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FIRST EDITION

HD PVR BENCHMARKING STUDY

German Market Ranking and International Best Practice Examples

[tbb*]
thebrainbehind

User Interfaces and New TV: Ready or Not?

Including information on systems, markets, players, recommendations & best practice examples

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PREFACE

Television has been the „king“ of media for quite some time now – but it is facing a mounting challenge from the internet and the inevitable erosion of its business model. While media experts have known for over a decade now that all media and communications will be transported over IP in the long run, it is important to note that the internet is evolving into more than just another TV delivery platform. It has given birth to new business models and services (Google, Facebook, Apple iTunes) and has been an irreversibly disruptive factor when it comes to full accountability through measurement for advertising.

The internet is not a „threat“ per se, but it is definitely a challenge that the TV industry must adapt to more quickly than expected, or run the risk of falling behind.

This is not only true of content production, which must speed up, but also concerning the user interface (UI). The UI is the personal guide through this new TV universe; even if the majority of TV watchers are passive content consumers who don't want to „talk“ to their TV set, an attractive and intuitive UI is the face of the service provider and must be very well designed. The challenge is clear. The internet is changing the space every day, and the TV industry does not have 10 years to rollout an innovation as it did previously. TV aggregators will need to evolve their businesses every day, otherwise they will quickly find themselves to be slow-moving dinosaurs losing their market share to fast-moving internet content providers. Without a strategy to adapt and innovate the current model, this is the inevitable fate of the incumbent TV service provider. „Evolution“ in business as in nature is about the survival of the fittest. When is the last time you saw a dinosaur? Yes, in a museum.

So, what are we trying to say? TV is a visual medium, and if the TV industry, mainly the PayTV operators, don't want to risk losing major portions of their market to disruptors like TV set manufacturers, Free-to-Air platforms or PC and Games Console to

name only a few, they must find ways to interact with customers without alienating them with poorly designed UIs or menus overloaded with complex features all at once; unfortunately bad user interfaces (UIs) have been a long tradition in our industry. This must change. So we thought it might be a good idea to take a look where we are in terms of UIs in the TV world. Though we operate internationally, serving customers around the globe with our network of consultants, this study will focus on the German market. Why? Because despite the fact that Germany has not been at the forefront of the digital television evolution, nearly all the important operators in this market launched new high definition personal video recorders (PVRs) this year and or have revised their UIs. A thorough analysis of this unique market thus proved a worthwhile endeavor producing some surprising results along with some very significant determinations:

There was for example, marked progress in the development of the UIs for advanced set-top boxes in Germany. And the results were in some cases unexpected. Good or bad ratings did not follow company size and contenders definitely benefitted from having newer hardware. Despite a 4 year development curve on their current HD PVR, Deutsche Telekom, for example was not at the top of ratings. By the same token, neither Kabel Deutschland (Germany's biggest TV operator) nor the leading international PayTV company Sky, which took a decade to launch a PVR, achieved top ratings across our criteria. By contrast Unitymedia, which spent less time in development compared to most, struck out with a clear vision, supported by a good team of vendors and technology partners and got the job done landing in the top percentile of our study.

What else is surprising? Our research will show that it is not the best strategy to launch an advanced box without having some basic services in place. In fact, none of the major German cable operators had a VoD service in place when they launched their new, interactive HD PVRs; Unity didn't even have PVR functionality at the time. On the other hand, none of the UIs we benchmarked were really terrible. The bad news is that none of them provided any new or innovative features, nor did they manage to incorporate the types of „standard“ features digital (triple play) customers might expect in a way that would enhance the service experience and in turn customer loyalty. Most subscribers want a box they can „live“ with, not another technical problem to overcome in their precious leisure time.

And It came as no surprise is that the connected TV services we looked at will not be able to „attack“ the network operators as long as they are devoted to outdated „walled garden“ business models that has been their strategy for almost a decade now. On the other hand, IP will be ubiquitous and they will not be bringing their own content channels to the party, but will rather be competing for a piece of the incumbent TV pie. This will include disruptive forces from TV set manufacturers, to Microsoft, Apple, Google, even remote control makers like Logitech (part of the Android strategy) and others.

In this study we offer a valuable critique of current problems with fresh, unbiased eyes, coupled with recommendations for achieving future best practices – this is our job as consultants. Germany is advancing and can now be classified as part of the developed world in terms of UIs, but it still has some catching up to do. This study will show that „best practices“ are still to be found elsewhere in light of most of the offerings reviewed herein. This is not virgin territory, we can help by illuminating problems and pointing out solutions operators, manufacturers or vendors have already successfully implemented elsewhere. A look around will not preclude all mistakes, but many of them. This is certain.

