WHY COMPANIES MUST RELOAD to win in the hypercompetitive video market
Companies can no longer rely on customers’ loyalty. Customers untethered from lengthy contracts are willing to move frequently between different services to find what they want. They are evaluating their options non-stop. To address this behavior, service providers need to constantly deliver more resonant, engaging, high-performing experiences that reaffirm the distinctive value of their brands and persuade customers to stick with them.
It’s obvious (and smart) for digital products service providers to focus on price and a compelling content catalogue. But if content is King, then reliability is the Prime Minister – and may actually impact the entertainment economy more profoundly than previously considered. Research shows that customers rate a reliable service as the most important factor in determining the trust they place in an OTT service.¹

Outages, failed streams, app crashes, random error codes – in short, anything that “stops working well” – creates almost instant customer frustration and erodes the value of the service’s brand. Our analysis of negative app store reviews for OTT video services shows that errors are among the leading reasons that prompt users to leave negative comments. Errors accounted for more than three times the next most cited category, value (for price), which 14 percent of reviewers mentioned.

**Errors accounted for 46% of negative OTT video service reviews**

Only seven percent of reviews highlighted a lack of new features as an issue. Additionally, as viewers increasingly use these services to consume live events like sports, the impact of any service interruption or degradation is magnified; anything that breaks the live action flow fundamentally damages the experience.

As companies launch, operate, innovate and scale new video products, we’re seeing a gap emerge between what customers want and expect from OTT services and what they are actually getting. This vexation often travels quickly to the heart of an operator’s business, leading to non-productive friction amongst and between product management, marketing, development, and operations teams.

To understand where we are now, it’s useful to step back and consider how traditional video businesses worked – since it is away from these that the broader video industry is evolving. A traditional video business typically relied on a marketing organization to drive a campaign to persuade customers to subscribe to video bundles that involved multi-year contracts. Traditional video products were largely static, relying on long vendor roadmaps, and were bound to a “box” of some kind. This physical dependence, and the commercial bundling with other services (phone, internet, etc), made changing providers inconvenient. Plus, the services were generally reliable when it came to the core viewing experience, since all the components of the service – including the video network – were under the provider’s control. Furthermore, back-end services were provided by a limited number of industrialized vendor solutions and moved slowly through long validation cycles and certification processes. These factors allowed traditional operations groups to set up highly redundant solutions, with robust monitoring, and very clear playbooks covering all performance scenarios. That’s not how things work anymore.
The new reality is very different. Marketing organizations must have a robust set of tools enable them to focus on customer acquisition and retention strategies that are unique to OTT video services. Furthermore, they must constantly monitor social media and be ready to respond to anything that could impact their brand. Product organizations also have a much larger role. In a world where new competitors are entering the market every day and trying to “peel off” customers with increasingly discrete segments, it is critical to invest in the features that will make the largest impact. The role of product organizations is further complicated by the fact that they are now becoming parts of a much more complicated ecosystem. They need to take into consideration Alexa, Google Home, Roku, Apple, etc. to ensure they are positioning their product to leverage across all important intersecting technologies.

Quality of experience (reliability, performance) still matters a lot – despite device proliferation and the fact that IP video products run predominantly on unmanaged networks. There are ever more devices from more vendors, and different ways to connect and consume content in the home and on the move. These factors materially limit a service provider’s ability to consistently catch and handle interruptions in the viewer experience. But there is still more to contend with, such as the fact that back-end services are typically custom built and stitch together multiple vendor products at various levels of maturity. Despite constantly expanding complexity, the pressure to innovate and differentiate through features is rising faster – forcing providers into a delicate balancing act between innovation and industrialization.

So how do you win in a market that demands constant delightful evolution, but will not forgive the natural destabilizing consequences of constant change? We have discovered there are three key pillars that are separating the winners from the rest:

**ANALYTICS**
Investment in advanced analytics that model: customers’ experience, marketing campaigns, feature value, and product value. Decisions are informed by data and organizations are accountable and rewarded for meeting metrics that drive value.

**ARCHITECTURE**
Transition to a cloud-native architecture that is modular and enables distributed and rapid feature delivery and enhancement. Rely on proven architecture patterns that deliver resilience and scale.

