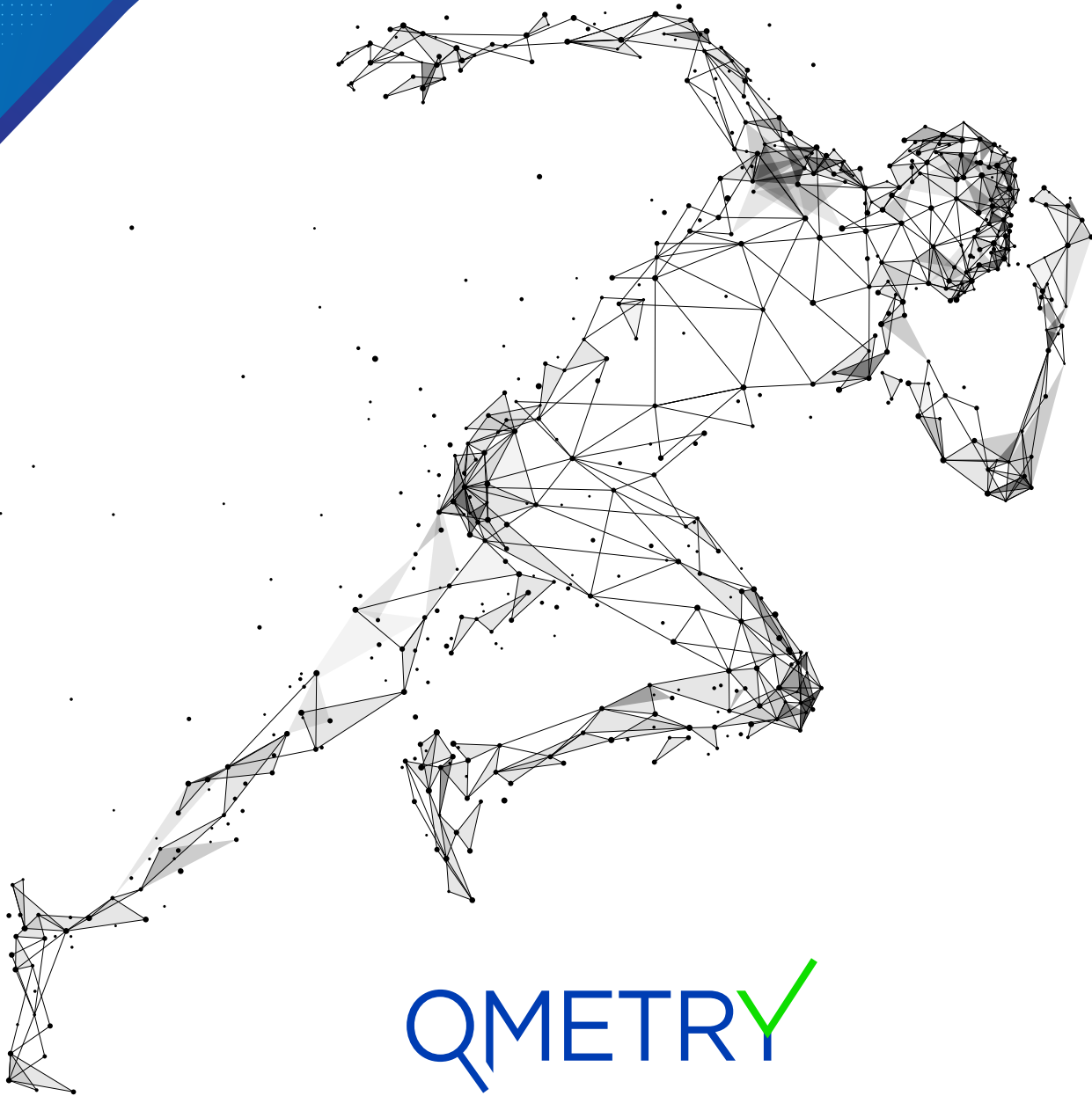
QMETRY

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Digital Transformation

Just a couple of decades ago, businesses were highly reliant on paper to document and record. When computers became mainstream, businesses switched to spreadsheets. Similarly, it's now virtually impossible to find a business that doesn't employ some sort of cloud-based SaaS product to keep track of their records (or any other business process).

