TAVANT

# HOW DO YOU ENSURE STREAMING QUALITY?

## Why Streaming and Quality Engineering Go Hand-in-Hand

If you have recently ditched any of your streaming services because you finished binge-watching a specific show, your trial period expired, or your customer experience was marred by video or audio quality issues - you have a lot of company.

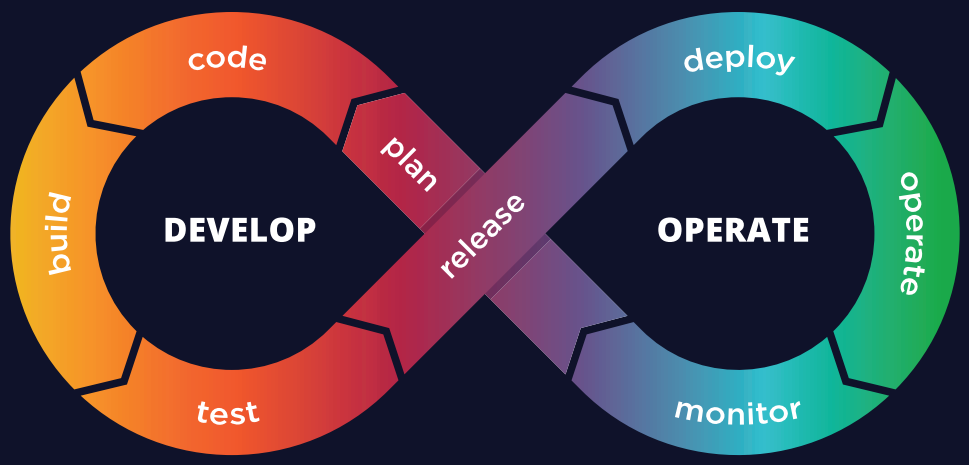
In its 16th annual Digital Media Trends Survey, Deloitte finds that subscription video on-demand (SVOD) services suffer from an unhealthy turnover rate among subscribers. The rate is even higher among Millennials and Generation Z, so-called digital natives who grew up with email, smartphones, and Netflix, and who have high expectations for a digital content experience.

"In the United States, the average churn rate ... [is] at about 37% across all paid SVOD services," notes Kevin Westcott, vice chair, Deloitte LLP and U.S. technology, media, and telecom leader.

We'll leave it to business leaders to solve the problems of binge-watching and trial subscription offers. But technology can address program and ad quality issues in ways that can directly cut your churn rates in half.

The key to ensuring quality across multiple content types, and multiple devices for content consumption, is an automation framework for streaming quality engineering (QE) that enables a "dual shift" approach – combining test planning, design and creation with an operational focus, monitoring quality across content and device types in real time.

TAVANT




**Shift left**
Ensures software meets design

**Shift right**
Ensures performance, resilience, reliability

*A dual shirt approach to quality engineering ensures your software will meet your design specifications, while operational emphasis ensures performance and reliability.*

TAVANT

# The FIRE Testing Framework

The framework used by Tavant to enable the "dual shift" approach is called the FIRE Framework. This proprietary system and process allows media clients to accommodate content-centric testing needs across mobile, linear, and web-based platforms.

### The FIRE framework also offers users:

- Non-functional, load, and endurance testing
- Capacity planning and monitoring
- A robust set of APIs for tool-agnostic testing and integration with other QE systems
- A rich set of analytics tools that use the data produced through FIRE to drive cognitive analysis


*The FIRE testing framework allows users to plan and execute testing across web, mobile, NFR, and API dimensions while enabling analysis on the health of any dimension*

# TAVANT

This framework was developed by Tavant through our work with video quality engineering at one of the leading business news channels in the U.S. Starting in 2012, this blended team was tasked with designing and creating a framework that:

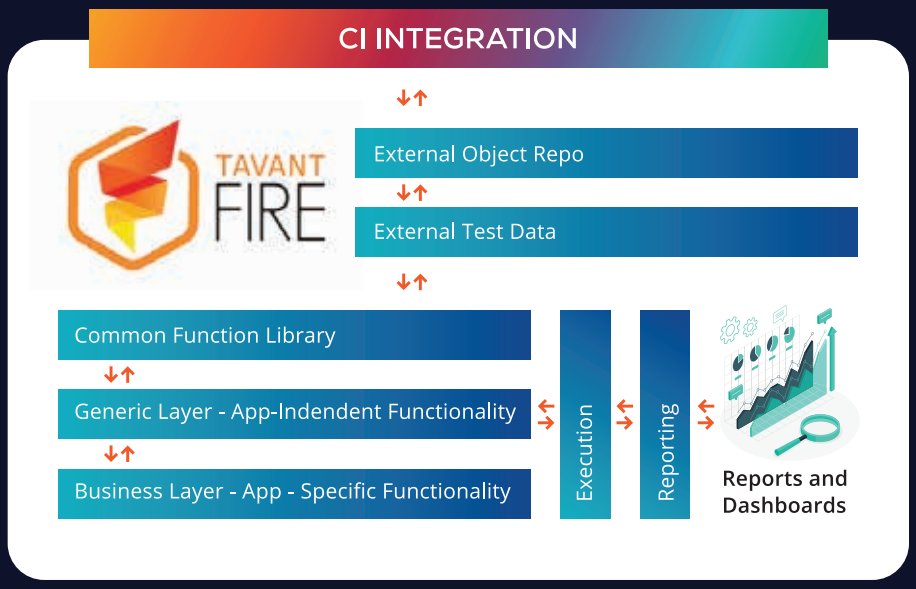
- Optimizes release turnaround time for new applications
- Is platform independent and extensible
- Has device testing capability as well as simulation capability
- Facilitates automated application build promotion
- Has network proxy capabilities
- Provides actionable and timely reports