**OPERATING MODEL**
Creation of a culture of innovation and continuous improvement that eliminates product, development, marketing and operations silos.
Analytics: if you can’t measure it, you can’t improve it

There is no disagreement about analytics and the critical role it plays in the new hypercompetitive video market. However, in many cases there is a lot of confusion about where to focus and how to execute. Consequently, many companies have realized only limited value from investing in analytics capabilities. So how do winning companies approach analytics to deliver business value? We have found four main themes to a winning approach:

01 Treat data as a first-class citizen
02 Build interdisciplinary analytics pods
03 Focus on business challenges and opportunities
04 Drive action from insights

Treat data as a first-class citizen

One of the benefits of an OTT video product is the extensive set of data that companies can collect. Customers generate thousands of data elements every time they interact with an OTT video product. This can be both a blessing and a curse, as maintaining the instrumentation, data collection and data analysis infrastructure 24 hours a day 7 days a week is very challenging. In many cases, since it is perceived that this does not directly impact the customer, it is treated as a second-class citizen and issues are often ignored or take a long time to fix. This leads to data quality issues and limits the value that companies can realize. It is essential to make data collection a priority, treat issues as critical production matters and use proven solutions to minimize cost.

Build interdisciplinary analytics pods

How this flood of data is handled is a major indicator of how successful the video product will be. A typical approach that we see today creates data silos where operations will collect performance information to monitor operational issues, the product team will focus on navigational patterns and feature use to understand how customers are discovering content, and the marketing team will collect campaign funnel data to understand conversion rates. While all of these are important, they fall short of delivering the actionable insights that will support innovation required to deliver market-leading products that delight and engage customers.
To achieve a high level of analytics maturity and gain competitive market advantage requires the right data models, applying the right algorithms, and, most important, presenting the output in an easy to consume format. This can only be achieved through a combination of different skillsets that includes the technical ability to collect the right data, the data modelling and data science to create the optimal model and the platform savvy to understand the implications of the analytic outputs. By creating these multidisciplinary analytics ‘pods’, video platforms can move beyond discrete analysis of operational or product issues and instead arrive at an integrated view that illuminates the user experience and, above all, highlights opportunities to improve it.

Companies that are able to translate the billions of events that they are collecting into analytical models that represent customer behavior, platform stability, content value, and predict customer behavior are reaping the rewards and leading the pack. These companies are using insights to inform their investments and priorities. They understand that to win they must minimize wasted money and, even more important, wasted time. They don’t stop at measuring velocity of delivery. They go to the next level of measuring the velocity of value they are delivering to the business.

**Figure 1:** Finding Velocity of Value
Focus on business challenges and opportunities

Achieving and sustaining consumers’ desired level of relevance will require a data-driven framework that understands what individual customers want, customizes products and services accordingly, and operates with a continuous feedback loop.

Being early to this party is critical. Not only will customers be willing to pay a premium for this type of relationship but, once in it, they won’t want to leave. Done right, this approach creates an upwards spiral where the seamless exchange of customer insights and information continually tightens the customer/provider bond.

OTT video providers that can scale this approach and use this as a base for their multi-revenue strategy will be prepared to meet the future, drive increased loyalty, reduce turnover and expand market share.
Drive action from insights

Becoming data-driven does not diminish the importance of human input and action. Far from it. Analytics will expose areas of opportunity for improvement, but it won’t necessarily provide instructions on how to innovate solutions to take advantage of the opportunity. Analytics will reveal that there are people having problems discovering content and potentially what they are attempting to do, but it won’t suggest a solution. Innovation therefore requires a combination of analytics insights and human ingenuity. Leading companies use analytics as a key input to inform where they allocate their resources and how they set their priorities.

Treating data as a first-class citizen, building an interdisciplinary team, focusing on business challenges/opportunities and driving value from insights will establish a core foundation for the business and become a core enabler for the operating model.

Architecting for a quality video service: microservices and cloud

Delivering a reliable service to the user underpins the quality of the customer experience. In a largely device-agnostic service framework, that “reliability of service” means that the customer’s app—on whatever device they elect to use—is working according to reasonable (but rising) expectations. The app is constantly available, loads quickly, search results are returned rapidly, videos start without delay, channels change quickly, customers are swiftly authenticated and transactions are processed smoothly. The architecture characteristics demonstrated by leading companies include:

01 Modular cloud native architecture
02 Fine-grained monitoring and control
03 Scalability and resilience
04 Speed to market with incremental releases
05 Managing the unmanaged network
Modular cloud native architecture

In the same way that the product of a restaurant is a dining ‘experience’, which relies on an orchestrated set of human services (host services, attendant services, bussing services, cooking services, dishwashing services, etc), application services are assembled by the app to create a “digital video service experience.” To extend the analogy: what happens if there is insufficient attendant or kitchen staff resources at a restaurant? The service may be too slow, or the food may be cold or visitors may begin to line up impatiently at the entrance. In short, the product, which is an experience, will suffer. The same applies to apps. In a modern microservices framework, a device application is a specifically structured expression of platform services, designed to enable a set of experiences for the end customer. That experience is the “product”. A modern, cloud-native microservices framework can be rapidly scaled up to keep up with demand.