According to **Gartner**, digital business transformation stands for a

> " process of exploiting digital technologies to create a robust new digital business model

As follows from this digital transformation definition, the process is far more complex and important than simply converting your information and processes from an analogue format to a digital one and moving it to the cloud. Business modernization, i.e. switching from on-premises legacy systems to the cloud, represents one of the most crucial and complex digital transformation processes.

Digital Transformation requires an organization to undergo Technological as well as Organizational Changes to deliver the best value and customer experiences. However, many organizations are trapped with old and legacy systems that pose many difficulties in the transformation.

This means rethinking everything you do, both internally and externally, by adopting new technologies to provide a better customer experience as well as streamlining your internal performance.

The future belongs to organizations with Intelligent Operations: Those that use diverse data that is led by business intelligence and innovation to drive the next-generation, real-time decision making, exceptional customer experiences and path-breaking business outcomes.

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What does it mean for the Banking sector?

The key challenge for the banking sector is to manage the security and sanity of transactions while managing the exponential growth in consumer data. There is a high demand for convenience, operational scalability and on–demand feature updates and these are seen as important parameters for organizations to succeed.

Yet, the digital transformation of larger organizations like banks is atypical. The modern consumer expects direct and instant engagement from any service. He/She is used to seamless experiences and speed across products and services. They expect the same responsiveness while banking.

But fintech continues to transform and disrupt at a pace that is difficult to match. With the emergence of new tech like AI and ML, blockchain, big data and digital payments — traditional processes are fast losing ground.
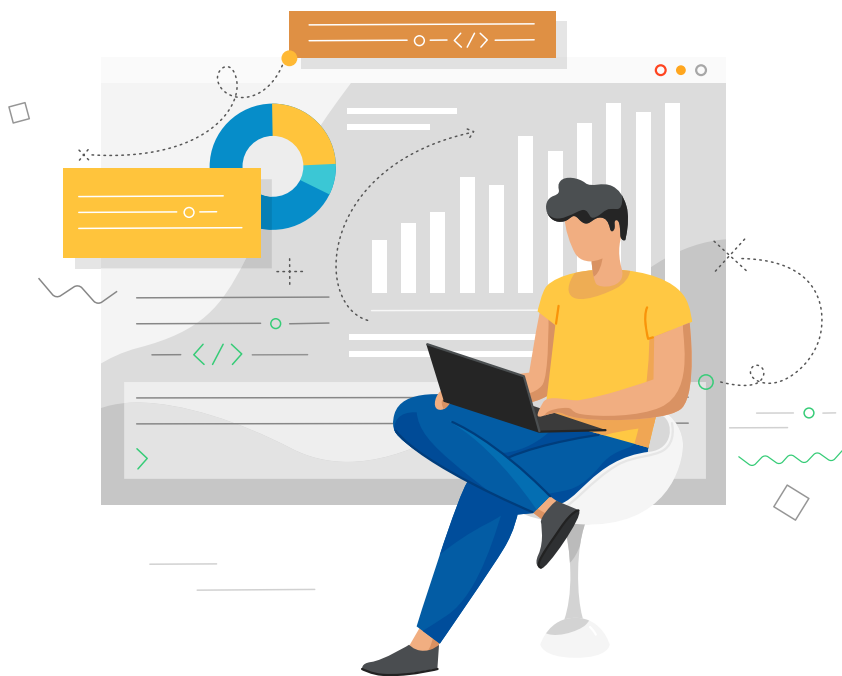
These are just some of the current realities of banking applications and software:

- Large scale of integration: Applications in BFSI integrate with numerous other applications like bill pay, trading accounts and complex business workflows

- Multi–tier functionality to support thousands of concurrent user sessions

- Real–Time and Batch processing

- High rate of Transactions per seconds

- Security

- High need for reporting to keep track of transaction data

- Strong auditing to troubleshoot customer issues

It is a brave, new and complicated market — but one that promises opportunity if you deal your cards well.

It then becomes necessary for banks to provide flawless, continuous user experience across devices and channels. Customers expect speed and lack the patience to wait for releases that take months or a year. The days are long past when banks waited for 6 to 24 months to provide customers with upgrades or bug fixes. Customers now expect and seek out the new, new features and frequent updates with continuous quality experience.

