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TRENDS IN TV: OTT, APPS, ADS

This article addresses three apparently disjoint major trends in TV: OTT, Applications and Advertising.

Along the references and examples discussed throughout the text, we show how they are being combined towards increasingly innovative functionality and added value to our offers for the TV ecosystem.



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I Introduction

Like many other established technologies, TV has been sentenced to death too many times, but paraphrasing Mark Twain, we can say that “the reports of its death have been greatly exaggerated.”

In this article we will address three hot topics in the TV ecosystem. These are not precisely technical concerns, neither exactly business issues but linger in the fringe between these two connected areas.

The first topic is the OTT entrance in this market, originally fully owned by operators, and the effects this will have on them. We also see that technology pioneered by OTT players will be put to good use by traditional operators.

In that sequence we will analyze the concept of *appification*. It attained major relevance on the mobile world but is increasingly extending to other areas including the TV environment. In this case perhaps the technologies are not there yet, but we may anticipate that it can be a source of anxiety for the TV channel concept.

Lastly, since there is no such thing as TV without advertising, we will explore some new ideas that bring a refreshed relevance to the TV advertising business and will present our recent work in this area, which has the potential to tie up all these trends, adding value to our offers.

I OTT

With the recent expansion to more and more geographies, including small markets like the Nordic countries, Netherlands and Portugal, Netflix is trying to achieve critical mass and world dominance, and people wonder how its introduction will affect the currently established pay TV market dynamics. Our understanding is that it will make a difference, but not the same in every market and it will depend a lot on the existing offerings.

In the USA, operators are afraid of the so called cord cutting, where existing cable customers will drop their subscription to go for an antenna plus online SVOD subscription. Indeed, in recent years

the pay TV market has been shrinking in the USA, with cable estimates for 3rd Quarter 2015 going for about 300.000 less subscribers, and this is actually an improvement from previous quarters, which presented bigger losses. At the same time Netflix subscriptions reached more than 43 million USA customers [1].

There is undeniably a trend there, pushed by millennials and by the worse than normal economic climate. But in the USA case there was also a trend of ever growing TV channels lineup with a corresponding price increase. An average cable subscription is around \$87, where services like Hulu and Netflix are priced under \$10. However, they still need a good Internet connection and those are on the higher tide. If it can be seen as a sign, the biggest USA cable operator, Comcast, has now more internet customers than pay TV subscribers.

In addition, the idea that getting TV from the Internet was actually viable was reinforced by the TV channels themselves by allowing TV viewers to catch-up full episodes of their popular series directly from the broadcaster website or through Hulu.

In contrast, with the recent successful push for bundled services in Portugal, there is very little to save by dropping the TV service, since a plain internet connection needed for OTT services is almost the same price as a triple play offer. In addition, over the air TV is still limited to the four national channels. There is a very limited form of catch-up TV through the broadcasters' websites. More important than that, all operators offer an all encompassing 7 days, 80 channels full catch-up directly on their services and STBs, for free.

To further reduce the demand for cord cutting, the most watched TV events are (like in USA) appointment television in the form of sports events, that have little value in on-demand setups like SVOD [2].

Even more appalling is the Netflix's current catalog in Portugal (and other countries outside the USA). A slow start is understandable, but a newer trend is that the content rights owners are restricting the licensing to OTT services because of the risk they represent to broadcasters: drain their main revenue stream.

All of this combined suggests that, in Portugal,

Netflix and alike OTT SVOD offerings will predictively have a small impact in the overall pay TV ecosystem.

VOD business models

There will be some effect though, and in our view the most affected players will be the premium movies and series channels like TV Cine. In reality Netflix and other similar offerings will be like any other premium channel in the operator lineup.

The most important difference is that unlike the premium movie channels that are still linear in nature, an SVOD-like premium channel will be fully interactive and on-demand, allowing the viewer to actually select what movie to watch and when, without having to rely upon the broadcaster schedule. This is essentially the biggest feature of a SVOD service and, for example, MEO’s catch-up service “Gravações Automáticas”. The real power for the customers is the possibility of watching any asset from a huge catalog, at any time.

