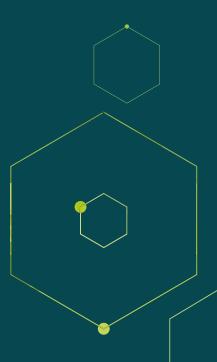


Technology strategy, open architecture and a roadmap to the boxless future

2023 In partnership with Quickplay







Executive summary

→ The TV market is moving from competition to coopetition

While pay TV subscription spending is stagnating in mature markets, evolving TV and streaming markets such as those in Central and Eastern Europe and Southeast Asia are generating growth

Hyperscalers and OEMs use content to realise other commercial objectives while content and sports rights owners are going direct-to-consumer ("D2C"), intensifying the competitive pressure on MVPDs

Growth is concentrated in streaming: the households which spend the most on streaming tend to be pay TV subscribers; hence offering legacy pay TV tightly integrated with streaming is critical to ensure MVPDs are accessing the biggest growth opportunity

→ In order to not just survive, but thrive, in a market predicated on coopetition TV distributors have to evolve their aggregation capabilities:

MVPDs tend to enjoy the benefits of incumbency: owning the billing relationship with, and direct channels to, the audience segments which spend the most on entertainment

First party data to understand consumer preferences and deliver targeted ad experiences

Differentiate their services by offering market leading UXs, discovery, targeting, bundles and locally relevant content

→ MVPDs are facing existential threats and to remain competitive they must:

Defend their legacy TV businesses

Deliver what their audiences want more effectively than their competitors, which they can do by:

- → Committing to a long-term strategy extending into the 2030s,
- → Building a platform that can both service existing services and deliver technology enablement,
- → Working with a platform with the ability to rapidly experiment with and integrate Al-based technologies that deliver enhanced discovery, personalisation, engagement and monetization strategies
- → Developing a roadmap for a boxless future
- → Evolving the ability to capitalise on market opportunities faster and more effectively than competitors

To do so, MVPDs must invest in an open architecture platform based on modularity which provides the optionality to maximise the competitive advantages available to them, namely:

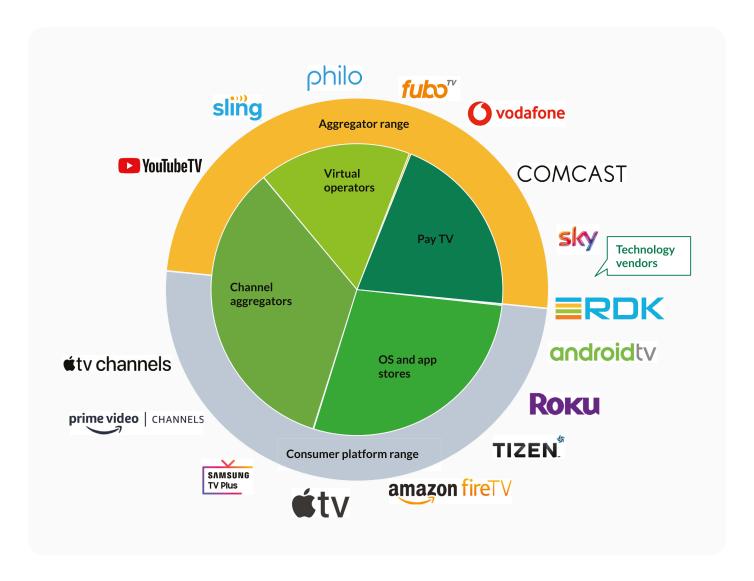
- Incumbency
- → Content
- User experience
- → Data on what its audience does and what it wants
- → 2030's market leading MVPDs will be built on cloud-native, open architectures enabling strategic optionality and AI-based technologies

From competition to coopetition: how the TV and video supply chains are evolving

Pay TV subscription spending is stagnating in mature markets while evolving TV and streaming markets such as those in Central and Eastern Europe and Southeast Asia are generating growth. Pay TV's challenge is to both defend their often sizable legacy businesses while simultaneously reinventing their technology and business models .

The onslaught of streaming services allied with content and sports rights owners increasingly going direct-to-consumer ("D2C") has squeezed the traditional gatekeepers households used for decades to acquire paid TV and video services.