This paradigm of "High Quality with Speed" has made banks realize that all the pieces in delivering the solution to customers need to move quicker, be available faster without compromising the ideal of the perfect high–quality product or service.

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Role of Continuous Testing

And yet, developing high-quality, secure bank apps that meet the modern consumer's expectations at various touchpoints takes a great deal of complex planning and execution. Testing, quality assurance and test management play a critical role in building these applications that stand true on the test of speed, security and customer expectations.

However, for many large banks, testing is an outsourced function, or it is spread across globally distributed teams. Not all QA teams within the organization use the same set of tools and frameworks for project management, test automation, continuous integration etc. In short, there is a lack of standardization, communication, visibility and collaboration.

In addition, with a large number of releases and updates, project managers deal with vast amounts of test data. Not surprisingly, to break the silos and make test management more open and efficient, many organizations are adopting the DevOps methodology. DevOps breaks this wall between development, testing and operations.

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It improves collaboration in agile teams and encourages them to come of out of these silos. DevOps and Agile methodologies hold the promise for faster digital transformation and better time-to-market.

An important tenet of DevOps is that quality is everyone's responsibility. Since testing becomes a shared responsibility and covers all stages of development, it is no longer a task that starts and ends at a specific point. Under the DevOps practice, testing starts ideally right at the requirements gathering stage and is normally initiated at the development stage.

Three concepts revolving around this are:

CI/CD Automated
Pipeline

Agile
Development

Continuous
Testing
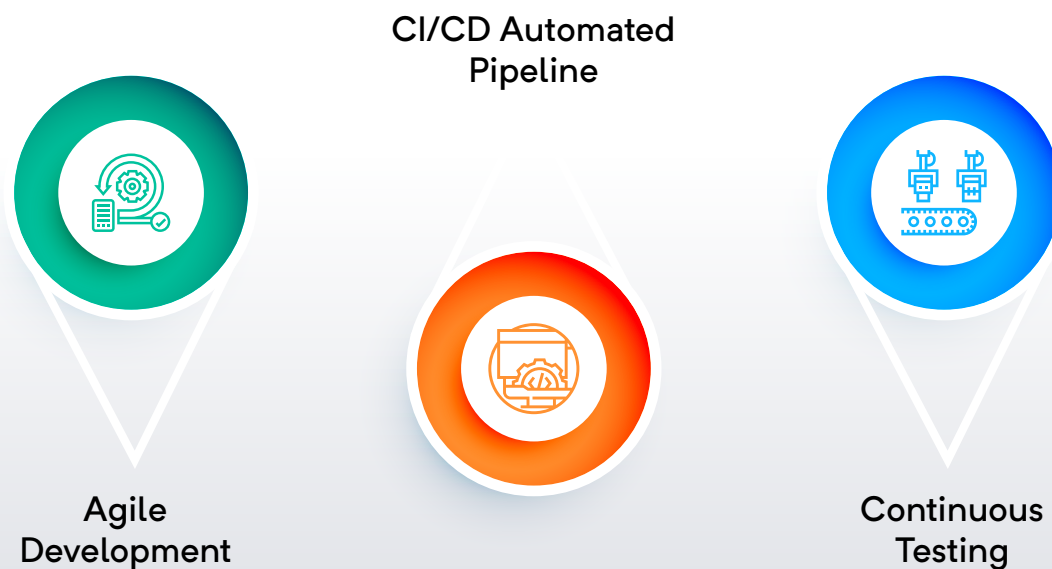
Agile Methodology for customer centric software development.
Early customer feedbacks enable faster changes. This ensures that the software is release ready sooner than late.

Set of Continuous Activities - Continuous Integration, Continuous Delivery & Continuous Deployment.
"Continuous Everything" allows automation and streamlining of process that increases the efficiency providing greater time and cost benefits in software delivery.

Continuous Testing for high quality with speed
And as these organizations increasingly adopt DevOps & continuous delivery, there is a need for end-to-end continuous testing.

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How can the Banking sector adopt Continuous Testing?

The computerization of banks began many decades ago mainly to adopt core banking systems.

