



Prodapt Chase
Extraordinary

**Deliver high-quality entertainment services
at high speed and with flawless quality**

Credits

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The pandemic has been the time of record highs for video consumption

The key success factor for DSPs lies in providing high quality and faster rollout of video services

There is a **rapid growth in different combination of digital devices and form factors** where videos can be streamed



Connected home device penetration among U.S. households
- ComScore OTT state report 2020



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Challenges faced by DSPs in providing video services

Ensuring compatibility across multiple platforms & form factors

This includes a broad range of **device types** with different flavors of **operating systems**, **browsers**, and **network connectivity**.

Software deployment frequency is constantly under pressure due to increasing customer demands

According to Gartner, **80% of organizations** expect to compete majorly on customer experience (CX). To do so, businesses cannot afford to wait for several months to release new features into the hands of ever-demanding customers.

DSPs need to focus on **end-to-end (E2E) compatibility testing** and **cycle time reduction**.



To rollout video services, the combination of testing that DSPs need to do is humongous. But the market demands these services **just-in-time**. Delivering this with high quality needs **extensive testing**, which is challenging to achieve using the traditional manual approach.

This mandates DSPs to technically upgrade their way of working, the testing process, and existing release platforms.

Key enablers to ensure a seamless rollout of video services

Customer Critical Service Indexing (CCSI)

Provide clear mapping of video services with dependent features, backend components, and corresponding test scenarios to cover E2E system integration flow.

CI/CD Framework & Release Cadence Continuous Monitoring and Prediction Platform

Integrate CCSI in CI/CD framework for faster automated testing and rollout of video services.

Automate continuous runs to get real-time insights and alerts across test cycles. Also, predict the stability and behavior of upcoming releases before releasing in production.

In this insight, we deep dive into each of the **3 key enablers**. Successfully implementing these enablers empowers DSPs to rollout video streaming services with **flawless quality** and **faster time to market**.

Customer Critical Service Indexing (CCSI) orchestrator

Map video services with dependent features, backend components, and corresponding test scenarios

1 2 3

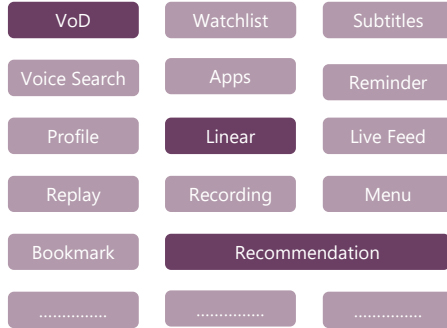
The traditional approach considers testing video services as a **black box** without peering into its flow, internal structures, or workings. This leads to:

Lack of visibility into changed **components** and corresponding test cases

Higher time-to-market as tester needs to execute entire regression suite

Difficult to trace the root cause of failure - No visibility into which individual component is failing if a particular service failed

Services critical to customers



Building CCSI enables DSPs to map critical services with the backend components and test scenarios to cover E2E system integration flow

	Group dependent features	Identify test scenarios	Build regression test suite for each scenario	Map backend components
VoD	TVoD SVoD Trailer playback	<ul style="list-style-type: none"> Play movie from watchlist Play from continue watching Thumbnails or drag and drop 	<ul style="list-style-type: none"> TC – 1X2YXXZ TC – 1X2YXXZ TC – 1X2YXXZ 	<ul style="list-style-type: none"> Purchase/buy Bookmark Video storage platform
Linear	Metadata Channel tuning Review buffer	<ul style="list-style-type: none"> Verify the channel line up EPG validation Verify event information 	<ul style="list-style-type: none"> TC – 2X2YXXZ TC – 2X2YXXZ TC – 2X2YXXZ 	<ul style="list-style-type: none"> Video storage platform CDN
Recommendation	Linear Recording VoD	<ul style="list-style-type: none"> Play horror movie and verify the recommendation Play linear comedy channel and verify the recommendation 	<ul style="list-style-type: none"> TC – 2X2YXXZ TC – 2X2YXXZ TC – 2X2YXXZ 	<ul style="list-style-type: none"> Recommendation CDN Video storage platform
...				