Companies once uninterested in entertainment distribution, such as diversified technology giants like Tencent or Amazon or device manufacturers such as Tivo and Roku, are increasingly trying to become gatekeepers themselves, new entrants congesting an increasingly crowded marketplace. For this group, content is often a complement to another business: a value add for Apple's device owners or Amazon's shoppers; or Google's way of understanding what the world's viewers are interested in to buttress their search and advertising businesses.

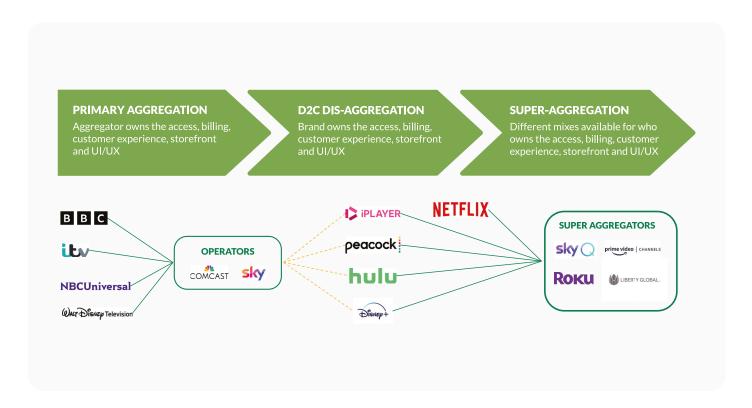


This has led to content fragmentation across multiple providers as content was lost by pay TV and increasingly acquired and then created by streamers. Subscription streaming platforms drove huge growth through cheap prices and enormous catalogues, seducing audiences into adding apps, devices and subscriptions to satisfy their viewing desires. Commentators sounded the death knell of traditional pay TV and streaming platform stock prices responded accordingly.

In 2022 something changed. The largest streaming platforms, now firmly ensconced in millions of homes, noticed new subscriber growth slowing for the first time. A range of responses followed to sustain streaming's growth narrative: password sharing crackdowns, price rises and advertising. For the first time streaming platforms needed help attracting and retaining audiences, and driving viewing.

This accelerated distribution of third party video services by pay TV providers via the set-top box, in much the same way pay TV providers have done for decades for broadcasters' channels. This made strategic and commercial sense: the overlap between pay TV and streaming subscriptions is well over 80 per cent of households in mature streaming markets such as North America and Western Europe.

Initially pay TV providers simply made the Netflix and YouTube apps accessible from the STB with little to no integration of key aspects of the customer journey such as: signing up, paying, content recommendation and no data sharing of what the mutual customers of streamers and pay TV providers were doing on the platform. The last few years have seen a tightening of the various ways streaming services and pay TV integrate with one another, smoothing the customer journey, improving the user experience and yielding ever more benefits to aggregator (MVPD) and partner (streamer) alike.



As a result the battle for premium TV and video market share has moved from competition to "coopetition": aggregators must compete directly with the media and technology companies who created these streaming services while also playing increasingly important roles in reselling and driving usage of those very same services. The dual role of the content super aggregator, encompassing both competition and cooperation, requires a fresh approach to succeed.

Transform, but defend and maintain legacy pay TV

There are a significant number of viewers across the world who still subscribe to pay TV services and legacy programming bundles, with global pay TV revenues continuing to eclipse OTT subscription streaming revenues. This constitutes a significant business which merits defending even if it is apparent that, over the longer term, audiences are transitioning to an IP-based future predicated on a broader range of monetisation models and greater content choice than traditional pay TV.

The challenge MVPDs must address is this: ensuring that investments in new platforms and technology enable new opportunities without disrupting the existing audience. This is strategically critical given the size of incumbent MVPDs' subscriber bases and the way the revenue generated by these businesses effectively funds the technology transformation the MVPD must undergo to maintain or build competitive advantage.

Pay TV service providers must continue to meet the needs of their traditional pay TV audiences while strategically evolving their services to address their future needs. This pivot, the balancing act required between the demands of today and the aspirations of tomorrow, is the most critical existential challenge pay TV providers face.

