



WIND Hellas

Inventing a New Way of Watching TV

The story of WIND Hellas illustrates what it takes to be an innovator and growth player in the new landscape of TV. Just two years ago, WIND was a well-established broadband service provider and mobile network operator in Greece, but without any kind of video service offering. The market environment did not seem very encouraging for a new entrant, with many current players struggling against the headwinds of low-cost streaming and piracy. But the pioneers at WIND had a vision of what they needed to do – they took the best technology available, married it with a compelling content offer and have now become by far the fastest growing local player.

A large monitor on a stand displays the WIND Vision user interface. The interface features a dark background with a central, vibrant, abstract illustration of a face and flowing patterns. On the left, there are three icons: 'NETFLIX', 'YouTube', and 'Play Movies'. Below these icons is the Greek text 'τώρα ποίζει'. To the right of the central image are several icons with corresponding text: 'οδηγός προγράμματος', 'σθλοπικά', 'πρόγραμμα τελεόρασης', and 'κανάλια'. A smartphone to the right shows a screenshot of the WIND Vision mobile application, specifically the TV Guide section, listing various news and entertainment programs. In the bottom left corner, there is a green Android robot icon next to the text 'androidtv'.



A New TV Service

With the traditional subscriber base of pay-TV services under great cost and competitive pressures, and a seemingly insatiable demand for a-la-carte Internet video services, the prospects for launching any new kind of video service offering may seem daunting. But the opportunity for innovation in this market is far from exhausted as the story of WIND Hellas illustrates.

The team at WIND saw clearly the opportunity to add value to their fixed and cellular network base offering by aligning a compelling TV service with their converged fixed & mobile value proposition. The option to combine terrestrial favorites with the content from a major sports network and flexible range of Internet services in a single commercial proposition was an exciting prospect.

But an innovative range of content alone seemed unlikely to sufficiently differentiate the service from the other legacy offerings. The key ingredient necessary was identified as the setting of a new high bar for overall user experience in this market, establishing unambiguous leadership in:

- A worry-free self-installation and set-up experience for new subscribers.
- Full range of live ABR streaming services to wireless STBs.
- Full integration of local terrestrial services in the STB.
- Leverage of Android TV features, including apps, casting and voice search.
- A contemporary, image-rich, unified user interface across devices.
- A single set of user and billing credentials for all content, including Netflix, avoiding separate credit card use.



The driving philosophy of exceptional user experience is visible in all aspects of the service and its delivery – with the key watchwords for implementation being simplicity and openness.

And it is clear that this approach has been core to the success of the new WIND service – for the big screen there's a compelling combination of svelte WiFi connected hardware and engaging user experience, using the full power of Android TV and future proofed for next-gen UHD/HDR content. The vibrant content offer covers a full spectrum of the viewers universe from DTT, to Pay TV, to the best of Internet VOD, music and games in a single, uniform navigational framework. And the service, including preferences and favorites, reaches everywhere on a full range of mobile devices.

This message of user experience has also been at the core of an intensive and very cool launch promotional campaign that has helped propel the WIND service to a significant market share in just over a year. This is surely an endorsement of how a service concept with a strong, unifying vision can translate into a business success story.