The framework is designed to enable test execution from any location, with UI, API, mobile, web, and native application testing capabilities. Cloud-enabled, FIRE can easily be integrated with other cloud-based tools in your ecosystem.

The modularized approach to functional libraries results in capabilities that can be reused and repurposed for many needs. Multiple testing functions may be run in parallel. The system supports BDD, has a plug-in for CI/CD enablement, and is easy to maintain through a modular, reusable library approach. Reporting capabilities enable real-time monitoring of vital operational functions and alerts that allow staff to address issues as quickly as possible.

**INTEGRATIONS**

- With Testing Management Systems
- With Defect Tracking Systems
- With Slack
- With the Cloud




*The FIRE framework makes integrations with defect tracking and testing management systems a breeze. FIRE integrates with Slack and is cloud-enabled. Common function libraries simplify the development of core testing functionality, while business layers make client-specific functions trackable and testable. Reporting modules enable the creation of executive dashboards.*

# TAVANT


*Sample report from the FIRE test automation framework.*

TAVANT


# Success Story: A Leading Business News Channel

Tavant began developing quality engineering capabilities at a leading business cable news network in 2012. Since then, the FIRE framework has allowed technical staff to automate and operationalize video and audio testing across content types and consumption devices.

One of the first challenges Tavant addressed was the automation of test routines that could enable an Agile, sprint-based approach to QE, allowing users to go beyond "after the fact" testing to a real-time approach.

This automation focus also reduces regression execution time, reduces regression cycles through better management capabilities, and creates a predictable cadence for everyday release testing.

The team uses performance metrics to improve the functional value of support services. Other metrics are now used in tech-design sessions, promoting the "testability" of new functions. FIRE increases collaboration between testers and operational staff when apps are managed and/or debugged.

The testing framework has also promoted a new level of governance for all related testing functions. Dashboards showing test execution results and product "health" at any time enable action to overcome quality issues. The client and Tavant created a formal testing review and audit process. Test failure alerts are now done in real-time.

TAVANT

**Rest-assured based data driven tests**
**Parallel test execution**
**API performance metrics reporting**

- CMS API
- GraphQL
- cAPI
- Image Service
- Bedrock
- Search Service
- API Test Automation

**Selenium based POM tests**
**Selenium grid test execution**
**CI/CD support**

- Web
- Carbon
- PCM
- VideoMAN
- Web Test Automation

**Appium based tests**
**Selenium grid with custom device farm**
**Intelligent test selection logic**

- iOS App/Web
- Android App/Web
- Mobile Test Automation

**Custom-made OTT drivers**
**Customized device farm**
**Proxy supported analytics validation**

- Roku
- Apple TV
- Fire TV
- Android TV
- OTT Test Automation

*Testing encompasses OTT Test Automation, Mobile Test Automation, API Test Automation, and Web Test Automation.*

TAVANT

The testing program has been so successful at this business news channel that the client expanded the scope of Tavant's responsibilities to include multiple news organizations (and even their leading morning show). Within one year alone, the budget for FIRE-enabled testing has almost doubled, showing the immediate benefits of FIRE.

## Engagement Models for Quality Engineering

Tavant engages with its clients on quality engineering engagements in several ways:

- Project-based engagements deliver QE capability in a "time and materials," timesheet-based fashion
- Resource-based engagements offer Tavant QE employees, working either onsite or offshore, as testing resources
- DevOps engagements, where a Tavant team manages pushing new applications into development, can often include QE services
- Custom development engagements should always include a robust testing component
- Testing capabilities may also be required when new partners or systems are brought into a client ecosystem

TAVANT

## The Tavant Edge

We'd love to start a conversation on offering video and audio quality engineering services to your organization. We think the value of our FIRE testing framework becomes obvious to new clients within days of its implementation.

We can easily arrange a demo of what we are currently doing at the leading business news channel, and let you see the various technical components that go into the FIRE architecture.

If you have any questions about Tavant's capabilities in quality engineering, or the FIRE framework, please contact us at **hello@tavant.com**


AUTHOR

**Charles Olson**
Director – Media
Tavant