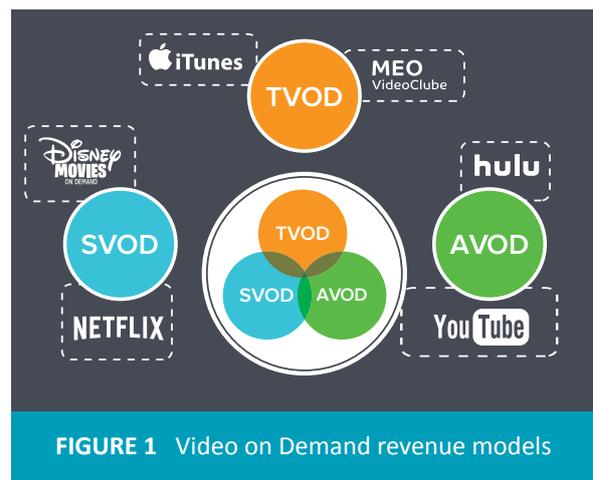
However, these OTT services pioneered or made relevant a couple of concepts and technologies that traditional operators are now starting to leverage for their own benefit. The first concept is similar to what happened in the music industry: there is more market in a subscription service than in selling content by the piece. In the music world it was the difference between digital downloads, like iTunes and music streaming, like Spotify.

In the VOD industry this piece by piece service is the traditional VOD renting, also called transactional VOD or TVOD, where you pay a one-time fee for watching a movie during a limited timeframe (commonly 1 or 2 days). This is the standard business model promoted by traditional operators in their digital offerings.

By contrast, the subscription VOD or SVOD is a service where you pay a monthly fee for accessing the whole movie and series catalogue. For the subscription period, usually 1 month, you can watch as many movies or episodes you want. It is like comparing a normal a la carte restaurant (TVOD) with a buffet restaurant (SVOD). One result of a buffet meal is that we normally eat too much, succumbing to what is called the binge eating attitude. Similarly, in the SVOD world we are observing customers really getting into an approach of bingeing their watching, burning

through stacks of episodes from a series. Catering to that kind of usage, SVOD services that started with a big movies catalogue mutated to having a much bigger number of assets from serialized shows that they brought from TV producers. Some services even started to produce their own series with some degree of success, being Netflix’s House of Cards the poster child of this kind of strategy.

There is also a third business model for VOD that is advertising VOD or AVOD, the most prominent operator on this model being YouTube, although in reality, with the recent launch of Red, they are supporting all business models.



Beyond business models and the attitude towards content consumption, the new online services pushed the boundaries also on the technical arena.

Adaptive Bitrate Streaming

Traditionally, operator based VOD services use some kind of bandwidth management to guarantee a consistent user experience. In IPTV this is achieved with QoS controls and a managed network. In cable solutions this is accomplished with fixed allocations at the edge QAM level. These are good solutions for completely managed networks, but they are neither cheap nor very flexible. However they provide a very good user experience with very low buffering times and a good response to user interaction, the so called trick modes (play, pause, fast forward, rewind and skip forward and backward).

Everyone who has watched video off the Internet is very akin of the dread “Buffering, please wait...” that plagued any YouTube watching.

Being completely over-the-top, these new video services operators did not get the luxury to pre-allocate bandwidth or to manage end-to-end QoS. What they did was to encode the videos in various quality levels and let the end user select what kind of quality he wanted to watch.

In the YouTube case, it started with buttons on the interface to allow the user to select SD, HQ or HD streams. Normally the user will select a level appropriated to his network conditions. Those that have a good connection will select an HD stream and those in a public Wi-Fi will select a lower quality stream to avoid buffering pauses in the watching experience.

This was not an ideal solution and had an additional problem that if the user selected a streaming level and then the network conditions changed, because the Wi-Fi link improved, or some other user started also streaming a movie effectively halving the available bandwidth, the user would have to make manual stream quality adjustments or cope with a subpar experience.

Today most OTT services and a growing number of IPTV operators have moved to a newer streaming

methodology called adaptive bitrate streaming (or ABR streaming). What this technique does is basically automate the stream quality selection for the users. Instead of the user having to select the best stream quality for the current networking conditions, the player does it automatically.

Reality is a little more complicated than that and, for this to work, the video file must be encoded in various quality and definition levels. A manifest file is also produced to signal the various profiles and that allow for the stream to be switched without this change being perceived by the user. It is almost as if the video file is split in small snippets of video, each 2 to 10 seconds long and stitched in a play list.