It will not be addressed by chasing features or capabilities today but by committing to a long-term strategic vision that focuses on the 2030s and where the ambition is an aggressive but considered transformation from pay TV provider to primary aggregator of digital content and services to the household.

MVPDs bring significant billing, promotional, and data insights advantages to this shift:

- → Incumbent MVPDs occupy a very powerful position in the marketplace because they own the billing relationship with demographics who spend the most on entertainment.
- → MVPDs also tend to own the primary user interface audiences use to browse and access TV and video, enabling promotion of new products and services and it is critical they do not allow a competitor to take this away.
- > Furthermore MVPDs can gather and access zero and first party data enabling them to target advertising and adopt sophisticated data-driven marketing strategies.

Achieve and enforce competitive differentiation

MVPDs have the opportunity to **differentiate** themselves from the proliferation of app and device-based TV and video services, by offering to audiences:

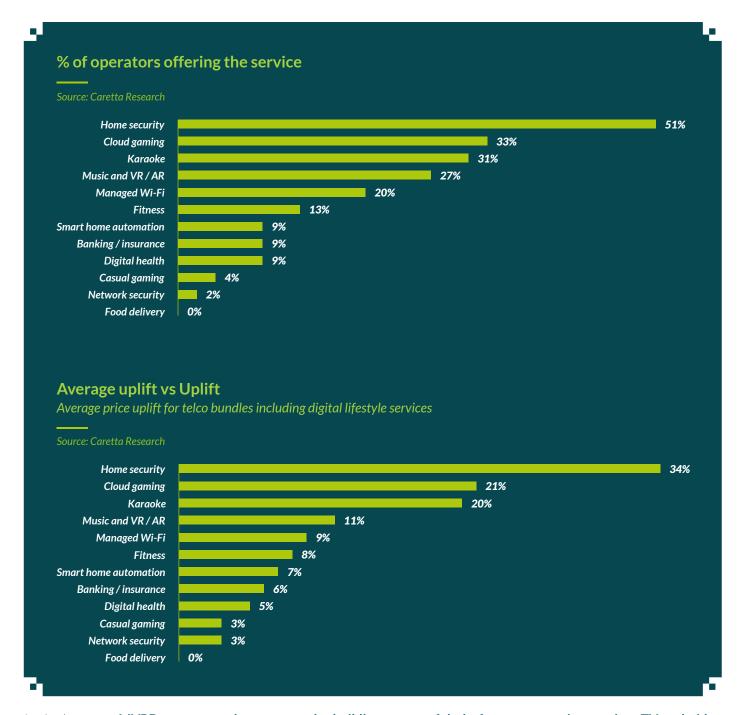
- → Improved content discovery via deep linking and metadata aggregation;
- → Better value propositions via bundled or add-on streaming and digital lifestyle services;
- Content delivery and monetization models that address hyperlocal interest and passion verticals;
- New advertising revenue streams, including placements in discovery tools, personalised FAST channels, live events, and more; and
- Integration of iOT, gaming and other digital lifestyle offerings to expand subscriber attraction and retention.

MVPDs should also be cognisant of the need to be high value partners to the companies whose services they are aggregating. While an MVPD's ability to deliver, retain and drive spending from customers will always be uppermost in content and digital partners' minds, they will also seek out partners who can offer them:

- > Reasonable commercial terms with low upfront commitments and integration costs
- Data and analytics about their customers and potential customers service usage, purchasing and retention drivers
- Tools for designing, delivering and tracking marketing campaigns on the aggregator's platform
- Proactive and creative partner success teams



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In the long run, MVPDs can own the customer by building a powerful platform, aggregating not just TV and video services but also digital services which are relevant to their customers. These span dozens of use cases across gaming, security, fitness and personal finance. The challenge for MVPDs is to identify which are likely to be taken up and used by their customers, and in building the platform which can promote and deliver the services effectively. To do this successfully they need a unique value proposition in order to replace or enhance existing revenue streams.

Becoming a super aggregator requires a strategic mindset shift for most MVPDs: how do I create unique, customised offerings to each consumer? How do I deliver meaningful, effective personalisation at scale efficiently?