Recommendations

Ensure reusability across digital devices

Complete CCSI mapping would comprise 1000+ test scenarios. To ensure reusability across different digital devices it's crucial to build generic test scenarios that are device agnostic.

Ensure flexibility in traversing

Ensure the CCSI mapping enables traversing from features to components and vice versa.

CCSI provides **clear visibility** into changed components, that enables faster **test execution** and **Root Cause Analysis(RCA)** of any failure. This can enable DSPs to achieve **3X acceleration** in time to roll out video services.

CI/CD framework & release cadence – Integrate with CCSI orchestrator for faster automated testing and rollout of video services

1 2 3

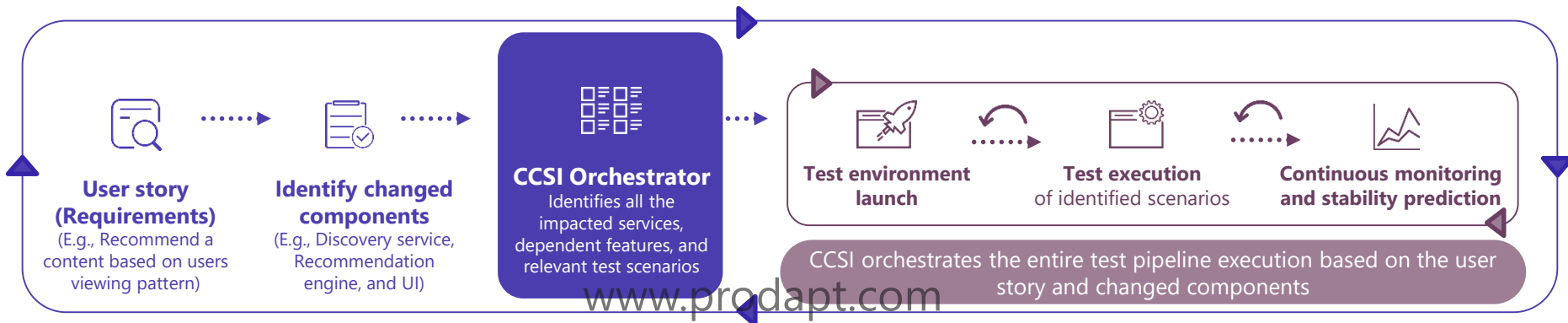


Fig: CI/CD framework and release cadence integrated with CCSI to orchestrate E2E test execution

Recommendations

Use CPE Firmware Management Tool to remotely configure test environment setup

- Once the release is available, engineers can remotely upgrade/downgrade devices, thereby ensuring **zero-latency** and **zero-dependency**.
- This can be made available with simple UI (easy drop-down selection capturing details like ID, owner, location, user, environment, and product type).

Automate test suite execution using a keyword-driven approach

- Execute test cases using Robot framework where keywords can be quickly edited and further configured. Also, benefits to write the test cases in a user-friendly approach. E.g., I PRESS MENU
- Speed up test execution using parallel executor. (E.g., Use Pabot in Robot framework)

Use RedRat to wakeup set-top box/devices remotely

from stand by mode. This avoids any manual intervention.

Setup continuous monitoring platform for proactive management of KPIs driving customer experience

Video experience testing is a continuous process, which cannot be claimed to be perfect by testing one feature in one attempt. This requires DSPs to run test cases in a continuous loop to analyse the stability of the current release.