The Zappware Platform Approach

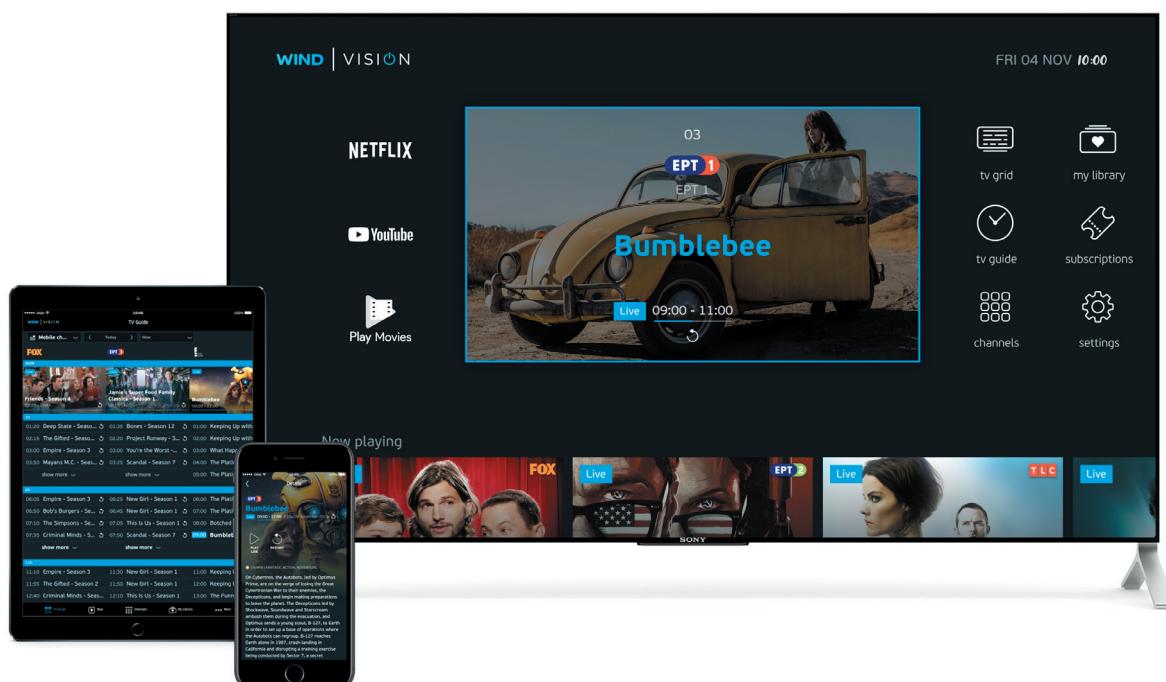
So, what's behind the scenes of this highly popular new service? Central to the realization of the overall project was Belgium-based Zappware, an experienced developer of some of the world's most acclaimed user experiences. Zappware was selected as the prime contractor on a rapid turn implementation project: 10 months from the drawing board to initial launch. Within this project, Zappware was able to fully realize the operator's vision with its service delivery platform, user interface skills, and approach to interface optimization. Working in conjunction with VP Media Solutions, specialists in converged content architectures, the team at Zappware fully managed the end-to-end TV platform-as-a-service during the ramp to commercial success and continues to do so under a long-term managed service contract.

The Zappware software platform at the heart of the system is what brings the system to life on the big screen and mobile platforms. Zappware is widely recognized for its intuitive and seamless UI design capability, but a look at the scope of the Zappware technology shows that it goes much deeper than just the user interface framework – it's a full system of components and tools dedicated to the management and presentation of content, navigation and operator services in a manner that directly corresponds to user preferences and history of interactions. The philosophy of the approach is to create a highly engaging interface and navigational approach, combine it with mechanisms that evaluate usage, and continuously optimize the interface for any viewer based on that data stream.

The key components of the Zappware platform include:

- **The NEXX user interface:** A designer framework that enables personalized user interface implementations across mobile, tablet, desktop and STB clients. Includes flexible user identification and activity instrumentation.
- **Service management and configuration:** Provides package management and metadata support for all linear, VOD and Internet streaming content.
- **Analytics & preference engine:** Uses client activity data and preferences to optimize individual user experiences on a continuous basis.
- **Marketing console:** Provides powerful operator control of screen layout options, including seasonal and promotional offerings.

The Zappware ability to configure and deploy these proven component systems rapidly and reliably brought the WIND ecosystem from concept to market in a remarkably short timeframe.





The Partner Ecosystem

One key to this success story is the set of strong technical partnerships at the heart of the project and the way the technology has enabled vibrant connection between viewers and the full range of their content. The list of specialist components includes offerings by many of today's leading industry vendors. The following highlights a few key contributors to project success.

Starting with the source of the satellite and terrestrial reception and processing, WIND chose the Appear TVs XC-series modular receiver system allowing for the entire multi-site deployment to be customized to provide exactly the desired suite of functionality. Combining DVB-S2X and DVB-T2 reception with descrambling, multiplexing and redundant IP output, each XC unit was configured to optimally deliver on WIND's requirements.