As a result, banks and financial institutions find themselves chained to many applications and software that are no longer able to deliver scalability and the 24/7 availability demand of digital channels.

Further, in the process of adapting to Continuous Testing, many banks have acquired different applications and technology stacks in the absence of a common and consistent technology strategy. Some steps that banks can take to adopt continuous testing efficiently.

Consolidation of applications

The first step in their digital rehaul should be to review the set of applications that weren't developed or purchased with a consistent tech goal but were built to fulfil some isolated requirements. For instance, to execute a simple query like finding customer balance, several different functions were written.

Consolidation of applications helps reduce the time to market for new features. It will also reduce the cost of running multiple tool stacks and applications for day-to-day operations.

Loosely coupled architecture - required for digital transformation

In the banking sector, unfortunately, applications that sit in the background of websites, apps and other digital products are built long ago and are monolithic in principle.

To get up to the speed of digital, the banking sector needs to evolve to a loosely coupled architecture to benefit from distributed systems.

Loosely coupled architecture makes it possible to build high-quality software at speed. It increases resiliency and fault tolerance and enables systems that scale easily when the user-base in digital channels increases.

Increase in use of test automation

est automation is one of the most widely adopted software development trends that has significant quality and speed benefits.

Using automation, you can build better apps with lesser effort, in a shorter time. You can identify bugs earlier, run tests more often and improve your coverage.

With advances in technology and the adoption of test engineering approaches like Behavior-Driven Development and Test-Driven Development reduces time and manual testing efforts. It also allows teams to trace requirements to test cases and actual tests.

The automatic and repeatable test cases for the application in a regression test suite can facilitate rapid and frequent deployment of software in production.

Continuous integration and Continuous Deployment

Releasing high-quality, frequent updates and ensuring a seamless user experience across channels requires a continuous delivery pipeline.

This is done by automating the pipeline using automated scans that identify potential security issues or performance bottlenecks. By integrating these scans with automated test cases, you build software that is always release-ready.

An automated and accelerated release process leads to on-time and frequent product releases. This eliminates the possibility of system down-time and automates the production release process with little or no effort from development teams. But how can banks use their pre-existing systems to achieve auto-mation, CI/CD and faster go-to-market? The answer is: by implementing a platform that allows them to implement multiple integrations and increase their productivity.

To know more in detail about How an organization can implement Continuous Testing?, read the whitepaper on "The need for Continuous Testing in the DevOps era".

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Enable Continuous Testing with a
# Digital Quality Platform

Continuous Testing is essentially the process of testing early, testing often, testing comprehensively and using automation to achieve cohesive release goals. Digital Quality Platforms such as QMetry help teams achieve continuous testing by integrating with the CI/CD pipeline along with capturing and monitoring the test executions.

Empowering Teams with Compliance

Security and Audit compliance are critical for regulated enterprises. Hence, Test Management Tools should also ensure that they are equipped with features such as approval workflow, versioning, audit logs, etc. QMetry offers Approval workflow and auditing reports with eSignature to produce evidences that can be used for SOW and other Audit compliance. The eSignature feature helps organizations to regulate the Approval Workflow of test cases and test executions. To help QA teams align all their efforts to construct quality test cases, QMetry empowers the management to keep check on

the changes to a test case and how it can be integrated into test executions. This approval mechanism can also be viewed in form of report named "Approval Workflow Report". This report summarizes details on Test case approval & Test Execution approval for filters selected bases on Project, Release and Cycles. QA managers/Project Auditors use this report for audit reasons. In agile environment, multiple teams are working on same project to deliver the product of the highest quality quickly. Version history and Audit logs help teams and management to view who has changed what and how many versions were made for a particular asset. With QMetry, you can monitor the evolution of test cases and requirements through version control as well as Audit Logs.
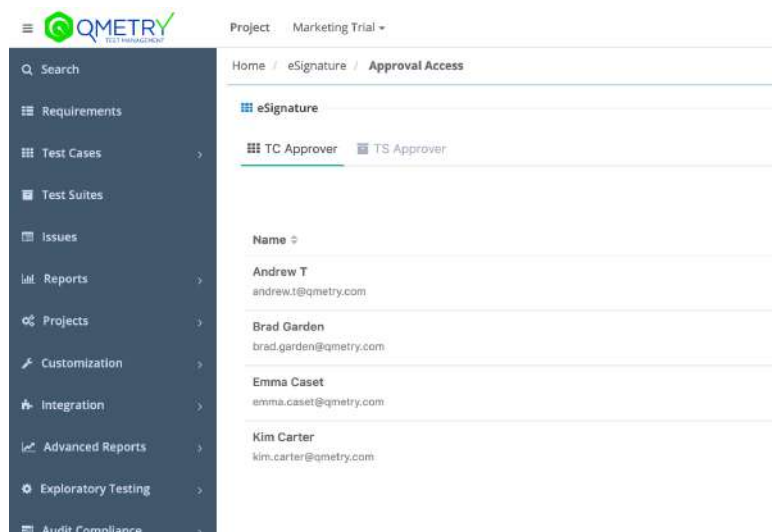
Support Agile

