Streamlining the Delivery of a Better Banking Experience

How performance testing and service virtualization unlocked speed and efficiencies from a new banking platform

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The Problem

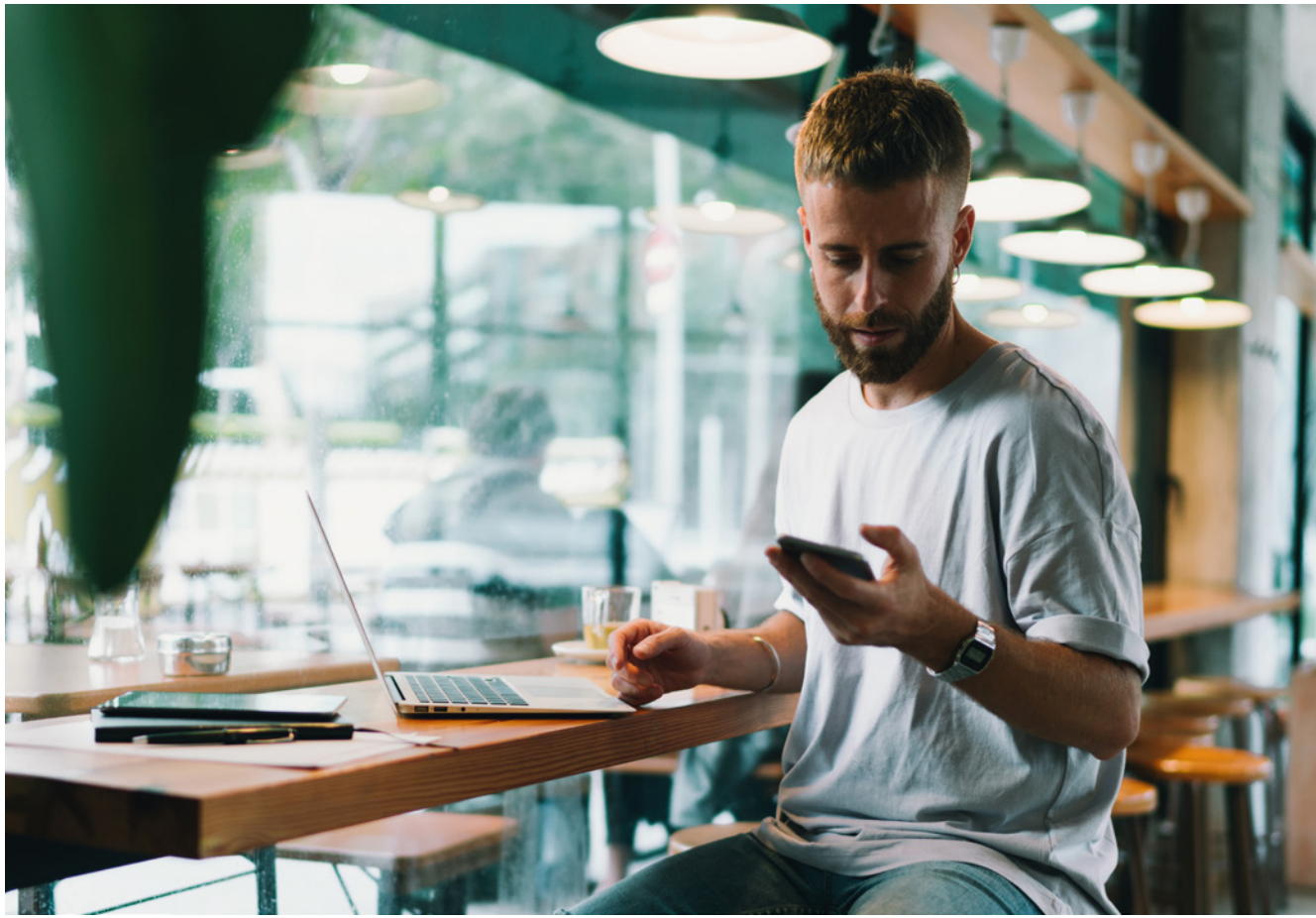
Today's customers expect more value, transparency, and control from their bank. Competition in the commercial banking sector is also intensifying, driven by new entrants and regulatory change, while growth and margins are declining.