The tools available to MVPDs include:

- → The subscriptions they take
- The channels and services they subscribe to
- Context (time/location/device etc.) in which they are watching
- The unique bundles that could be offered
- The ads they are willing to watch
- The number of ads they are willing to watch / pay to avoid



What MVPDs need to do now to cement market leadership into the 2030s

The key step the winning MVPDs of the 2030s will take (or have taken) is a mindset shift from chasing features to implementing a strategic vision encompassing a deep understanding of what their audiences want and how to deliver it, in future if not in the present. An example of this shift in mindset might constitute stopping asking questions like "how quickly can we add FAST channels" but instead to design the entertainment and services ecosystem in which FAST channels will most effectively address the viewing desires of specific audience segments, to integrate FAST effectively with other content and lifestyle services to create a superior user experience.

This requires a long-term vision of how an MVPD's technology architecture must evolve. Their long term prospects hinge on technology and architecture delivering the optionality to transform into what its audiences and partners need faster and better than its competitors.

Choosing the right platform and the right strategy enables MVPDs to capitalise on:

SUPER-AGGREGATION

- → The economics of reselling services to consumers
- → The unrealized demand and revenue from bundling services together; reducing attrition through bundle stickiness and value

NEW MONETISATION MODELS:

- → New advertising revenue streams, including placements in the UI, discovery tools
- → Increased usage of ad-supported services and channels (especially FAST)
- → Realisation of DAI potential, including in live events
- → Hyper local and passion content propositions
- Creation and distribution of new IOT and digital lifestyle services

MVPDs must either build new architecture themselves, or choose a video platform partner who can both **manage their existing business and establish them as a super aggregator** by offering:

- Minimal (ideally zero) disruption of revenue generated by existing business models and subscriber relationships
- → Knowledge of legacy platforms and Android STB implementations
- > Experience developing marketplaces and management of multiple content partner and services ecosystems
- → The ability to tap into advanced technologies which are likely to deliver competitive differentiation, e.g. Al-driven media technologies
- A roadmap to transition to a boxless future over the next five to ten years



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It all starts with ARCHITECTURE

While common and understandable for technology buyers to focus on adding features and enhancements on short term roadmaps, the architecture upon which the myriad technologies, products and solutions TV and video platforms are built is a critical factor in determining an MVPD's long term strategy and thus commercial outcomes. Given the rate at which technologies, monetisation models and distribution evolve and how they vary from market to market, working with a technology architecture which enables rapid experimentation and deployment confers a competitive advantage based on speed and lower cost (often leading to a lower total cost of ownership, or "TCO").

Long term strategy is determined by architecture because, at best, it can empower rapid and continuous innovation cycles based on the flexibility to experiment with either DIY or vendor builds, and the speed to test and iterate a range of approaches effectively. Often innovation is concentrated in a particular part of the stack: currently adtech, UIs, aggregation and AI-based solutions have seen rapid advances over the last few years. Open architectures offer the flexibility to test and deploy new approaches while modularity enables rapid replacement or iteration of particular parts of the stack, without having to rip and replace unnecessarily large portions of the same.

So while we would be hard pressed to describe, in detail, what the world's leading MVPD infrastructures will look like in 2030, it's a fair bet that they will be based on cloud-native, open and modular architecture. In summary: architecture determines strategy, which determines outcomes across a range of KPIs including acquisition, engagement, retention and monetization. Moreover it also goes some way to dictating ROI on content, marketing and aggregated partner performance as well as OPEX.

Cloud native, open, modular architectures enable the resilience and optionality to deliver a strategic vision of content and services aggregation into the next decade:

- → **Cloud native:** delivers scalability, with horizontal and vertical scaling, to meet the unpredictable needs of the legacy TV business and audiences
- → **Open:** enables companies to leverage new innovations in component technologies quickly, economically and easily; for example by making AI marketplaces accessible thus providing a continuous innovation platform that offers reduced development efforts, progressively lower OPEX and rapid testing and deployment speed.
- → **Modular:** modularity offers flexibility and extensibility and enables a microservices oriented approach alongside end-to-end orchestration which lets MVPDs plug, replace or append any part of the platform stack without having to do a full scale replacement every innovation cycle. This is important because parts of the stack are replaced at different rates; e.g. UIs and apps are refreshed much more rapidly than business backends; if they are tightly integrated the cost and complexity of refreshing the UI spirals, and the MVPD in question quickly looks and feels worse than its competitors.
- → **Single Instance:** delivers control of the MVPD's technology roadmap and feature enhancements to innovate faster and apply new AI models to your business objectives.