Based on the needs of an organization, QMetry's suite of test management products offers both SaaS and on-premise server-based solutions which ensure team collaboration along with shared ownership of quality for all team members. QMetry Test Management allows teams to define multiple platforms and their attributes along with linking these platforms to their designated test suites. This helps the team to capture and track executions on several platforms across the web and mobile simultaneously.
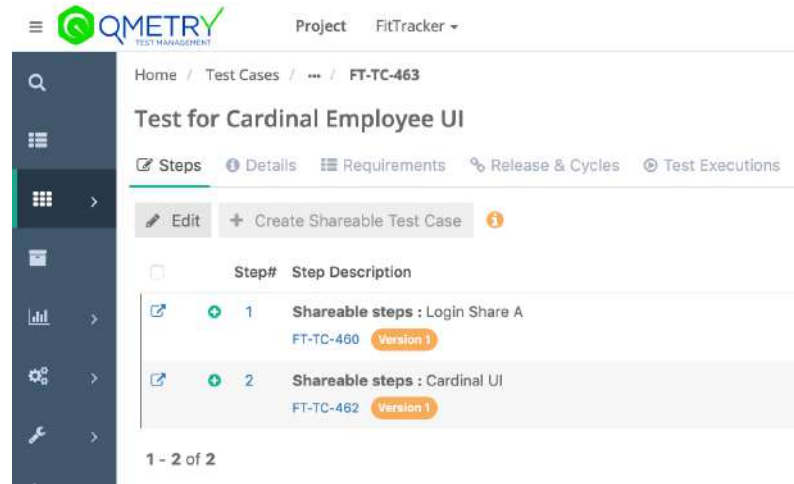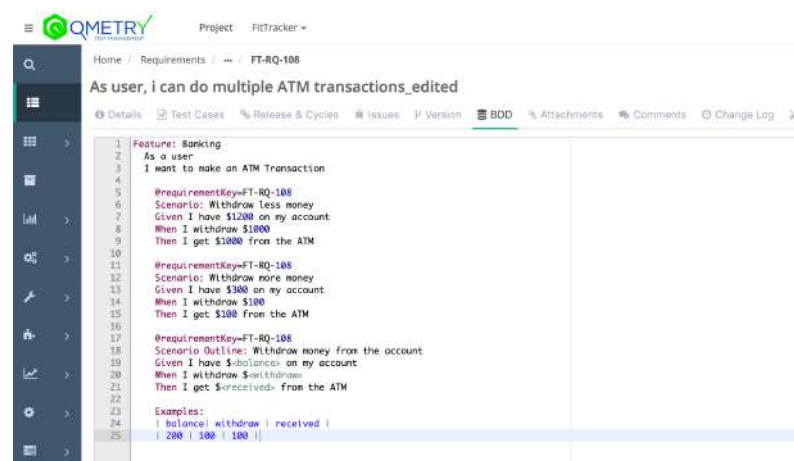

QMetry's Digital Quality Platform enables integration with source code repositories such as Bitbucket, SVN and more. As soon as the new code is committed by the developers, automated tests are performed thanks to this tight integration. These are then monitored in QMetry Test Management allowing the teams to view the feedback. This results in early resolution of defects. You can Shift Left in principle.