This multinational banking and financial services company's dedication to delivering comprehensive services to its customers have enabled it to grow to become a top three largest bank by assets and market capitalisation. However, this pursuit of innovation and customer satisfaction has not been without a cost.

The bank's products, operations, and technology environments have grown over the years to be complex and sometimes difficult to manage. Realising a change was in order, the bank decided to differentiate its offerings and services based on its principles of improving the financial well-being of customers, and be supported by new non-banking services.

They also wanted to adopt a "mobile first, human supported" distribution model. This would be driven by digital touchpoints that would provide customers with more transparency and control.

Although the number of bricks-and-mortar branches would be reduced, in line with the overall trend in the banking sector to lower overheads from reduced number of walk-in customers, the remaining branches would retain teller staff to provide the human element necessary for complex interactions.



Key outcomes

- Comprehensive coverage of component testing across three key areas that directly impact customers.
- 26 services virtualized, included asynchronous streaming/ messaging layer.
- Integrated performance testing capability set up for six key customer journeys.
- Five high severity performance defects identified and solved.
- $500,000 in environment costs saved in performance testing through the use of service virtualisation
- $500,000 in in mainframe licenses, and core and legacy application connection costs through the use of service virtualisation.

Technologies

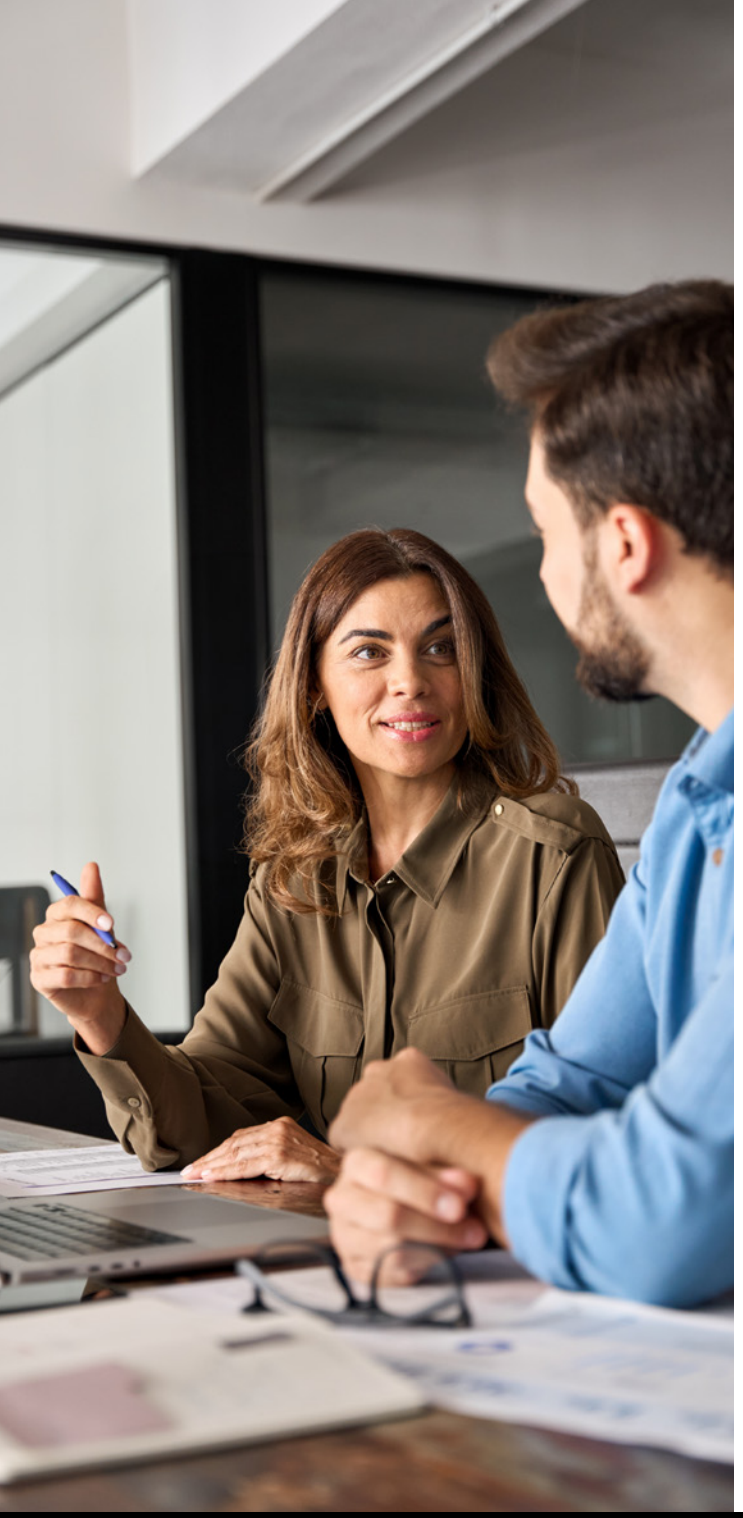
- Google Cloud
- Kubernetes
- GRPC services
- MuleSoft
- Salesforce
- Kafka