That being said, the purpose of this edition of the benchmarking study is not to delve deeply into individual services and applications. This will be covered in a subsequent research slated for publication in early 2011, once all the players in the German market have launched services currently in development. Notably, Vodafone, soon to go live with their own service, which we are previewing already – So stay tuned!

About [tbb*] thebrainbehind GmbH:

[tbb*] thebrainbehind is a strategic consultancy (based in Munich and Berlin) focusing on all areas of the converging multimedia industry, with a focus on product development, product marketing and strategic market entry strategies. We provide in-depth support for our customers in the areas of digital (Pay)TV, broadband internet, IPTV, VoD, WebTV, MobileTV and Networked Consumer Electronics.

[tbb*] thebrainbehind is known for their short response-time in case of urgent requests as well as for long-term strategic advice. We ensure a 360° overview before starting a project and then making the right decision when it comes to define a product, select vendors or partners and finally launching or improving a service.

[tbb*] has established a unique global experts network, working closely together with excellent fellow consultants. Thus, we are able to access a large pool of first-hand knowledge of international media markets and know about trends that are on the rise. At the same time, we leverage our network in the VC and PE industry to help promising start-ups and companies to get financed and prepare their business plans for these growth phases.

Our vast library of international payTV marketing campaigns and related materials (TV, print, PoS, below the line, direct mail, customer magazines) as well as our collection of videos from user interfaces of services around the globe put us in a position where we can help our customers to learn from best practice examples around the world in order to improve their services and applications on an ongoing basis and to identify the best strategies to be successful in the future.

Acknowledgment

We would like to thank our network partners Justin Hewelt (PayMedia, UK), Thomas Zier (Trill Media, USA), Benjamin Schwarz (CTOi, France) and Alessandro Petazzi (On-Cubed, Italy) for their support, ideas, feedback and contributions that have been essential to complete this study.

We would also like to thank Andrew Beutmueller for reading this study and improve the language where it was closer to be German than English. We hope you can enjoy this analysis now and will find it beneficial, even if you, dear reader, are not working in the German digital TV market directly.

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0 INTRODUCTION

Television has been the „king“ of media for quite some time now – but it is facing a mounting challenge from the internet and the inevitable erosion of its business model. While media experts have known for over a decade now that all media and communications will be transported over IP in the long run, it is important to note that the internet is evolving into more than just another TV delivery platform. It has given birth to new business models and services (Google, Facebook, Apple iTunes) and has been an irreversibly disruptive factor; particularly regarding the accuracy of ad response measurements enabled by IP services compared to traditional media and the „ratings“ system, never an exact science.

The internet is not a „threat“ today, but it is definitely a challenge that the TV industry must adapt to more quickly than expected, or run the risk of falling behind.

This is not only true of content production, which must speed up, but also concerning the user interface (UI). The UI is the personal guide through this new TV universe; even if the majority of TV watchers are passive content consumers who don't want to „talk“ to their TV set, an attractive and intuitive UI is the face of the service provider and must be very well designed. The challenge is clear. The internet is changing the space every day, and the TV industry does not have 10 years to rollout an innovation as it did previously. TV aggregators will need to evolve their businesses every day, otherwise they will quickly find themselves to be slow-moving dinosaurs losing their market share to fast-moving internet content providers. Without a strategy to adapt and innovate the current model, this is the inevitable fate of the incumbent TV service provider. „Evolution“ in business as in nature is about the survival of the fittest. When is the last time you saw a dinosaur? Yes, in a museum.

So, what are we trying to say? TV is a visual medium, and if the TV industry, mainly the PayTV operators, don't want to risk losing major portions of their market to dis-

ruptors like TV set manufacturers, Free-to-Air platforms or PC and Games Console to name only a few, they must find ways to interact with customers without alienating them with poorly designed UIs or menus overloaded with complex features all at once; unfortunately bad user interfaces (UIs) have been a long tradition in our industry. This must change. That's why we decided to do a thorough analysis of the High Definition Personal Video Recorders recently launched in the German market and see if their user interfaces „work“ for the viewers. While this study is focused on solutions available in Germany, this data is relevant to all readers interested in the subject. Since many vendors are international and most applications (like video on-demand or electronic program guides) are globally universal, it is also the goal of this study to be a source of valuable information for international readers. That's why we decided to publish this study in English after all.