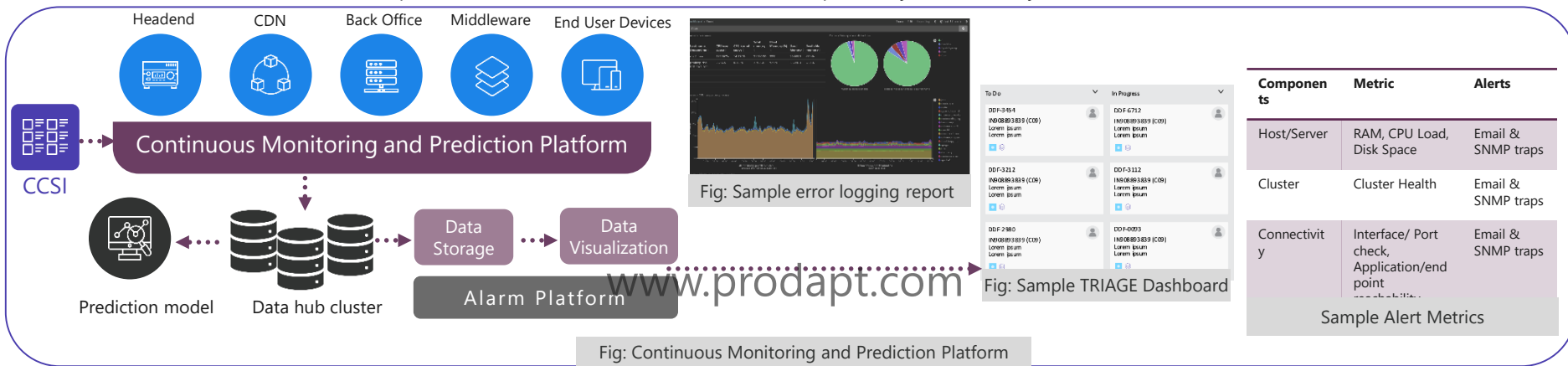


Fig: Continuous Monitoring and Prediction Platform

Recommendations

Integrate CCSI with monitoring platform to fast-track RCA of any failure

With this, the triage dashboard not only shows which test case has failed but also why it has failed. This is feasible with the clear mapping of components in CCSI and automating the following steps:

- Trace back the request through the components involved and gather the status
- Track down the component, where the flow breaks causing the feature to stop working

Create alert mechanism

Provide a mechanism to configure critical cases. Such test cases if failed should trigger ALARMS to the respective team.

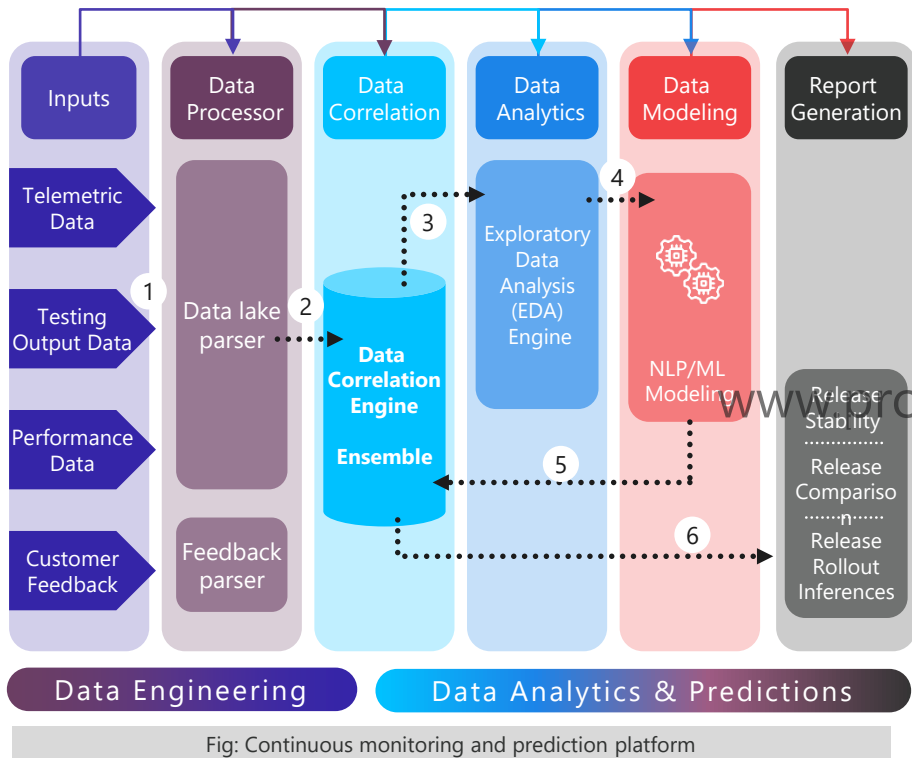
Build prediction model to understand platform stability