Test Automation

An important best practice in continuous testing is to have fully automated tests right from the design through production aiding the CI/CD environment. To achieve this, enterprise teams automate tests using Behavior-Driven Development (BDD). With QMetry, teams practicing BDD can author, store and sync features, files directly to/from Version Control Systems (VCS) like SVN, Git and Bitbucket, using the built-in Gherkin editor in QMetry requirements. The two-way

syncing between QMetry and version control systems keeps developers, testers and product owners up-to-date with the latest source code change commits with automated step definitions. Using QMetry automation agents, test executions can be triggered directly from QMetry. The Test Suite stores automation execution results ensuring complete feature traceability with requirements.
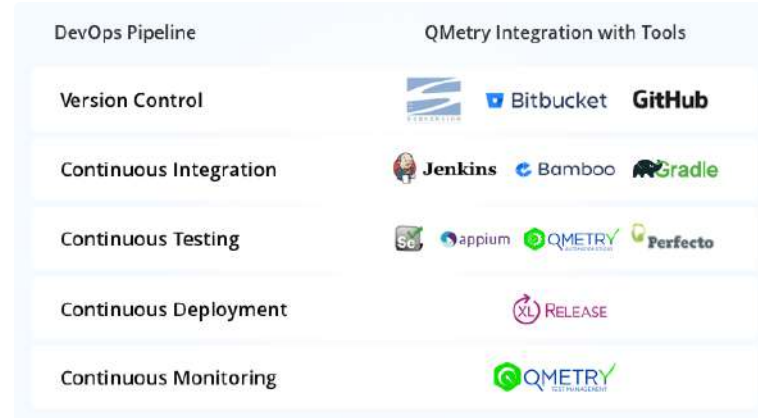
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Integrate In CI/CD Pipeline

The QMetry Digital Quality Platform is future–ready and offers seamless integration with different tools that form the part of the CI/CD orchestration. For instance,

- Importing/syncing user stories with Jira Integration
- Support for DevOps & Agile by providing integration for Jenkins, Bamboo, Maven, Gradle
- Integrate with Test Automation Framework tools such as Selenium, Appium, Sauce Labs, Perfecto
- Sync issues with Defects Management Tools such as Jira, Bugzilla, Mantis
- QMetry Open API to enhance the integration ecosystem via RESTful API

DevOps Pipeline	QMetry Integration with Tools		
Version Control	Subversion	Bitbucket	GitHub
Continuous Integration	Jenkins	Bamboo	Gradle
Continuous Testing	SL	appium	QMETRY Perfecto
Continuous Deployment	XL RELEASE		
Continuous Monitoring	QMETRY		

Feedback Loops

The success of Continuous Testing depends much on the efficiency of the feedback loops throughout the development and delivery cycle. QMetry Test Management provides extensive reports and analytics that are required by the different members of the agile teams. Actionable insights in the form of dashboards enable the management to have a bird's eye view of the testing and the product readiness. Some common report types in QMetry are:

- Requirement report shows the test coverage
- Issue Report shows issue analysis and trends
- Execution report shows execution per release cycle.
- Reusability Report is provided with the purpose of boosting the efficiency of the testing team with trace ability, reusability and visible linkages with other test assets.
- The Traceability Report provides the trail of Requirements – Test Cases – Issues.

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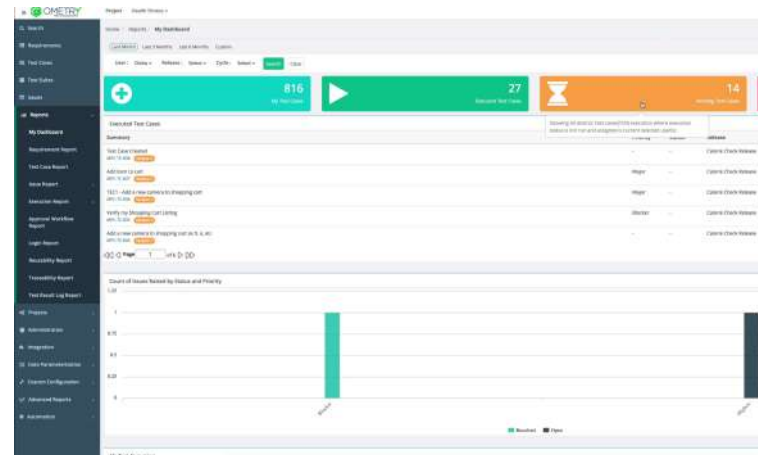
ABN AMRO's Journey to Continuous Testing

ABN AMRO Bank N.V. is a Global bank with their headquarters in Amsterdam. ABN AMRO is the third-largest bank in the Netherlands. ABN AMRO serves clients in the retail, private banking & corporate banking sectors with primary focus on Northern Europe and presence in Asia, Americas and Australia.

