BUSINESS WHITE PAPER

Telephony Platform Migration Assurance

Recommendations & Best Practice

CYARA

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Assuring a Platform Migration: Considerations & Best practice

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This document outlines the recommended strategy and approach to assure a planned migration of a telephony platform. The recommendations are based on Cyara's wealth of experience supporting global enterprise customers who have gone through similar transformation programmes.

Platform migrations such as this come with expectations of delivering a better customer experience through new capabilities and services. However, a major migration project also comes with increased risk to the business from the high volume of change. A well planned and executed assurance programme is vital to ensure successful delivery of the expected business outcomes, meeting the planned timescales and ensuring a high quality experience for customers.

The document will detail:

- Some key considerations when it comes to assuring a telephony platform migration
- How you should approach assurance at each stage of the transformation process
- What Cyara products and services are needed at each stage
- The outcomes you should expect from CX automation at each stage

Introduction

Telephony platform migrations are driven by a number of factors. Typically, they are undertaken by organisations whose platform is reaching the end of its technology life. These organisations are much more likely to have loosely patched together infrastructure and applications and usually know less about how their current platform and Voice CX is performing. Typical reasons for performing a migration include:

- The existing platform is underperforming or becoming end of life
- There is a need for more functionality (e.g. new channels like chat)
- To provide a better experience to customers
- To optimise and rationalise the existing customer experience
- Moving from On-Premise to Cloud

The last point is a major factor for most organisations today and is considered an enabler for the other points mentioned above. The challenge this presents, however, is that Cloud is often considered a 'fix all' for a variety of business issues, however it necessitates ceding control of applications and architecture as well as requiring a large amount of interconnecting infrastructure that interact with multiple applications.

A common approach to cloud transformations is to perform a 'lift & shift'; moving the existing experience from On-premise to Cloud, optimising the experience and then adding new features. Cloud providers often talk about a 'lift & shift' being straightforward and so the expectation is that the testing effort is low. However, the reality is that the level of assurance required is as high as if major changes were being made to the customer experience at the same time. Not least due to the fact that this type of migration should be completely invisible to customers and the negative impact of a poor customer experience with no visible improvements is extremely high if not potentially catastrophic.

Where to Start

The first step in assuring any platform transformation is to baseline the existing experience, whether you know what the experience should look like or not. This is vital for identifying:

- What the actual Voice experience is today.
- How it actually performs.

To be able to build the right experience, first time around, developers require accurate documentation of the existing CX and testers need to have an accurate understanding of how it should perform to test against. If not, there is a high risk that errors in the design are not picked up until late in the process, requiring costly re-coding and re-testing at a critical time in the project.

So how should you approach this challenge using Cyara? The key question is, *how accurate do you think your documentation is?* This will then drive either of the following two actions:

"I believe my documentation is mostly accurate"

ACTIONS:

1. Create CX models based on the existing documentation
2. Run a complete test of the whole IVR to ensure reality matches the documentation
3. Raise defects against any failures on the existing platform or proceed with development with documented defects

"I don't believe my documentation is accurate"

ACTIONS:

1. Create CX Models of the existing IVR by crawling and comparing with any existing documentation
2. Run a complete test of the whole IVR as above
3. Raise defects against any failures on the existing platform or proceed with development with documented defects
4. **Note** - this approach will require significantly more time than if accurate documentation is available

OUTCOMES

1. Comprehensive and accurate documentation of the existing experience.
2. Confidence the platform being built is the one that has been designed.
3. A test library for the new platform is now pre-built.
4. Surety of how the existing platform performs for later comparison, i.e. evidence that 'it should have done X, Y, Z'.

PRODUCTS REQUIRED

Velocity Standard licence to map the existing experience with sufficient capacity to run a comprehensive test in the time required (depending on how fast this is needed and how many tests need to be run).

SERVICES REQUIRED

This requires at least 1-2 Cyara experts to complete these tasks so the services required are dependent on platform knowledge, time and resources available. The reality is that most organisations who have zero automation and experience of Cyara struggle to reach the level of expertise required in the time available given all the other activities to support a migration, limited resources and assurance typically being one of the last things to be considered.

If the Customer wants to perform all activities themselves:

- Velocity Fast Start Package - however, the expectation is this should be performed a minimum 6 months prior to 'starting' the migration to develop internal Cyara experts.

Recommended approach based on our experience:

- Embed expert resources (either Cyara or blended partner resources) to complete all required activities quickly, hand over completed test assets and train the Customer resources on the execution and maintenance of the test library.

During the Transformation

Functional Testing

Functional testing can take the form of a formal SIT, testing in Sprints as part of an Agile process or a combination of these two. Test automation should be baked into this process, both to speed up delivery and to ensure a high quality output. Many migrations suffer from insufficient levels of testing at this point meaning poor code quality going into UAT and even non-functional performance testing. This has the potential to have major time and cost impacts as defects are only picked up towards the end of the process.