Delivered

- Performance Testing
- Service Virtualization
- Staff Augmentation

Tools

- K6
- Locust
- Influx DB
- Grafana
- Dynatrace
- Harness
- Github
- Github Actions
- Atlassian Jira



The solution

The bank selected Planit to deliver quality assurance for its new platform based on our expert knowledge and experience in building performance quality into the lifecycle of products and large programs of work. The reputation of our quality engineers, earned from successfully delivering projects for other customers, also enabled us to stand out from the competition.

Most competitors' solutions are built on testing performance late in the release cycle using non-developer friendly tools and solutions. The bank preferred Planit's approach for being congruous with the module and component-driven nature of their technology stack to capture performance related feedback of components early and continuously.

Our approach was also built on the tooling and frameworks being developer and change friendly, as well as being platform agnostic. To deliver the required level of quality for the new platform, we understood the importance of embedding performance into the software development lifecycle - the tools and frameworks would need to work properly with the technology stack and Cloud platform where services are deployed as containers.

To deliver upon the goals set for the new platform, a team of highly skilled technical engineers with the ability of quickly learn and adapt were carefully selected from Planit. They went on to:

- create a process to identify performance risks associated with new feature or change,
- define an approach to map performance risks to testing required at a component level and integrated level with integration boundaries defined,
- conduct performance testing at a component level,
- capture early performance feedback by embedded performance tests into the automated continuous integration (CI) process,
- and build a service virtualization solution to support component and compartmentalised integrated testing.

This approach was tailored based on the bank's team structures and specific processes for the new platform were developed. The key focus was on pushing the responsibility of capturing performance feedback early and regularly to the component teams.

We carried out component testing coverage across three focus areas that directly impact customers. 26 services were also virtualized, including the asynchronous streaming/messaging layer. The tooling and frameworks were also built to have less maintenance overhead and be easily adopted by existing and new developers.

Integrated performance testing was built on top for added peace of mind, with the expectation of only finding performance issues related to integration between the components under load. Integrated performance testing capability was also set up for six key customer journeys using the service virtualization framework to decouple testing from legacy systems.

Since the technology stack used for the platform was new, it meant existing toolsets did not support them out of the box. The large number of moving pieces, data dependencies across components and legacy systems, and event-driven nature of the architecture also created unprecedented patterns associated with measuring performance.

The use of containerised deployment in Kubernetes clusters on Google Cloud, including the performance testing workloads, came with its own learning curve. On top of this, there were environments with different code release frequencies for different components to contend with.

These technical hurdles had the risk of negatively affecting the delivery of the new platform if not properly managed. Our quality engineers continually assessed any risks they uncovered and identified the necessary work required to mitigate them, as well as regularly customising our solutions to closely measure and accurately visualise performance.

Outcome

Our contribution to the new banking platform enabled it to go-live successfully for its beta. We are currently helping the bank to further refine it so it can be launched with confidence to customers outside the bank.

We made this possible by customising our approach to work with the development and release lifecycles. We also clearly understood the requirements, vision, and end goal of the program, which enabled us to pivot quickly when needed, and customise our solutions and delivery approach along the way for best coverage and results.