Figure 2: Basic microservice architecture with API Gateway

- Integration Latency (backend response)
- Overall Latency
- Cache Performance
- Alarming
- Triggered Remediation (self healing)
- Bypass or Gracefully Degrade
Fine-grained monitoring and control

Microservices enable more fine-grained monitoring and allow for detailed breakdown and control of how the solution is performing. Particularly in a modern cloud deployment, this affords better, targeted control over the services powering the apps. That can have a profound impact on an app’s scalability and resilience, because the services can be throttled up and down, or even temporarily disabled, without a cascading impact across the application.

For example, demand for content is event driven, with show premieres or sporting matches creating high and unpredictable spikes in volumes. When these occur, service and content access requests—with associated authentication service responses—can spike by orders of magnitude above typical volumes. Here, a microservice architecture has significant advantages. If the service requests can be managed by scaling the discrete services required to authenticate user access, the process can be done efficiently and at lower cost to the service provider—since no massive multi-service scaling of resources is needed.

In the case of monolithic applications, with complex embedded service interactions, this may be nearly impossible.

Scalability and resilience

Despite the strong scale and resiliency arguments for microservices, it’s also important to apply common sense to minimize the very real danger of “transactional inflation” that can result from architectural decisions made, academically, for all the right reasons. Ironically, one of the detracting qualities of a microservice architecture is that an overzealous adoption of the ‘service autonomy’ principal can create snowballing complexity, which can materially impede scaling performance. Take, for instance, a service call which requires the retrieval of a variety of customer data points, and that this service effectively “orchestrates” a handful of discrete back-end microservices, each accessing a discrete data source. At volume, this type of “orchestration” has a tremendous multiplying impact on platform performance (resource use, network load, etc). If many services are designed in this way the effect increases. This is “transactional inflation” and it results in higher operating costs and high complexity.

There are ways to rein in this dynamic, while retaining the general benefits of the microservice architecture:

01 If a set of orchestrated microservices always perform the same function, make them a single service

02 Always seek to cache non-volatile data

03 Run background processes to refresh cache on changing data elements (e.g. customer bookmarks)
This practical approach will dramatically simplify the service architecture, and reduce run-time resource burdens — improving speed, and scalability — without threatening resiliency.

**Speed to market with incremental releases**

User experience is, of course, about more than reliability. Users expect a steady stream of new features which increase convenience, immersion and enjoyment. Here, too, the microservice architecture offers significant advantages.

Once a product team defines a use case for a new feature, developers can focus on instantiating the new or augmented services, in isolation from other platform services, even those which may be “orchestrated” to enable specific user experiences within the application. This is because, as long as new or altered services adhere to an agreed pattern (best achieved by applying standard API design patterns, and an API “design-first” methodology), and respect existing integrations contracts (easily confirmed through regression tests), there is little functional risk to the consuming application.

Ultimately, this means developers can pursue new features, without worrying that they will “break” applications by causing havoc in the underlying services layer. This means higher velocity, lower cost, lower risk, delivering more new experiences more frequently.

**Managing the unmanaged network**

Today’s customers demand high-quality video content across a variety of networks, video technologies and devices. The reality is that OTT video services come with no performance guarantees and face growing competition for bandwidth on unmanaged networks. This can result in bad customer experience and product abandonment.

Since companies can’t manage and guarantee the experience, it is important to identify when a user is having issues and present them with clear communication that explains in simple, non-technical language what is occurring.

An optimized experience in an unmanaged and multi-device environment demands the ability to provide customers with a constant flow of tailored and engaging communication about the ecosystem, how it is self-adapting and healing as problems occur. The secret is to help customers understand what is going on behind the scenes, in a friendly and collaborative way, without leaving them unattended.
The ideal solution combines three key items:

01 **Intuitive and natural conversations** via enhanced application design and messaging that can inform, guide and collaborate (particularly during extraordinary situations).

02 **Network monitoring KPI's** that help tune algorithms through an approach of rewards and penalties, continuously learning how different situations impact performance when steering the customer to the most suitable path, content source or mitigation scenario.