All the intelligence is then transferred to the player. Let’s say the player starts playing file SD-001, and detects that the network allows for a better bitrate (based on last time to download a video snippet and the buffer fullness), it will next play HQ-002. If it is still possible to go higher it will then play HD-003 and will stay in the highest quality until the network conditions deteriorate, when the player will decrease the quality asking the server for HQ-004.

With this technique the player will be adaptive to the changing network conditions, but also to the terminal capabilities. For example, if the player is not powerful enough for a HD stream the player will never ask for it.

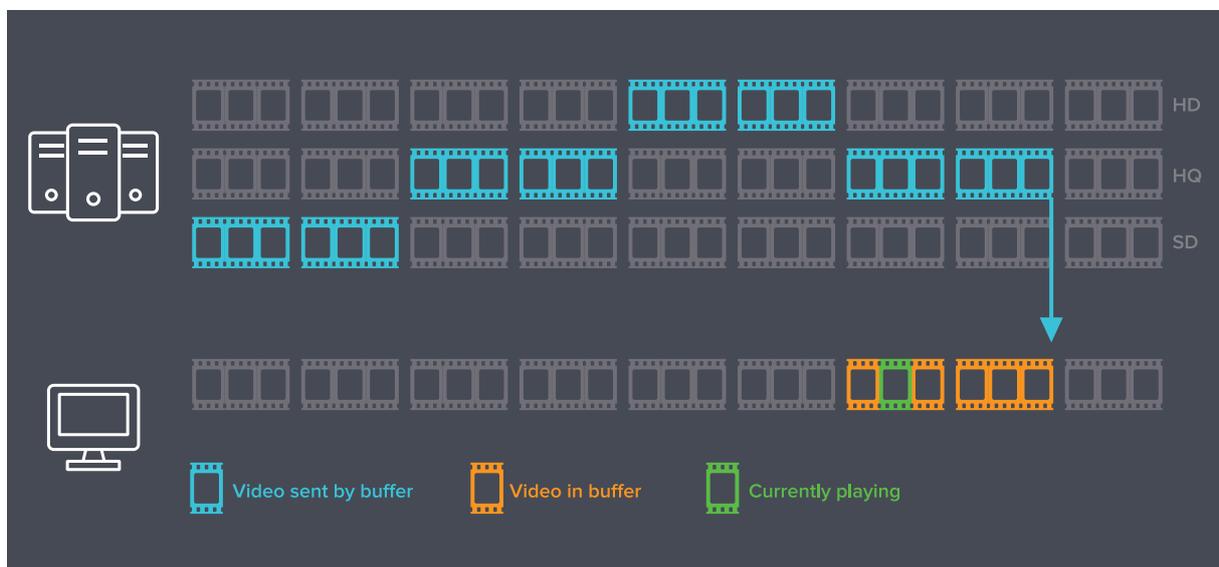


FIGURE 2 Adaptive HTTP Streaming

This technique minimizes the perceived buffering time solving one of the biggest hurdles in a pay online video service. Of course this is done by lowering the video quality level but for most users this is a fair trade-off.

Besides these technical achievements there are additional benefits for the service operators, being the most important that **this new way of streaming does not require any special software or hardware like the specialized RTSP streamers or the one used in cable operations. In most cases, it just needs a standard HTTP server, really lowering the barrier to entry. And as it uses HTTP it is very cache and firewall systems friendly**, since in reality the player is just downloading static files. These advantages are so compelling that not only OTT services are using them, but also operators are heavily investing in that kind of streaming deprecating old solutions, because they are cheaper, more scalable and easier to maintain and operate.

Yet, there is still one hurdle with ABR. Right now there are still too many protocols. Apple ecosystem uses HLS, Microsoft uses Smooth Streaming (HSS), Adobe relies on Dynamic Streaming and there are a couple of others.

For example, to support a wider variety of devices, Altice Labs uses simultaneously HLS and HSS for MEO Go service [3]. The more devices we can support the better, but having to support two streaming technologies (and still support RTSP for older devices) represents doubling the work most of the times.

However a new solution is emerging: in 2012 the MPEG-DASH was published as ISO standard and both



FIGURE 3 MEO Go service

OTT and managed networks operators are pushing to migrate their clients to comply with this new standard [4]. There are still issues to solve, related to DRM normalization, but that is a completely different subject.