That being said, the purpose of this edition of the benchmarking study is not to delve deeply into individual services and applications. This will be covered in a subsequent research slated for publication in early 2011, once all the players in the German market have launched services currently in development, such as video on-demand. Notably, Vodafone, soon to go live with their own service, which we are previewing already – So stay tuned!

2 METHODOLOGY

This benchmark study critically appraises 8 advanced HD PVR boxes available in the German market (6 network operator boxes, and 2 hybrid boxes, one operated by a joint venture of a broadcaster and an ISP and one launched by an independent start-up) regarding the usability of their UIs and the quality of implementation achieved. Based on [tbb*]'s experience and additional usability tests and research, our team of experts developed a methodological tool with more than 100 qualitative and quantitative assessment criteria to evaluate the set-top boxes from a user's point of view. All boxes were reviewed by a group of different experts to provide a consistent control scale within the benchmark study.

All applications and functionalities are reviewed according to their usability and convenience of use, but also in terms of availability of features that we would expect from an advanced VoD or PVR service for example. This break-down allows a qualitative evaluation of the correlation between the variety of functionalities and their implementation quality, as well as an overview of the impact of particular functionalities on the overall usability of a set top box (STB).

Therefore, this expert analysis aims to provide the reader with a clear picture of the available products and services in Germany and how sophisticated they are from a usability point of view. The assessment considers all relevant usability aspects, which should be taken into account when developing and running a STB or rather a PVR. In addition to a detailed illustration of the separate boxes regarding their performance, all segments and applications are illustrated with "Best" practice examples, to give additional suggestions for the optimization of the boxes in the market now or for the better planning of the next generation of upcoming boxes.

2.1 EVALUATION SEGMENTS AND CRITERIA

Overall, the usability analysis focuses on navigation, orientation, presentation and the interactive design of the systems as a whole. Applications such as PVR functionality are separately appraised. In consideration of the variety of applications and functionalities, the evaluation criteria are organized in respective layers and sub-layers; while all layers are weighted in relation to their importance to the overall attractiveness and usability of the system and service.

The evaluation is based on a scale from 0 (bad or simply non-existing) to 10 (very good). Services or features that are not live (yet) on certain boxes have not been rated, so a box without a VoD or PVR service is still comparable to the rest of the devices, since this missing section is not compromising the average „grade“ for this specific platform – although we admit that it is easier to achieve good results for General Menu Design than for a PVR application. Another reason why we will publish a new edition of this study after all operators in Germany have launched their advanced services within the next 6 to 9 months.

The first layer is concerned with important characteristics and main applications, including: Configuration and Set Up, Main Menu, EPG, VOD and PVR. The second layer considers the usability of respective sub-functionalities and features within one of these applications. Examples include comprehensible test navigation through and a well-structured arrangement of the separate menus and programs in the main menu or the scale of possible individualization regarding the presented contents and services in the VoD environment.

2.1.1 Configuration and Set Up

The first hurdle in the benchmark is an evaluation of the box configuration and set-up of the box. This is vital, since the first interaction between customer and a new system can have a major impact on the customer satisfaction and brand loyalty as well as the adoption of new products. The process must be as convenient as possible. Most average users choose to set up the box and see what happens before taking a look at the attached guidelines, another reason why more and more operators send installations teams to the customer premises, as well as to avoid call center overload. Therefore, a simple plug and play installation with subsequent interactive guidelines or multimedia escort would be advisable to ensure that the first contact is an easy and positive experience, especially if no installation service is offered. Cable companies have an advantage over IPTV providers here, but we should not forget that for many households, especially elderly people, any installation process is an unwelcome aggravation. In addition, further settings for personalization, especially in relation to a multi-user home,

are considered when evaluating the configuration and set-up process. If we look at the German market, we also have to take into account that some services are installed by the operators' installation teams, so most difficulties of these sometimes tricky procedures are avoided anyway.

Evaluation Criteria Configuration & Set-Up		Weight
Installation Process	Considers the installation process in relation to its straightforwardness, to guarantee a fast set-up even for a technical "noob". Plug & Play with a subsequent multimedia guideline would be an example for a high score here.	2
Basic Settings	We see some settings as the basis for further individualization of the system, even in a multi user home. For example, user profiles can't even just be used for different settings, but also for recommendations and automation in almost all applications.	1

2.1.2 General Menu (Navigation and Presentation)

Especially for the new generation of digital TV boxes with more and more supplemental applications, straightforward navigation and a well-organized menu is likewise more and more important. This applies not only to the main menu but also to application sub-menus. Zapping and loading times as well as the smoothness and fluidity of transitions between the menu layers or programs must therefore be evaluated according to above average standards. On top, the overall navigation is also evaluated in relation to the remote control - its button layout and functionality and if this set-up is corresponding to the on-screen menu structure.