03 **Decreased distance** to content by pre-caching it at the edge of the network, close to the mobile device, or sometimes at the company’s own device, in anticipation of customer demand.

Each customer is unique, they require personalized content and experience things in different ways. Constantly communicating and keeping them informed with friendly and easy to understand messages throughout the experience journey will help companies to understand them better and, at the same time, will help service providers manage the unmanaged network.

Architecting for the best OTT video experience represents a fundamental rethink of traditional ways to do business. The new businesses are dynamic, and the legacy architectures and systems integration techniques no longer achieve what’s needed. A lightweight, resilient, decoupled, API-driven, open architecture enables agility for the new supply and demand routine, personalizing services and experiences across devices, applications and unmanaged networks.

### Talent and operating model

Analytics and modern architectures are both essential to enable companies to deliver the quality of digital video experience customers expect. But both are just a foundation for the right talent and operating model. To operate with greater agility and deliver at speed, video companies need to adopt the same approach that characterizes the platform and data-centric models deployed by the digital natives. This requires new governance, incentive models and ways of working that dismantle the current siloes of product, engineering and operations—and in their place create cross-functional, integrated and collaborative teams. To achieve high performance, leading companies have implemented these talent and operating model strategies:

01 **Break down organizational siloes**

02 **Focus on growing new skills and talent**

03 **Establish aligned incentives and accountability**
BREAK DOWN ORGANIZATIONAL SILOES
A traditional hierarchy with lines of reporting contained within functional divisions will prevent the organization from being able to deliver in the integrated way that’s needed. Migrating to an Agile development methodology and DevSecOps is not possible without fundamental change to the operating model.

Getting this model right is key, but making the change required is far from easy. It requires a hard look at both the existing framework and the mindset, approaches and culture that it supports. A few things to think about upfront? How to integrate delivery and operations teams; the ability to create healthy tension between product and engineering to drive the business’ roadmap; and how to put the right people into the right roles and define how they will work together.

FOCUS ON GROWING NEW SKILLS AND TALENT
Working effectively in this new world requires distinctly new skills and capabilities.

While we tend still to see traditional video companies recruiting for roles such as systems and integration engineers, their digital counterparts are focused on a very different profile. They are looking for talent that is future-focused, data-oriented and displays strong decision-making.

The workforce of the future looks very different from today. Technology and business advisors will need to better understand how to use the immense volume of data available to drive decision-making and to “teach” machines. New roles are and will be created.

Acquiring the skills for the future requires challenging the current legacy organization entrenched mindsets to pivot to what matters—a delightful customer experience.

ESTABLISH ALIGNED INCENTIVES AND ACCOUNTABILITY
The existing workforce will need considerable support to embrace these new roles and ways of working. That means continued coaching, often by placing new resources within experienced teams to help demonstrate how they can operate differently. This is not a project with an end date, it’s a never-ending journey that requires conscious and continuous planning, commitment and proper execution. That’s a piece of the puzzle that is often overlooked, but is fundamental to success.

Constructive feedback, incentive models, and appraisals are also essential to reinforce the new behaviors and mindsets that will support operating in the New.

Organizations that succeed at launching and evolving digital products and platforms share some common attributes. There is a lot to get right in order to pivot towards an operating model and workforce that will build market leading digital products.
Characteristics of success in the New

By breaking down traditional silos, successful businesses can drive end-to-end product ownership and reconcile feuds between organizations. They reassess their talent needs for the emerging world – allocating it optimally – plus create incentives that drive new behaviors. Thus, they are able to develop the skills required to win. And they achieve this by fundamentally changing the culture to move towards an agile, data-driven organization and operating model. They measure the value of product outcomes and against how they align to desired business outcomes.
Rewriting the playbook

With major market disruption in video accelerating every day, what companies do over the next 12 months will determine their ability to compete and win in the future. Winning companies will be the first ones to rewrite the playbook. The old model of operating a video business no longer holds as consumer expectations continue to be molded by every digital interaction and new competitors emerge, battling for a share of consumers’ wallets and time. To succeed in the New, leading video providers will need to consistently evolve a services that are architected to deliver scale and resilience at speed, optimize the use of analytics to meet consumer and business needs and nurture an organization and culture of innovation and continuous improvement. All three elements are critical for success.

The prioritization, execution and coordination of these three elements is not a trivial matter. It requires a well-defined vision, holistic perspective and intense focus to get it right.
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