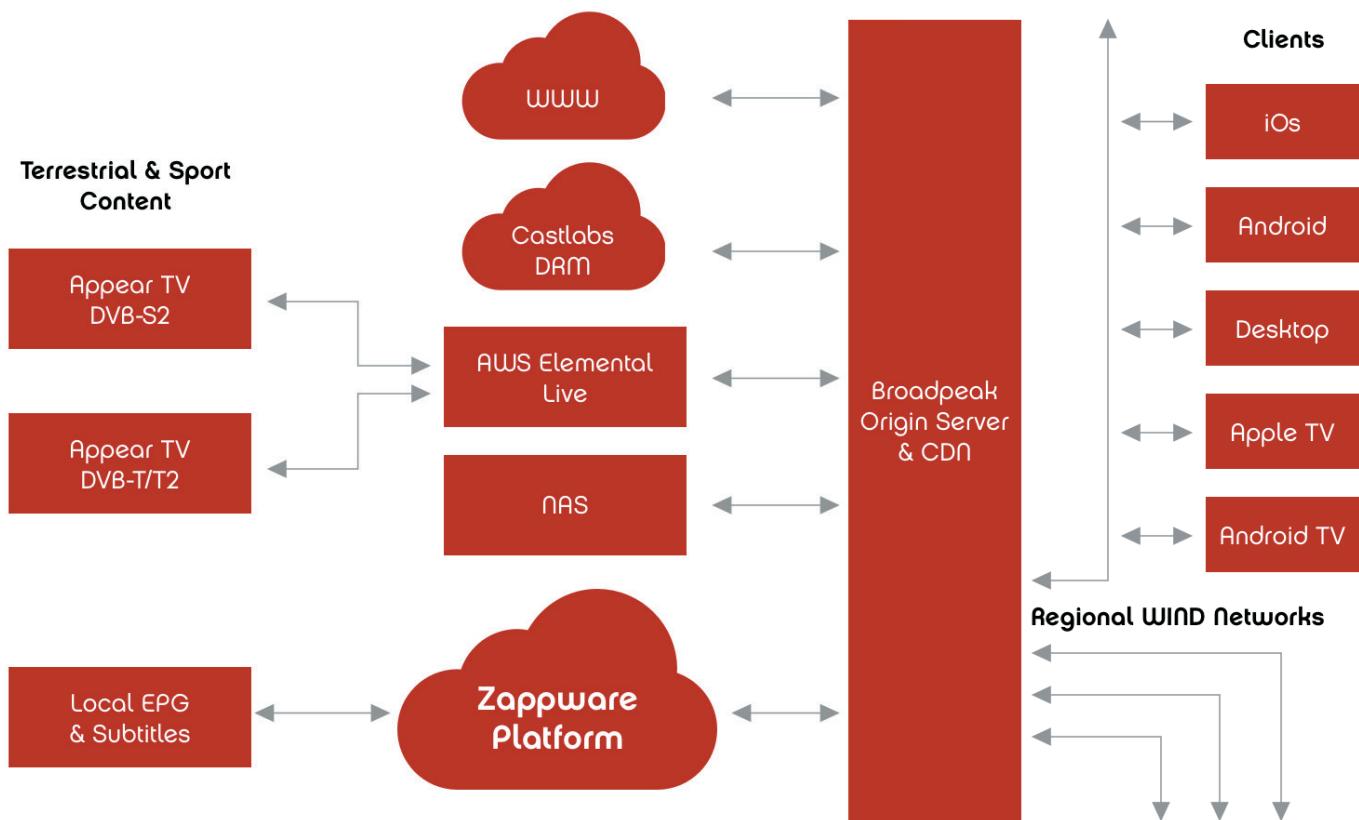
Two aspects of the partnership with AWS became instrumental to project operation and service delivery. AWS Elemental supplied the full redundant chain of media processing and compression necessary to take the raw DVB signals and transform them to the required Internet streaming formats. The WIND team installed and configured a network of AWS Elemental Live encoders resources orchestrated by AWS Elemental Conductor to enable flexible, high-quality media compression to optimize quality and bandwidth usage.

A key strategic implementation decision was the use of cloud hosted service delivery and subscriber management. All back-end components of the Zappware platform were deployed in an AWS virtual private cloud along with important supporting elements of the WIND web infrastructure. Not only did this approach for service delivery provide accelerated time to market readiness, it also offered a cost-effective way to scale the solution with subscriber numbers. The use of native AWS services for storage, monitoring and visualization supports a powerful operational environment that can be rapidly updated as services require.

To address the security of video delivery, castLab's DRMtoday solution offers a complete set of protection features, and also uses a flexible AWS cloud infrastructure to minimize key delivery time and an ultra-reliable service. Furthermore, DRMtoday is able to provide key deliveries through two different license types. The first license type is where the DRM license is delivered for each channel tune when the device requests it. The other license type called "offline license" allows the device to store the DRM license acquired for a channel tune and reuse it for a defined period of time resulting in reduced traffic and video start time.

The delivery network, of course, is one of the strengths that WIND brought to the project from the outset, but the special demands of video delivery require a CDN overlay to this network and a dedicated approach to the video origin server. The Broadpeak focus on Quality of Experience for end-users is emphasized in the configuration and features of its origin packager/recorder and streaming servers used for the WIND project, and is reinforced by the ease of maintenance of its solutions – a combination that was key to guarantee high service availability. Broadpeak also provided the live channel capture that powers catch-up TV, time-shifting and cloud PVR services and managed the NAS storage. The architecture was designed for scalability in order to grow with customer demand without need of refactoring. Broadpeak also tuned the capacity of its regional caching servers, with the objective of providing the best fit in terms of bandwidth capacity and geographical distribution. In particular, the system has been designed to handle high peaks of traffic that can take place during special events such as sports events.