It is crucial to predict the stability and behavior of each release prior to rollout. This ensures that the customer experience is not deterred.

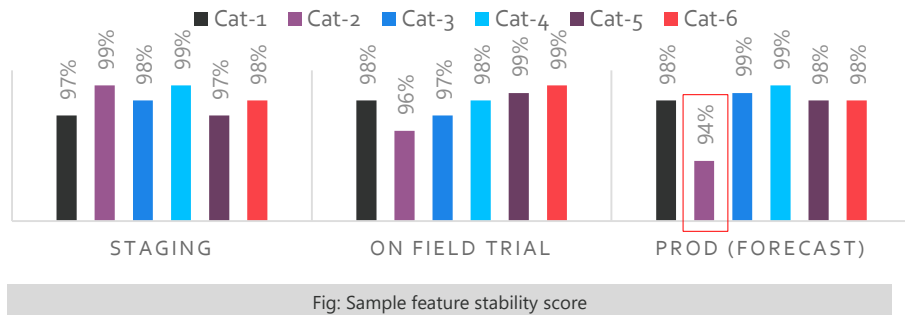
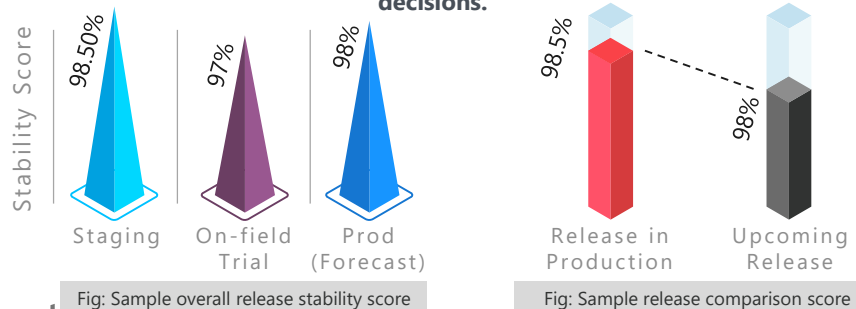
Reduces the Turn Around Time (TAT) to fix critical issues by **40%**

Also, drastically reduces the overall backlog of failed test cases with faster resolution.

Use ML models to predict release stability and behavior of services when rolled out



Release managers can analyze the stability and behavior of the upcoming release, compare with release in production and make judicious G0/No-Go decisions.



Having insights-rich information on predicted behavior enables the execution of timely decisions. This ensures better product stability, resulting in higher customer satisfaction.

Results achieved by a leading DSP in Europe by leveraging key enablers mentioned in this insight

Business Challenge

The DSP sought to build a unified digital back-office platform to support its next-generation media services delivery catering to multiple affiliates across the pan-European region. For this, it required a robust framework to automate E2E compatibility testing to deliver a consistent user experience across multiple platforms and form factors.

Benefits Achieved



Achieved
3X
acceleration in
time to roll out
video services.

Parallel execution
achieved with multiple
devices & software/
firmware version.



Reduced the
Turn Around
Time (TAT)
to fix critical
issues by

40%



Regression
and sanity
automation
using CCSI
reduced
testing effort
by

82%



Predicting release
stability using ML
models enabled the
DSP to take
corrective action
ahead of rollout,
thereby avoiding
any impact on
customer experience

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THANK YOU!

