



White Paper

How Can Telco Exploit the Internet TV Prospect?

Utilizing the existing infrastructure to leverage the Internet TV opportunity

This paper discusses how ISPs and operators can introduce the Internet TV to their service offerings to reach to a wider number of broadband subscribers with premium content either as a stand-alone proposal or as a complementary service to their existing IPTV offer.

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Executive Summary

The strong competition among broadband access providers is forcing them to offer more value-added services over the broadband connection with the intention of retaining customers and increasing profitability. Internet TV appears as such a differentiator service.

Initially, conventional TV channels started to take advantage of making their content available on their web sites. Programs were available in the form of downloadable on-demand or catch up fashion after they were being aired on their scheduled time. These services were mostly provided for free or they were ad sponsored and did not include the premium content. This business model was not appealing to the broadband service providers as is.

Recently the broadband access providers have seen the value in offering premium content and services in a seamless way that will appeal to current and prospective customers. This approach would also legalize the premium content consumption and bring in new revenue streams to the service providers. Hence they started to utilize their infrastructure to add Internet TV into their collection of offers. After all, they have the advantage of bundling the Internet TV with the other telecom services, such as voice and data, to offer eye catching blended offers while achieving a high ROI in a very short time frame.

Broadband service providers are unique in terms of their need of a platform to address so many diversified services. Hence, to be able to fulfill the goal of providing the Internet TV service along with the conventional broadband services, an end-to-end architecture is needed that supports the diverse requirements of streaming and entertainment, conversation, and high-speed Internet services. Yet this can easily be provided by a truly converged, cost effective platform.

It appears that, a smart middleware positioned in an Internet TV solution that manages the TV clients, serves the EPG, provides access to the VOD portal and orchestrates the whole Internet

TV infrastructure is a crucial component. Additionally it will handle the subscription management, offer management, package management and more by integrating in to operator's back-office systems like billing, CRM, SDP, etc.

A smart middleware may also help operators to open up multimedia application development capabilities to third parties while still maintaining complete control.

Finally, an Internet TV solution with aforementioned capabilities on top of targeted advertisement and availability on mobile platforms would be ideal for any Internet Service Provider planning to launch such a service.

Introduction

In its simplest terms Internet TV is a television service distributed via the Internet. Internet TV allows its users to watch broadcast channels or choose offline content, such as movies and time shifted programs, from a catalogue. The content is directly streamed to a media player.

Even though the technology to broadcast television over the Internet has existed for many years, it is only recently that the acceptable bandwidth capacities are being reached and a business model around the concept is solidifying. Today more and more people have access to the Internet and Web compared to a decade ago - thanks to the better infrastructure and lower end user equipment prices. Global internet traffic is expected to grow by 40% between the years 2008 and 2013 with the highest growth rate for the Internet video TV (146%) [1].

Changing customer behavior is immensely impacting the new era Internet consumption trends. Users value the interaction, recommendations, access to on-demand content, integrated services and shared resources and inclined to choose companies making some or all of these services available.

As a consequence, operators' role and functions are being re-defined in the light of new trends and developments. More and more operators everyday are extending their offerings to include services such as content, applications, various distribution channels and variety of end user devices along with the traditional services of infrastructure and access, quality of service, billing and customer care.

In this sense, television over the Internet makes a lot of sense as a new service offering for the operators:

- It is fundamentally different than traditional TV by allowing the user to interact with the medium.
- Operators have gained expertise on TV business through IPTV and now want to leverage their resources and know-how to reach to a wider audience.

Background

Initially, conventional TV channels started to take advantage of making their content available on their web sites. Programs were available in the form of downloadable on-demand or catch up fashion after they were being aired on their scheduled time.

In recent years, the increased speed of broadband connections allowed content owners to stream their content directly over the Internet avoiding the delay of downloading process.

The ability to use the open internet to deliver quality video to the user premises and having the technology in place to stream the video virtually continuously have started to change the dynamics of the Internet TV business substantially.

IPTV is growing rapidly, but penetration is still low compared to the traditional TV. As a result, operators which are already invested in IPTV or are planning to invest in the future are extending their plans to include streaming the content over the open internet.

They also see the opportunity to extend their subscriber base and address the broadband users who are not intended to buy IPTV but still are interested in video on demand, time shifted and other premium content.