2030's leading MVPDs will be built on open architectures enabling optionality and AI

The key strategies MVPDs must address for competitive differentiation in the 2030s are:

→ The ability to rapidly and cost effectively experiment with and integrate AI-based technologies that deliver enhanced discovery, engagement, retention and monetization strategies





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Enabling the rapid deployment of AI based technologies is important to build and maintain a competitive advantage because it:

- → Is unquestionably the most fundamental technology advancement over the next decade
- → Impacts every aspect of MVPD technology infrastructure and service provision

From increasing efficiency and lowering cost/OPEX

- → Customer support functions e.g. support chatbots
- → CDN switching
- → Video encoding/transcoding



To improving and enhancing the UX

- → Content and service discovery, recommendations
- → Personalising UIs
- → Targeting promos and ads effectively

MVPDs need to position themselves for the slow yet steady decline of STB oriented TV and video services.

The 10 year roadmap for market leading MVPDs:

- → **NOW:** Android TV OT + OTT aggregation
- → **FUTURE:** MVPD app only, aggregating third party services within the app itself



STBs confer many benefits but also cost:

- > Set-top boxes start at around \$40 per device with much shorter life cycles (tending towards 4.5 years)
- → OS costs for Android TV operator tier are around \$2 per device per month
- → App-only services offer significantly lower TCO than STBs

STBs currently offer much better aggregation capabilities:

- → Previously to aggregate other services you needed a STB
- → But app within an app is now a solved problem on a technical level, the only barriers are commercial

Architecture is critical in realising this vision:

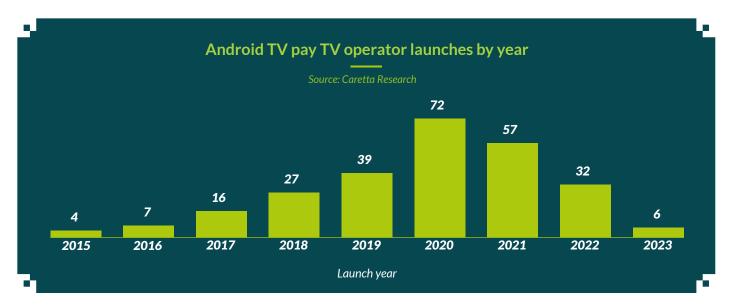
- → Working with a vendor who understands how long term MVPD strategy translates into technology is critical
- → MVPDs who fail to understand and act on this will be less competitive, offer a worse CX, endure higher OPEX and TCOs on multiple parts of their platform, and yield market share as a result
- → MVPDs that survive, and thrive, will be those that focus on technology enablement strategies that position them to win now and far into the future



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To MVPD, or not to be

The 2030s is unlikely to be a kind decade for the unprepared MVPD. Their role in the entertainment supply chain faces constant existential questioning given hyperscalers' dominance of mobile and online streaming. TV and video platforms are enormously reliant on the underlying OS, meaning the dominant technology companies and OEMs exert a high degree of influence on the shape and business models of the entertainment universe.



For now MVPDs still have a USP in providing linear channels and cloud DVR, replay and catch up functionality. However the linear channels are increasingly focusing on their own apps to deliver comparable functionality, often augmented with a deeper VOD offering than made available to MVPDs. This consumer-facing offering often comes with increasingly sophisticated advertising platforms, driving advertisers towards engaging with audiences on the broadcasters' proprietary app platforms rather than via a distributors' STB.