I Apps

In recent years there was a seismic shift in the mobile world that will, in time, also transform the digital world into an App-o-verse (an universe of Apps). This process of *appification*, that some users take for granted, with mind-sets that make them search first for an app in their smartphone, before even looking for a website, is already stretching its arms towards the web. The websites of before, mostly just data repositories with little interaction, are being replaced by authentic web apps as the way to attract users. Sites like Google Maps are way more than a website and are built with the purpose of performing an action or task. And that is the biggest difference: the sense of purpose attached to the new websites, which is also transforming the web into a set of apps.

This *appification* of the digital world will not stop in the mobile and web worlds, it will reach way further [5].

It is no surprise for us to hear Tim Cook, Apple's CEO, stating that they believe **"the future of TV is apps"** [6]. We also trust it is. In fact, we have been believing it for some years: in the last 8 years, **since MEO service was launched, we developed more than 100 apps for TV** [7].

Some of those apps worked well, some not so much. However, we saw the Portuguese customers using more and more of the interactivity provided. From the younger ones using MEO Kids, to the huge usage we always had in the Secret Story app, season in, season out. And the apps usage was always going up all over the wide spectrum. This obviously paved the way for the most used app we have right now, our all encompassing 7 days 80 channels full line-up catch-up TV app "Gravações Automáticas".

During these years we also learned that coupling an app with content will bump its utilization. It happened



FIGURE 4 Secret Story App



FIGURE 5 Gravações Automáticas App

for example with our karaoke catalogue, which was a premium content with very low subscriptions. Then we developed an interactive app for promoting the content and also to help the consumption and the way karaoke should be presented and this stemmed a significant increase in the subscription rate. The same happened with Disney On Demand SVOD. That is why we believe that the future of Netflix and other OTT services like HBO Now or Showtime is an app to allow interactive on demand access to content that will be presented to the customer as an interactive premium channel.

The entertainment apps that couple content with interactivity for tapping the additional dimension

given by the instantaneously on demand selection of what to see are without doubt the main beneficiaries of our highly interactive platform. But we observe other kinds of apps getting intense usage, for example: the app that allows for MEO TV service customers to buy pizza directly on the TV sells more pizza than any physical store of that particular chain in Portugal. And TV is an ideal impulsive buying medium, as we can see by all the TV Shop channels that are ripe for an *appification*.

Being the biggest companion of our elderly [8], TV is poised for ensuring the actual realization of a set of ambient assisted living (AAL) enablement apps. We already saw some of this potential with our RDI activities in this area [9].

Then again, we have already seen most of those arguments in the sales pitch for connected TVs and their app stores. These stores never took off and there are less than a handful of apps actually being used, such as Youtube and Netflix. We believe that this happens because, on one hand, most of these apps have very low quality and have a really poor usage model and, on the other hand, they are not integrated with the TV experience: the way user accesses them is via an area of the TV that normally turns off the video and seems to have been created to confuse the user. In MEO platform, apps are an integral part of the TV experience, they are there to extend and complement the content and not to replace it.

We are not fully convinced that in the near future the concept of channels will be fully replaced by the concept of apps lineup, however we do believe that part of the future of TV lies on the fusion of these two concepts.

I Ads

Commercial advertising has been a constant presence since the beginnings of TV. After all these years there is still innovation that can be infused on what is manifestly the most powerful way to promote a brand, product or service.

Nevertheless, TV ads have a huge shortcoming being the most used medium to advertise, because it is very difficult to actually pinpoint what works

and what does not. In the words of the forerunner of marketing, John Wanamaker, “Half the money I spend on advertising is wasted; the trouble is I don’t know which half” [10]. For sure we can say that the numbers for TV are even worse. That is one reason why companies and advertising agencies tried to find better ways or at least more measurable ways to minimize those proportions, minimizing the wasted half. In recent years most of these efforts have been spent on the digital arena, with a huge investment on trying to engage the customer, mainly through social networking. The digital medium and social networks in particular sold the idea that they could measure with precision and produce analytics on how well the advertising campaigns performed and how engaged the customer is with the product. For that purpose, agencies created the perfect social media campaigns, got millions of Facebook likes and thousands of new Twitter followers. But as a recent article in Financial Times recounted, **the sales for Pepsi, one company that betted a big chunk of what used to be their TV budget on social, actually declined 5%. And they returned to ads on TV** [11].