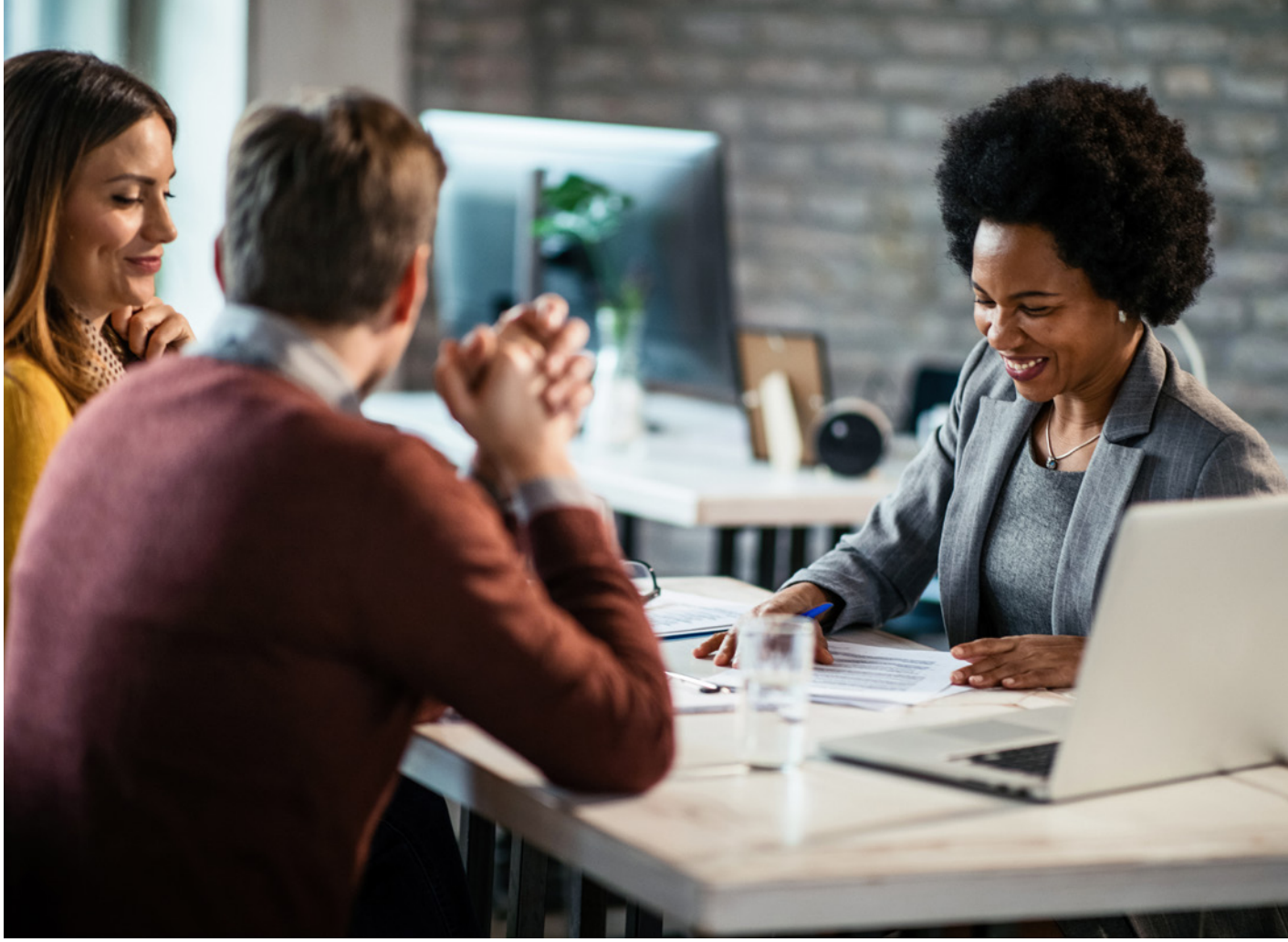
By doing component performance testing early in the development lifecycle, and mapping them to CI processes, we identified five high severity performance defects. If left unaddressed, these defects would have directly impacted key user journeys and potentially caused a loss of reputation to the bank.

Our streamlined approach to performance testing also saved the bank approximately half a million dollars that would have been used to set up an integrated environment.

All our solutions for the new platform were created using open source and Cloud technologies, so the bank benefited from no additional tooling costs.

Our services virtualization solution uses managed Cloud services, which require no platform maintenance. This saved the bank half a million dollars in procuring mainframe licenses to build the integrated environment, along with the cost of effort by multiple teams to build and connect existing core and the legacy application components.