One question that still lingers is the quality of service attained by open internet not always matching the expectations of the TV audience. Low video quality and frequent interruptions appear to be threats for customer satisfaction. Hence, from users perspective existing Internet TV services are reflecting the internet experience and they do not preserve the typical TV experience.

On the other hand, the trend of providing broadcast TV and premium content over Internet is also fueled by the cultural change. Lean back TV watching experience is leaving its place to lean forward especially among the younger audience. Accessing videos whenever and wherever possible is becoming the habit of new generation. In US in 4Q09, traditional television use per month is up 1%, where as the timeshifted TV is up 25% and online video usage is up 16% when compared to the same time period last year [2].

Another major question is the world of heavily regulated broadcasting and the access rights for the premium content (DRM). Broadcasting rights change from country to country and even within different regions of countries. These rights govern the distribution of copyrighted content and media and allow the sole distribution of that content at any one time. That is one of the reasons of having so many content owners offering their own online TV services so far, like BBC iPlayer.

At the same time many conventional television stations wanted to take the advantage of the internet as way to continue showing their programs after they have been broadcasted as on demand and catch up services.

Moreover, when it comes to delivering many broadcast channels and video on demand content, (i.e. replicating an IPTV offering)

existence of a CDN is unquestionable. There is no “one size fits all” CDN solution on earth to address this requirement. As a result existing premium Internet TV offerings are mostly regional to sustain a reasonable quality of service.

Today's Landscape

Operators providing TV services have already acknowledged some of these changes through the introduction of concepts such as IPTV and VOD.

Cable TV, existing for many years, addressed the broadcast only via analogue and broadcast and VOD via digital. On the other hand Satellite provided the broadcast and near VOD services.

Today broadcast viewership is dropping, which means the cost per viewer is rising. For cable where viewers are stagnant, viewership is declining (number of hours of viewing) and the cost of content is rising. Satellite has been growing marginally but that could end at any moment and it shares the same content cost increases as cable.

Where we have approached a point where Internet service will equal and then be lower than the marginal per-viewer cost of the broadcast TV model, IPTV took its place in the picture and all of the real TV experience of the conventional satellite, uninterrupted HD video and true VOD became a reality for TV audience.

But IPTV had its challenges and higher capital costs and slower subscriber acquisition made operators to start questioning their motives behind the IPTV investments (Figure 1).

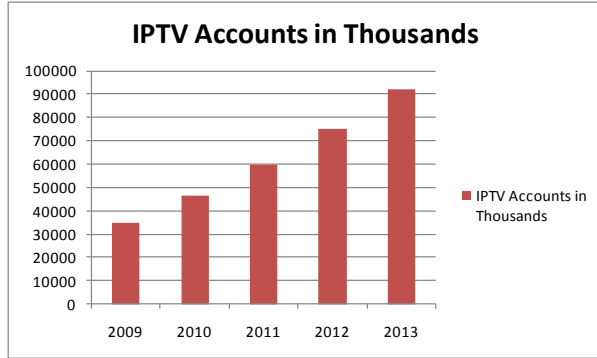


Figure 1 – IPTV Accounts by Numbers 1

On the other hand, Internet TV allows the operator to differentiate itself from the main stream Internet video providers by the means of convergence, ubiquity and interactivity while preserving the basic TV functionality.

Internet TV helps customer acquisition and retention for operators. It increases ARPU and total revenue through diversified revenue generating, targeted services and tariff up-sale while increasing customer satisfaction through improved personalization experience.

Internet TV reduces OPEX and makes the quick roll-out and easy penetration possible since there is no need for a set-top-box or secured IP channels.

Internet TV also ensures scalable growth of the Internet TV eco-system by allowing smooth integration of Internet TV technology partners (Head Ends, VOD Servers, DRM solutions, etc.) into the Internet TV services eco-system.

Yet there still is the challenge of monetizing the massive interest in new TV watching trends by Internet TV. Majority of Internet TV solutions available today are not suitable for telecom operators who want to offer an IPTV-like experience for a much lower cost.

An Internet TV Solution

A typical Internet TV solution is characterized by providing the same services IPTV offers (broadcast, VOD, time shifted content, etc.) and much more (e.g. online TV widgets) on an open Internet environment.