Of course, for any service today, it's imperative to be able to offer client apps across all customer device types – including mobile phones, tablets, desktops, Apple TV and the core STB offering. To achieve this WIND deployed the Zappware NEXX user interface framework in conjunction with the sophisticated streaming player SDKs and DRM services from castLabs. The PRESTOplay suite provides "API-first" player SDKs across the widest range of platforms & devices with an extensive set of built-in features such as ultra-low latency, fully customizable UI, VoD & live playback, offline playback with downloader, MPEG-DASH, CMAF, HLS, Smooth Streaming support, and more. Zappware used castLabs' SDK to build the applications for web, iOS, and Android for set-top boxes as well as acting as a CMS provider.



Integrating Android TV

To successfully capture the big screen viewing habits of its subscribers, the STB developed for the WIND service was hugely important. Additionally, the selection of Android TV as the software base for this STB was a key driver for the project. In both respects, a close partnership with Technicolor became fundamental as the company has been a Google Premier partner from the outset and brought considerable depth of Android TV STB expertise to the project, including a market leading position in the integration of significant streaming apps such as Netflix. The value of this integration is only set to grow over time with options such as voice support and operational enhancements included in yearly Android updates. And as a further validation of this partnership, it is very rewarding to now see WIND as a leading-edge operator in integration of the Netflix Operator Billing System.

Use of Android TV Operator Tier brings with it the entire application ecosystem for streaming apps through the Google Play store – including YouTube and, crucially for this project, enabling integration of the critical Netflix service. As part of the Zappware STB integration process, the environment also now deals exceptionally well with terrestrial DVB service reception, which acts as the heart and soul of the content selection when twinned with ever-popular live sports. And the whole hybrid content offer, including user preferences, is presented in a seamless way through a fully WIND branded interface and navigation solution based on Zappware NEXX technology.



Conclusions & Lessons Learned

The approach used by WIND Hellas for the successful deployment and ramp up of their new video service exemplifies the power of a strong, clear customer vision combined with top-notch implementation skills, best-in-class technology and strong project management.

It has also become a working example of the Zappware approach to perfecting the user experience – combining presentation, optimization and monetization in a continuously reinforcing cycle. It's very pleasing that the service has been recognized with multiple awards, including the Content Innovation Awards for Best UX (Cannes, 2018) and the Mobile Excellence Awards for Best Entertainment & Sports application (Athens, 2018)

In addition, a couple of key lessons were illustrated by this project that are worth highlighting:

From a UI perspective, what turns viewers into fans of this service is an interface approach that builds on a proven navigation framework, then uses comprehensive instrumentation, personalization, and operator refinement to improve the experience every time the viewer interacts with the system. The way that linear TV, Netflix and other content have been technically and commercially integrated on Android TV within this project is now a reference for other similar ecosystem initiatives.

The strategic use of an especially strong ecosystem of partners made for a smooth trajectory for initial system integration and launch. Specialist modular hardware components combined with state-of-the-art cloud services for the major software subsystems provided a flexible and highly resilient backbone for service delivery. The long term commitment of the vendors in this ecosystem is also a critical component of continuous upgrade process that's necessary for the service to thrive and reinforce its highly competitive positioning.

"Using the Zappware platform in the AWS cloud as the foundation of service deployment was one of the best architectural decisions we could have made," said Hermann Riedl, Chief Strategy & Digital Transformation Officer at WIND Hellas. "With this sophisticated back-end approach, combined with use of Android TV on our STB and a best-in-class UI/UX, we have been able to offer a new and exciting service option to the Greek audience that has reignited their enthusiasm for TV."

"Recent industry surveys have created a checkpoint that validates the alignment of our product with the expectations of the user," commented Patrick Vos, CEO of Zappware. „One of the key takeaways from the research is that user experience is as important as content in a good tv service and I think our product philosophy reflects that attitude.”

About Zappware

The team at Zappware brings a combination of creative flair and data-driven ingenuity to power award winning user experiences in modern video services. The modular architecture of the Zappware platform includes a user personalization engine, adaptive marketing layout console, and full range of client device interface frameworks. Zappware also provides a depth of experience that can help bring projects from idea to reality in accelerated timeframes, using traditional, cloud or TVaaS deployment options that best meet the customers requirements. With exceptional design, powerful technology, and a straightforward integration approach, Zappware offers operators the tools they need to continuously perfect service engagement, optimization and monetization.

To learn more, please visit www.zappware.com

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