Evaluation Criteria General Menu / Look & Feel		Weight
Menu Structure / Navigation & Orientation	Navigation and orientation are key for all interactive systems, but they are particularly important for TV solutions due to the limited screen space. While navigation addresses the question of how to get from point A to point B, orientation addresses the question on where the user is relative to the system. Navigation is enabled through elements known from the internet allocated either horizontally or vertically on the left side of the screen.	2,5
Categorization / Presentation / Branding	A good menu structure is always supported by a good layout and design, including clear labeled menu items or use of color for highlighting or marking for example. In addition, the use of symbols or other signs for orientation is considered when analyzing the system. To integrate the brand in the system, we also reviewed the product regarding branding characteristics.	1,5

3.4 Preview: Vodafone Germany Sagemcom STB

Product Information

Vodafone is Germany's second largest telco company, No.2 in the mobile market and also one of the top players in the German ISP market. In 2009, Vodafone decided to give up previous broadband video services (under the old Arcor brand) and launching a hybrid service should be the best alternative. The service launch is expected around Christmas 2010.

It will be quad-tuner STB, focusing on the analog cable and digital satellite markets, servicing VoD and some other services over IP – and also offering TV channels over IP. They might try to get them from DVB platforms first in order to save streaming costs, but in some cases it might not be possible, so IPTV remains something of a fall-back scenario. This will also allow Vodafone to offer channel packages aggregated exclusively for their service.

Vodafone publicly showcased a demo version of their service at IFA 2010, so we can make initial judgements about their user interface – but certainly we can't fully compare it as comprehensively as the other boxes examined in this study, since it is not a live service and the UI is also not fully implemented yet.

But what was shown left a good impression, and what was especially intriguing was the fact that Vodafone seems to be a lot more adventurous and design-oriented than most of their German competitors.

First Demo Service Review

Vodafone remote: clear design, no sign of a PVR or VoD button though. The layered service structure is launched by pressing the red Vodafone logo. We don't think that a central navigation area with 15 buttons on a rather small space is an optimum solution.

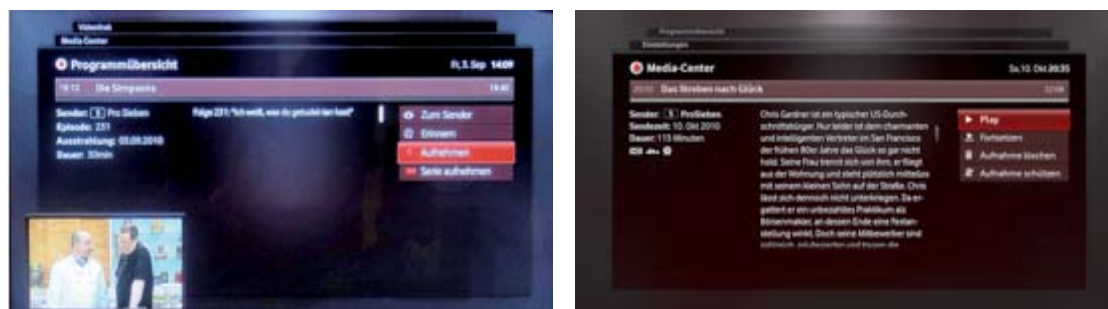
Vodafone's demo did not have a designated menu start page, but rather a file card-based approach (a bit like Verizon Fios in the USA) – and they seem to be planning to start with three application layers (EPG, Media Center/Planner and VoD) plus a "settings" area. The PiP window is not static, but is animated and "shrinks" down to its position. Vodafone is considering integrating CatchUp TV in the section of the EPG to the left, meaning it will allow backwards scrolling in time. Color codes will then help to distinguish the different layers of content. Something that seems not to be implemented yet is an indicator at the current time – and the somewhat truncated field for the channel names sometimes leads to illegible results, something that TV managers certainly will not like. Vodafone acknowledges this will be optimized in a later release.



The Vodafone EPG provides the opportunity to sort the EPG in term of favorites or genres

Pressing the Options button (see screenshot) opens up a dropdown menu listing all kinds of genres, the EPG is then sorted respectively, also offering the typically German category of “Hauptsender”, namely the bigger German channels that were granted a full license by the media authorities.