Characteristics of the solution are:

- Internet TV does not require the user to have a fixed location or a Set Top Box. A PC, an Internet TV account and a broadband connection are enough to use the service
- Internet TV allows the users to choose the program or the TV show to be watched from an archive (VOD, TSTV) or live from a channel directory (EPG).
- Internet TV broadcast TV service is delivered in unicast basis to each user
- Internet TV infrastructures typically require lower investments compared to IPTV, potentially less CAPEX in the long run
- Internet TV is future-safe (as internet bandwidth tends to increase in the near future).
- Main Internet TV components are:
 - An Internet TV middleware which resides in the heart of the solution to orchestrate the components of any typical Internet TV eco system (Head End, VOD Server, DRM, etc.) while integrating the Internet TV to the operators network (OSS, Billing, CRM, etc.).
 - A graphical end user application, browser based or in the form of a PC client, for decoding live and VOD streams and supporting the features such as VOD, Live TV, DRM, PayPerView, TimeShiftedTV, etc.

- Head End and VOD servers to provide the broadcast and on demand content.
- DRM to ensure the digital rights management of the WebTV content.
- Streaming servers for streaming the broadcast and on demand content.
- Following figure depicts the typical Internet TV components.

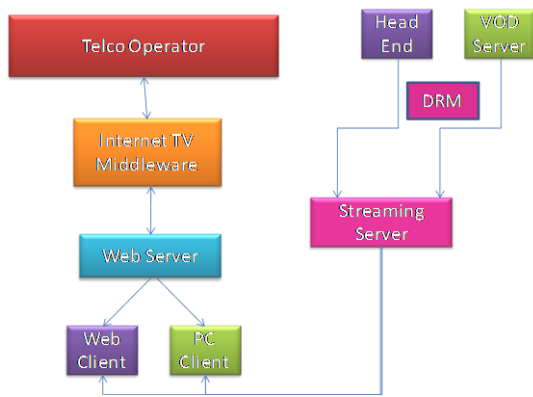


Figure 2 – Typical Internet TV components

For Internet TV to become a serious business, watching content needs to be a reliable, high-quality experience. In recent years, picture quality, accessibility across platforms and devices, player functionality and content availability have dramatically improved. As a result, higher quality videos can be streamed wherever the content and the connection quality (higher bandwidth and the faster connection speed) are supported. For connections with lower bandwidth and slower connection speeds, mechanisms such as adaptive bit rate come as handy. Internet TV client detects the bandwidth automatically and adjusts the delivery bit-rate to minimize buffering and maximize quality.

Adaptive bit-rate delivery works for both live and on demand content.

Argela WebTV Solution

Argela WebTV is a product that is built to address the needs and solve the problems of the aforementioned typical Internet TV solution. It is built for the telecom operators and the ISPs to address their unique needs and help them to open up new revenue streams and retain customers.

Argela WebTV comprised of two main components (Figure 3):

Argela SDP Based WebTV Middleware is an Internet TV middleware managing Argela WebTV clients, serving EPG, serving VoD portal and orchestrating the whole Argela WebTV solution by integrating it to operator's back-office systems. It also allows operators to open up multimedia application development capabilities to third parties while still maintaining complete control.

Web based or downloadable PC application which is Microsoft Silverlight-3 based for decoding live and VOD streams. It provides a rich graphical user experience with 3D animations, transparent 3D menus, picture in picture views etc. Argela WebTV client enables decoding of live TV channel streams, movies, music by using Microsoft's Smooth Streaming and Playready technologies. Mobile clients for Iphone, Android, Symbian, Windows mobile and WAP-based client are also supported.

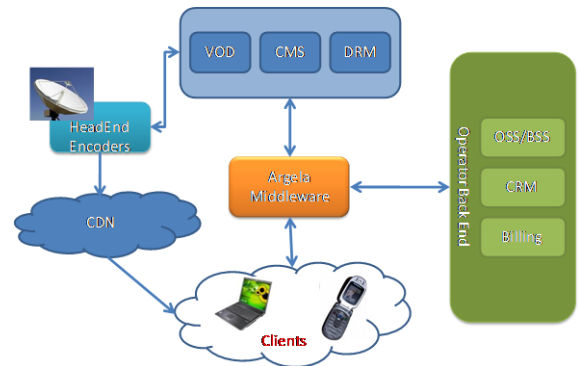


Figure 3 – Argela WebTV Components

The number of broadcast channels supported by Argela WebTV is practically limitless based on the network capacity and the number of encoders.