It is common for System Integrators (SI) or consultancy partners to perform functional testing and deliver a final product ready for the organisation to perform their own UAT and end-to-end testing. Our experience is that this does not always result in a high quality delivery and can lack test evidence to provide confidence of the delivery quality. Whether the onus is on the partner or on the organisation to perform functional testing, it is vital to involve a high level of automation to increase the speed of testing and the quality. Using Cyara here has the added benefit of consistent reporting of test success/failure and ultimately ensures that the delivery partner is not left to 'mark their own homework'.

ACTIONS:

- Create campaigns to test specific modules or parts of the applications based on existing test libraries.
- Run test campaigns as part of sprint cycles or as a formal SIT.

OUTCOMES:

- Remove the risk of defects only being identified in UAT resulting in costly fix and retest cycles.
- Discover and resolve defects quicker and earlier in the development cycle.
- Accurate test evidence provides confidence to move to the next phase of the migration.

PRODUCTS REQUIRED

Velocity, with sufficient ports to execute testing in the time required based on length and complexity of the IVR

SERVICES REQUIRED

The professional services required are dependent on the level of Cyara expertise, resources available and internal accountability (i.e. is there someone who has responsibility and agency for managing the test process). The recommended approach would be for a Cyara embedded resource to continue to manage the testing process and provide additional resources to build and execute testing as needed and dependent on the circumstances.

UAT & End-to-End Testing

At the point in time that UAT and End-to-End testing should commence, the new platform should be in a stable, ready or near-ready state with full end-to-end test cases built and ready to execute. This often can be the responsibility of different teams, which needs to be taken into account when it comes to test execution as Cyara may be new to those teams requiring additional upskilling.

From a testing perspective, it is a continuation of activities from SIT but at a much larger scale to achieve a specified level of coverage, dependent on the approach, for example the appetite for risk. Some key considerations and points to note include:

- Development and Pre-Prod environments are typically unstable due to the volume of unstructured change being performed, for example, continual bug fixes and releases of new code. The impact is that it can be very easy to lose days, or even weeks, of testing time as well as the need to redo testing due to environments or parts of the environment not working as expected. So there is a need to do regular testing of the environment to be able to then execute end-to-end tests.
- Load testing is often considered a rubber stamp but for large scale transformations, basic load testing should begin in this period on key parts of the architecture, for example, to test throughput of APIs to ensure they are working at scale.
- It is vital to ensure that calls are routed post-IVR to the correct queues and agent groups. To test at scale as part of end-to-end testing should use Virtual Agents for a complete journey test. Even with complete automation of complex IVR testing, a major impediment is then standing up real agents or employees acting as agents to perform a complete end-to-end test and it cannot achieve the scale required.

ACTIONS:

- Create a regression suite using Velocity as a smoke test for structured change or bug fixes before running large volumes of tests.
- Use Pulse to run continuous testing on some core journeys to ensure that the platform is up and working and collect data over a period of time on the platform performance.
- Run small scale load tests on key parts of the architecture.

OUTCOMES:

- Running regular Pulse campaigns will show patterns of behaviour of the new platform.
- De-risk overall migration through thorough and broad testing.
- Have hard data to be able to make informed go/no-go decisions.
- More efficient testing by not losing time (and cost) through knowing when you can perform UAT.
- Confidence the platform will deliver the right experience by testing at scale (10s of thousands of tests rather than hundreds).
- It creates the basis for your production monitoring suite to take into live.
- De-risk the large scale load testing & buy now not buy twice.
- De-risk the chance of having to redo UAT by load testing uncovering major issues.
- Removes the need for standing up agents or other internal employees.

PRODUCTS REQUIRED:

- Pulse - likely need dual running meaning a burst in capacity over the migration.
- Velocity - additional capacity over UAT & upgrade to premium.
- Cruncher Unlimited Subscription - large enough to test what they need but small enough to be valuable.

SERVICES REQUIRED:

- A continuation of the approach described for SIT utilising embedded Cyara resources to execute and manage the testing including creating test cases, dashboards and alerting with Pulse in preparation for monitoring in production.
- Additional training is highly likely to be required for other teams, for example Operations and Contact Centre Management, to be able to interpret the reporting and alerting from Pulse to be able to act on those alerts.

Non-functional testing

It is vital to perform performance testing to ensure the platform will operate as designed under stress. Often this is seen as unnecessary by cloud providers as, by definition, cloud platforms should easily scale to support increased capacity. However, in reality, there are many different components and applications interacting with each other that require load and stress testing to ensure a major business event does not break part of the infrastructure.

Best practice requires that performance testing should be done on a production-ready platform post-UAT. In many examples we see, platforms are not sufficiently tested or stable before running performance testing meaning they fail to deliver the desired outcomes, for example, falling over on a relatively low call load, necessitating costly defect fixing and retests.

There are a number of important considerations to consider:

- A careful selection of key journeys should take place and you should plan to load test the journeys that hit the key parts of the platform.
- It is important to consider, not just peak design load but also peak expected load and give a strong consideration of throughput, which is often overlooked.
- Create test cases that ensure you understand the platform capabilities in relation to the core pattern of customers so that, should part of the infrastructure fails, you can quickly identify the bottleneck. For example, if calls disconnect before hitting a queue customers will typically redial straight away and the IVR itself could be quickly overwhelmed. The bottleneck can then be put into regular monitoring tests.