The problem of social media and most of the target advertising bandwagon is that they are preaching to the choir, i.e., they are reaching already loyal customers or even fans. The real purpose of advertising is to reach for the eventual buyer or even the one that usually buys from the competition. Like the person that does not drink cola, but is going to host a party, and then will buy the brand that has achieved highest notoriety in his mind. TV is a great way for reaching that segment of customers and achieving high notoriety, especially when promoting a brand instead of a product.

It is important to look differently to the concepts associated with digital marketing and mix them with the wide reach presented by the TV medium. For example, an ad for a sports TV channel promotion (let’s say first month free for a six months’ subscription) will be wasted in an actual sports TV channel customer. Perhaps this could even be detrimental, because the company is giving something to new customers and nothing to loyal ones. Completely different is an ad that promotes a match saying that it will be only available on sports TV channel. In this case there is no waste, the actual

clients will have been informed of the game and the “exclusive club” they belong. The non-customers are lured and the brand exclusivity will be reinforced in everybody’s mind.

Right now we have technologies in place, on MEO service, for helping in both cases. In the first case through a segmentation platform, we can subdivide customers between the ones that have sports TV channel and the others. In the example above we will deliver the promotion just for the non-customers. Of course in this case we have full knowledge of what channels the customer subscribes or not, but the same notion can be applied to other areas, where all the investment in profiling and analytics created for social media could start to pay off, they just need to be applied to cater for the non-customers instead of engaging current ones. This technique is easier to employ when targeting products that can only be bought or subscribed once.

In online campaigns, marketers like the metrics, mostly click-through rates (CTR) and conversion rates, that is, people that clicked in an ad and people that actually made a purchase. Maybe brand awareness can not be measured by these metrics, but product promotion on TV should, not only through CTR but even more important directly through a TV frontend store which can really close the full loop.

As the result of our investments and RDI projects we already have all the needed technology in place: a set of tools including DIPR, an advertisement

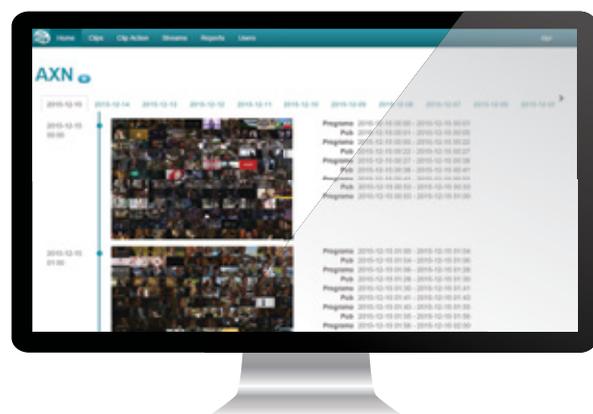


FIGURE 6 DIPR tool

detection, identification and removal system, supporting live and on-demand video streams [12].

We will use the results in two ways, both for adjusting the automatic recordings from our catch-up and also for enabling the swapping of live or recorded ads on TV, even replacing them for a segmented OTT version tailored for that customer's profile.

Furthermore, we can signal the customer that the ad has interactivity and through an app actually perceive a CTR in TV: we did that in the past with a specific carmaker advertisement, allowing potential customers to book a test drive.

Although the actual conversion rate was not disclosed, we were pleased to learn that this interactive app originated the majority of booked

test drives, which were available also via the usual channels.

I Wrapping Up

Throughout this article, we addressed three apparently disjoint trends: OTT, Apps and Ads. In the end, we have shown how they are actually being combined towards increasingly innovative functionality and added value to our offers for the TV medium.

These aforementioned tools are available beyond IPTV scenarios such as MEO. **All this is also possible and quite viable even in cable operations, by means of DOCSIS integration and simpler HTML5 based development environments provided by newer STBs.**

All new on demand deployments will be based on OTT techniques like ABR. They will be coupled with interactive apps to enrich the user experience. And ads will keep their prominent presence in the TV space, but coated with new interactivity features and providing advertisers with powerful tools to get from TV the same set of indicators they are used to get in the online world.

With little extra work, this class of apps can also work as a sales channel, allowing the customer to actually buy the product or service directly from the TV and even pay for it, really closing the full loop for his/her digital journey. ○



FIGURE 7 Interactive Advertising

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