Argela WebTV supports HD 720p streaming with keyboard, touch screen, remote control and 16:9 / 4:3 resolution options.

Some of the features supported are:

- Pause and rewind Live TV
- TV Guide: EPG Support for channel and time.
- Searching TV channel by program name, channel name, time.
- Reminder : set a reminder for a specific program
- Voting : vote a program and see the results at the end of the program
- Category: Categorized channels.
- Favorites: Users can create their own “favorite channels” list
- VOD Search : Users can search videos according to movie name, director, date, genre on the video player
- VOD Voting : Users can vote videos
- VOD Categories : Videos are categorized and listed to users
- VOD Restrictions : According to the type of the video ,search results can be filtered
- Support for multi-language subtitles and audio
- DRM Support
- Two-screen support: Watch your purchased movie on two platforms – mobile or pc.
- Content bookmarking: Continue to watch the video on the same or a different platform (e.g. start watching on PC and continue on mobile device)
- White Label Branding: Open up the WebTV platform to various content owners or businesses to distribute their content.
- SMS and MMS
- SIP voice clients
- Integrated Targeted Advertisement (EPG, menus, broadcast and pre-roll VOD, etc.)

Argela WebTV Benefits:

It is developed from scratch for the telecom environment and utilizes the Argela IPTV middleware which is a SDP based platform. From a network perspective, the result of adding more services into the operator’s network introduces more complex service architecture since each service has its own unique service requirements. This results in a multiplicity of systems with different methods for authentication, and multiple databases for user information, billing and operations systems (BSS/OSS) and control architectures.

It is also important to recognize the practical need to work within the existing operator OSS/BSS framework as much as possible.

Using a SDP based Internet TV middleware addresses these issues by providing a uniform method for integration to the operator’s backend. It provides a range of user self service options (via a portal) and the associated provisioning, billing, and applications management environment while ensuring the consistent subscriber data and settings in the network.

Additionally, silo solutions fail to deliver any substantial cost synergies and a SDP based Internet TV middleware prevents this.

Argela WebTV has a strong technical infrastructure with ensured video continuity through Microsoft Silverlight smooth streaming, increased efficiency through dedicated CDN and major studios approved DRM.

Argela WebTV is an Internet TV solution that gives the “original TV experience” in the next generation environment with easy to use high tech user interface and channel navigation.

The business model that is designed for the two screen solution lets seamless discovery and access of contents from multiple channels and screens. This model uniquely expands the sales model for the operator.

An integrated advertisement platform enables the operator with the advanced targeting capabilities. Inventories such as pre-roll VOD ad video, banners in various menus and EPG, sliding text in broadcast, etc are available.

Argela WebTV is a software tool that works in the very same way of your multi thousand dollar TV set and goes far beyond in services.

Conclusion

Broadband service providers realized the benefit of adding Internet TV solution to their service offerings via utilizing their infrastructure and already in place services for any blended applications prospects. This approach will also help them to achieve a high ROI in a very short time frame.

However they differ from the content owners in terms of what they want in an Internet TV platform. A special solution is needed to address the expectations of a broadband service provider.

A solution with:

- a smart middleware that fits in to the complex infrastructure of broadband service providers and that doesn't create yet another silo,
- an advertisement platform with true targeting capabilities,
- triple play friendly (mobile, PC and TV) features,
- exceptional end user experience enhanced with interactivity, adaptive bit rate support, dedicated CDN,
- capabilities that go beyond today's conventional TV and Internet TV, such as pausing and rewinding the live channels, on demand and time shifted content, etc.,

is the answer the broadband service providers are seeking for.

References

- [1] Cisco Visual Networking Index: Forecast and Methodology, 2008-2013
- [2] Three Screen Report • VOLUME 7 • 4th Quarter 2009)
- [3] Pyramid Research 2009; Heavy Reading Next Generation Advertising Study, 2008 (Various Surveys)