The UK's leading commercial broadcaster has invested heavily in its ITV X streaming platform which offers live, VOD, FAST and ad-free subscription monetisation models closely integrated with Planet V, its self-service advertising platform. Planet V is built on ITV's audience data which enables targeting and segmentation. The objective is to ensure that the audience turns first to the ITV X streaming platform when it wants to watch a show, and that brand advertisers turn first to Planet V to access ITV's audiences. MVPDs aggregating ITV X and comparable platforms provide a neat example of the pivot from competition to coopetition which the industry must undergo.

This should concern distributors who lack a strategy to position themselves effectively in the face of these two existential threats: hyperscalers and OEMS on the one side, broadcasters and D2C content owners on the other. So the MVPDs are in danger of losing the linear broadcaster edge as well. And given transactional VOD is on the downslope for every movie save for the odd tentpole release, this appears to lead to the inexorable conclusion that the MVPD model is in trouble.

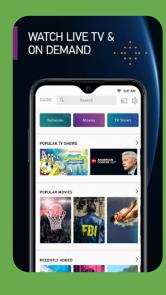
Effective and enduring competitive positioning in the face of such powerful threats is challenging and there is little doubt that many MVPDs will fail to do so. The challenge is intensified by there being no single prescriptive solution which will work for every MVPD. Rather, the answer is in cultivating and committing to a strategic mindset empowered by open architecture, modularity and hence control over one's destiny.



Provided an MVPD enjoys the optionality, flexibility and control only possible with an open architecture and a video platform aligned with these priorities, it can leverage its competitive advantages more effectively than hyperscalers, OEMs, broadcasters and content owners bearing powerful D2C streaming platforms and, most significantly, other MVPDs who lack the agility and capability to keep up.

The key weapons in the MVPD's arsenal are:

- → Incumbency: long standing subscription relationships with the audience segments who spend most on entertainment
- → Content: the MVPD business model enables huge upfront investments on exclusive content, such as live sports
- → **User experience:** aggregating multiple content and digital lifestyles services in one place, accessible through a single UI, for a single monthly payment, surfacing the appropriate content and services across MVPD apps and devices based on contextual awareness of what the individual wants and needs
- → **Knowledge of its audience**, via its ability to gather, interpret and share data generated by audience usage of its platforms and apps and from the household subscription relationship. This data may be used to improve and grow practically every aspect of an MVPD's business, for example:
 - → Subscription and bundle sales, and customer retention
 - → Advertising targeting
 - → Personalisation of UIs, content recommendation
 - → Measuring demand which drives content, channel and lifestyle service acquisition
 - Network operators can bundle entertainment with high speed connectivity, which offers higher margins than content. While much connectivity is fungible, arguably some forms, such as 5G and FWA, offer some level of differentiation from hyperscalers, OEMs and content owners if not from other network operators.



DIRECTV Stream delivers DIRECTV's pay TV offering via OTT streaming, to an Android TV STB for the big screen

It super aggregates AVODs such as YouTube, and SVODs such as Netflix, Prime Video, MAX and Apple TV

DIRECTV Stream is accessible via apps compatible with Apple TV, Chromecast, Fire TV, Roku, Android and iOS

DIRECTV Stream is available in tiered bundles based on channels and includes access to RSNs for local live sports broadcasts

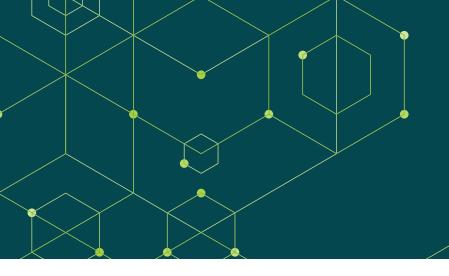
The service replicates the content, look, feel and functionality of DIRECTV's DTH service, including linear, local channels, live sports, DVR offered via a cloud-based service and extensive VOD libraries





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About Quickplay

Quickplay is leading cloud transformations of OTT and in-home experiences for pay-TV, telcos, and MVPDs. The company's cloud-native platform leverages a transformative open architecture for unparalleled performance in delivering premium video, handling complex use cases, and scaling to millions of viewers. Founded by a team that has built and operated dozens of Tier 1 OTT services worldwide, Quickplay is powering immersive sports, live experiences and personalized entertainment on any screen.

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