The zapper (below) allows easy scrolling, setting of recordings and offers a “detail” link, leading to additional information, which is also layered, jumping to the next channels in a nicely animated banner carousel way that offers a feeling of fluidity and modernity, without being hyperactive.



Program detail: Screenshots from IFA Berlin Live Demo (left) and Vodafone Lab (right)

The synopsis page is rather normal, offering reminders and recordings, automatically displaying the series link if the program allows it and offering possibilities to delete or protect recordings. The different UI colors that can be seen here are an effect of the mixture of live demo screenshots made at the IFA 2010 in Berlin with all the light effects in a public trade show venue and the lab version of the UI made available by Vodafone.

5 FUTURE FEATURES AND SERVICES

In this study we're not only benchmarking existing user interfaces in the German market, we're also trying to raise the awareness that it might not be enough on the long run to guide users through hundreds of channels and allow them to set recordings, but that new services have to be developed, integrated, explained and sold to customers. A certain lack of experience in Germany as far as upselling advanced services is concerned must be stated, most user interfaces are quite 'conservative' and simple and it remains to be seen whether operators will be able to seduce customers based on these menus to embrace applications such as video on demand actively. The two operators benchmarked here that offer advanced VoD solutions, namely Deutsche Telekom and maxdome, are scoring below their own average for VoD, and both platforms are way behind international best practice examples if it comes to the joy of browsing. But VoD is a service that has been around for many years, but the service only has one dimension. If we look at the next 'big' thing in our market on the application side, which will be recommendation engines, we have to acknowledge that this will be more than EPG+VoD+PVR, but that operators and recommendation engine developers need a lot of clever thinking to make it 'right'. So let's take a quick look into the future...

5.1 RECOMMENDATION ENGINE & PERSONAL TV

When PVR pioneer TiVo launched its service more than a decade ago, they already recognized the power of a feature that is experiencing a revival now: automated recommendations. Tracking what users like was so important to TiVo that it even added dedicated “thumbs up” and “thumbs down” buttons to their remote controls. For every show, a viewer can press thumbs up or down up to three times, teaching and improving the algorithm. In addition, some actions (such as recording a previously unrated show) will result in an automatic “one thumb up” rating. TiVo provides a setting that allows users to automatically record suggested shows if hard disk space is available.

While this technology has been around for more than a decade, it has been subject to criticism and even ridicule from the beginning.

- “Why are TiVo Suggestions so pitifully bad?”, asks blogger Greg Linden in 2004.
- In an episode of popular US comedy series “King of Queens”, character Spence Olchin exclaims “Oh my God! My TiVo thinks I’m gay!”
- TiVo Suggestions and many other PVR recommendation engines have always been limited to linear television. On-demand and online content – although available – was never part of the recommendations.
- Independent from the quality of recommendations, the fact that many DVRs display recordings in one long list sorted by time reaches its boundaries as hard drives get bigger and recording lists longer

Newer PVR recommendation systems provide improvements the recommendations & usability in several different ways:

5.1.1 Mixing different sources in one “personal channel”

With the proliferation of on-demand and online video content on set-top boxes both on retail and operator-driven environments, some platforms try to create unified views on their recommendation. The mantra: Ideally, it does not matter where the content comes from – it matters what it is about and if the viewer likes it.

In its revised TiVo Search feature, TiVo displays results from various platforms (e.g. broadcast TV, Amazon and YouTube) in the same results list. The description page of each program contains logos and links to different sources. But: Its suggestions are still based only on TV.

One step further goes watchmi, a new personal TV service launched by German publishing house Axel Springer and APRICO, a PHILIPS venture. Utilizing similar UI paradigms as approaches already known from the music industry (Last.fm, Pandora), watchmi allows viewers to create so-called “personal channels”. These do not only learn about the viewers taste – the resulting personal playlist can also contain a mix of recorded, streamed and downloaded content in the same view. This marks a departure from traditional UI approaches that were usually sliced along the lines of platforms and directories. Similar approaches are known from the music industry where Pandora and Last.fm provide personal “radio stations”.



Pandora provides „personal channels“ for music.

The playlist is based on the viewer’s ratings and implicit usage behavior. It allows for “thumbs up” and “thumbs down” rating, learns from implicit user behavior (is the song skipped or listened to) and indicated why the song is recommended.



TiVo program description indicated availability on different platforms but does not provide cross-platform recommendations.