What were they looking for?

Continuous Testing

Looking for the Modern Test Management tool to support their continuous testing lifecycle

ALM Migration

Evaluating several tools to replace their existing HP/Micro Focus ALM

Digital Transformation

Search for contemporary tool that meet their challenges of digital transformation

Collaborative Platform

Collaborative platform for all teams to collaborate

Solution and Approach

QMetry provided a cloud-based hosting solution for their vast suite of test assets and diverse testing requirements. Digital transformation requires an organization to undergo TECHNOLOGICAL AS WELL AS PROCESS changes with the aim of delivering the best value to your customers and safeguarding their future.

QMetry is very well experienced with such digital transformation. Along with the test management tool implementation, QMetry also trained test engineers to understand this organizational change.

1 QMetry organized a Hackathon at the ABN AMRO headquarters in Amsterdam for their Agile teams wherein ABN AMRO invited their internal team members and participants from Capgemini, Infosys and TCS (who ware their quality partners).

2 More than 350 test engineers participated and based on their feedback, QMetry Test Management was selected as the top tool of choice.

3 QMetry reached out to Infosys and Capgemini as they were the main vendors providing software testing services for partnership.

4 Both the organizations responded positively and developed a strategic alliance with them. This validated QMetry's product and potential for digital quality assurance

5 There was a planned and smooth migration from existing ALM based solution to QMetry Test Management tool.

6 By the time, QMetry was launched at ABM Amro, their team members were already certified in QMetry and ready to get on board quickly.

Recommendations for implementing continuous testing for banks and financial institutions:

— **Get baselines:**
Start by creating baselines. Once you have your baselines, you will know what the biggest problem areas are and how to resolve them.

— **Don't get too ambitious:**
Instead of implementing continuous testing across the board, start small and identify a single product or group which you can use to adopt the practice and one that has room for some trial and error. Once you have implemented it successfully, the example will serve you across the business.

— **Automate at a lower level:**
Use the data collected to improve continuously. Use automation first where it will have the most benefit. Remove manual hand-offs and ultimately you will see the great benefits and improvement. Further, you can identify ideas for further automation.

— **Orchestrate the entire process:**
Businesses need to have the right infrastructure to provide environments quickly. Automation needs to happen at the API level and agile teams must be involved with testing. The selection of tool is important as they need to be developer friendly and enable orchestration of the full process.

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Conclusion

Typically, banks score well on the DevOps maturity scale for some of the more challenging aspects, culture, agility, architecture readiness and technical best practices. Operational stability is an important factor for banks to consider before they adopt any new approaches. Banks that have succeeded in adopting continuous delivery and the DevOps state of mind have used automated builds and tests results to drive meaningful insights into the status of their applications. By getting software quality status early and often, they can ensure the overall health and reliability of their systems, performing at the optimum level to deliver the best customer experiences. The areas in which banks need to focus more are to do with the adoption of the right tools, technology & processes. Banks are well placed for adopting the DevOps way of software delivery enabled by continuous testing.

How QMetry works with the banking sector to resolve its unique quality challenges?

- Achieve high level of transparency by maintaining all testing artefacts on single platform
- Ensure compliance through approval mechanism
- Increased visibility into product readiness
- High performance along with secured and stable solution
- Multiple, bi-directional integrations with DevOps tools like Jira or Jenkins
- Elimination of redundant tasks to decrease backlog

Find out how ABN AMRO replaced their ALM tool with QMetry Test Management to support their continuous testing lifecycle

Download our Case Study

Get Continuous Testing Consultation to understand how you can empower your Agile QA teams with Continuous Testing

Continuous Testing Consultation

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