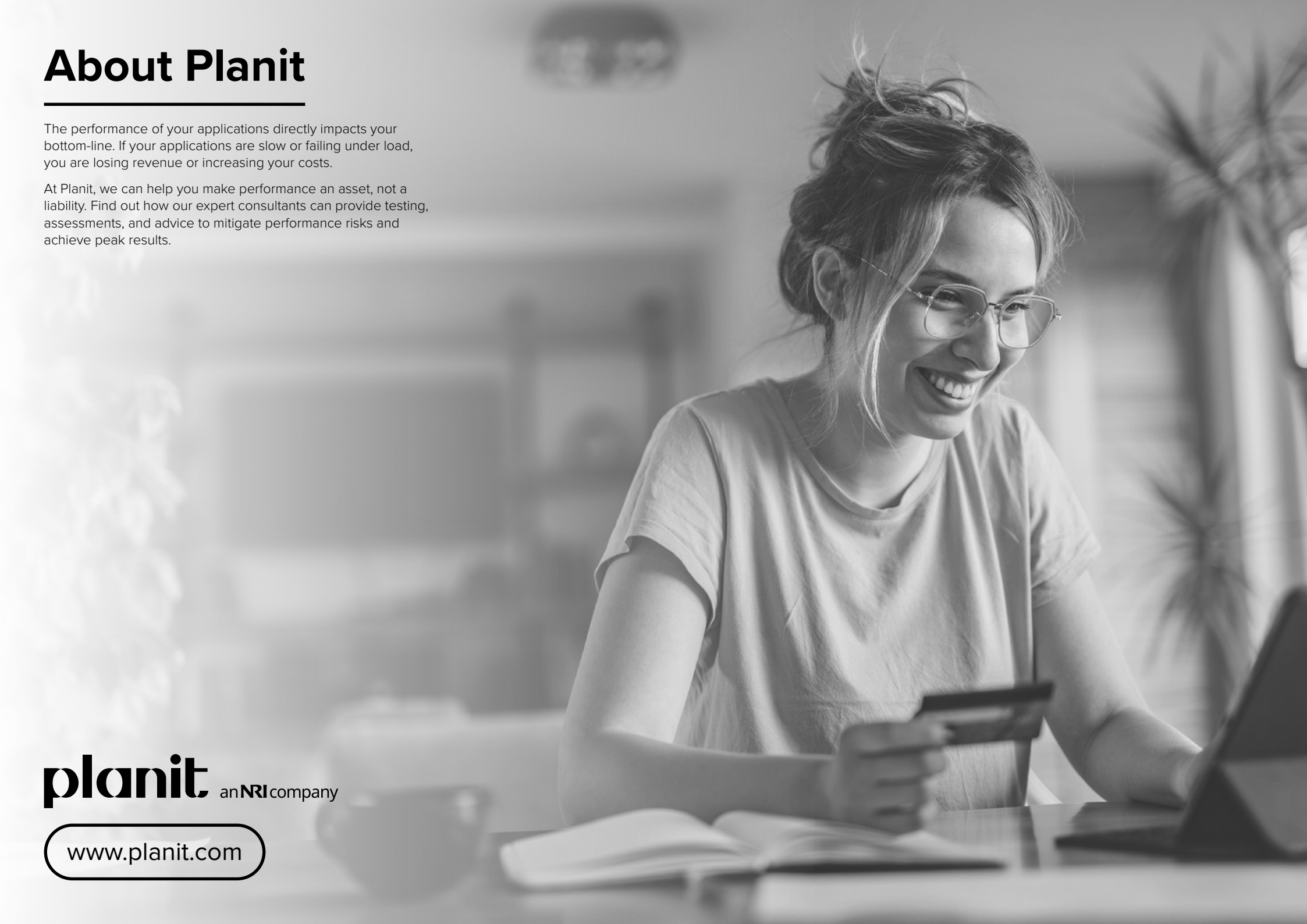
Thanks to our contribution, the bank is not only meeting its current goals, but also positioning it well for future expansion. The bank has been so impressed with the performance of the technology stack that the new platform has the potential to become the new digital and core banking setup not just for the commercial side of the bank, but across its entire operation.



About Planit

The performance of your applications directly impacts your bottom-line. If your applications are slow or failing under load, you are losing revenue or increasing your costs.

At Planit, we can help you make performance an asset, not a liability. Find out how our expert consultants can provide testing, assessments, and advice to mitigate performance risks and achieve peak results.



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