- Plan for multiple load tests at or around the smoke test level and gradually increase load by increments 25%, 50% and 100% load as key milestones so that you are not just testing concurrency of calls.
- Plan for additional optional tests for fail-over of different parts of infrastructure.
- Consider a soak test for an extended period to look for different issues, for example a memory leak that continues to spiral over time.

OUTCOMES:

- Confidence the platform won't fail under stress.
- Knowledge of how your platform will perform under stress.
- Know where bottlenecks occur and points of failure that dramatically impact the CX.
- Identify major defects before the customer will experience them.

PRODUCTS REQUIRED:

- Cruncher
- Transactional load tests over specified period (typically one month) up to the max specified port concurrency.

SERVICES REQUIRED:

Cyara would manage and deliver the load testing as part of our standard professional services wrap for a transactional load test.

During the Deployment

The deployment can be done in a couple of ways. A phased approach is a common way organisations look to manage risk but require a much higher overhead as you would have dual running platforms plus the additional routing logic in place which needs rigorous regression and additional monitoring. The alternative is to deploy everything in one go which can add risk but removes the cost and effort associated with a phased approach. A well planned and executed assurance programme will have a huge impact on mitigating this risk and enable an informed business decision of what approach to take.

ACTIONS:

- All necessary monitoring journeys are set up along with alerting and reporting to the right people. The right data will need to be reported to the appropriate personas, for example, creating different dashboards for senior management than operations.
- Run a smoke test on key journeys to ensure they are working correctly, and the results are returned quickly.
- Perform a full regression test in production as you may be hooking into production APIs, servers, etc for the first time so that you ensure everything is working on the number the customer phones in on.
- Have a clear understanding of the milestones to move to the next stage of the deployment using Cyara to measure the success of each step through increasingly granular tests and specific benchmarks. For example, having a 99% success rate on the regression test.
- Plan to do a triage load test in case there are problems to run if necessary to quantify the scale of a problem found through regression.

NOTE:

The regression pack has to be appropriate to the time window within the deployment but comprehensive enough to provide necessary confidence, i.e., it cannot take 5+ hours to run. It requires the right capacity for the minimum level of regression that is appropriate based on the risk appetite.

Post-deployment

During and immediately after the deployment of a new platform is a time of high anxiety for the business driven by the fear of things going wrong. For many large organisations this could result in being front page news. Following the recommendations outlined above will result in comprehensive assurance of the new platform, reducing the risk of post-deployment problems. However, good planning necessitates being prepared for any problems and having the right information to act accordingly.

There are some further recommendations to consider:

- It is important to 'tune' monitoring test cases to ensure there are no false negatives and to enhance reporting to spot patterns more easily and that there are no unnecessary alerts ("noise") creating anxiety and low confidence.
- Schedule a review within two weeks of go-live to look at the types of issues that are being identified.
- Ensure you have a regression suite ready to run in the event you must deploy hot-fixes or changes quickly, which should be an extension or replication of what has been performed previously.
- Run regular regression tests to ensure these are up to date, at least monthly as part of BAU to ensure the tests themselves are not broken.

PRODUCTS REQUIRED:

- Velocity
- Sufficient port capacity for regular functional and regression testing.
- Pulse
- Sufficient port capacity for ongoing monitoring as described above.
- Premium licences
- Cruncher subscription

Summary

In summary, telephony platform migrations are large, costly and complex projects which come with a high degree of risk of a very damaging, negative impact on the customer experience. Having a well planned and comprehensive assurance plan is vital to both mitigating this risk but also to ensure the project completes on time and within budget. Automation is critical to achieving the scale, accuracy and speed required.

The scale and pace of testing required to deliver the desired business outcomes from such a project (improved CX, efficiencies from Cloud, etc) put a huge amount of pressure on resources within an organisation, even if they already have the automation skills and knowledge. For organisations who have little automated CX assurance capabilities, attempting to become self-sufficient with automated assurance with all the other activities going on within a transformation programme can be extremely demanding, if not impossible. This is where Cyara Professional Services can act as an accelerator in automating the whole assurance process as well as relieving pressure on internal resources and de-risking the whole project.

The expected outcomes at the end of the project will be:

- Maintaining the highest quality customer experience throughout and beyond the migration.
- Removing the risk of business impacting failures from the migration itself.
- Mitigate the risk from delays to the project.
- Everything in place (internal skills, software, test libraries and processes) for best-in-class assurance of the new platform.
- Accelerate the business from being a CX Assurance Beginner to a CX Assurance Leader.

VELOCITY
Functional & Regression Testing

BOTIUM
Chatbot Testing & Assurance

CRUNCHER
Performance Testing

PULSE
Customer Experience Monitoring

RESOLVE AX
Agent Experience Assurance

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As the world's leading Automated CX Assurance platform provider, Cyara helps you deliver better CX with less effort, cost, and risk. Cyara supports the entire CX software development lifecycle, ensuring enterprises can build flawless customer journeys across digital and voice channels while reducing the risk of customer-facing defects. Every day, the most recognizable brands trust Cyara to help them build better customer experiences faster.

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