

Going DEEP into Discovery

A revolutionary new solution resolves the complexities of content discovery, recommendation, usability and engagement all at once, and consumers already know how to use it

A Viaccess-Orca White Paper

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Introduction

This paper offers an in-depth look at a comprehensive new content discovery solution that combines search, recommendation and second-screen devices into a single immersive experience that invites exploration. Using a combination of sophisticated discovery and recommendation technologies and an innovative digital magazine format, it presents consumers with an endless variety of personalized TV and Web content. This modular Viaccess-Orca solution also creates exciting new kinds of revenue opportunities for content service providers.



Source: Viaccess-Orca

Current Situation

“ Traditional program guides, TV apps and online portals alone are no longer sufficient to expose all content, let alone offer up the content that consumers want, at times when they are most likely to want it ”

TV service providers and programmers know that they can provide sufficient content to satisfy consumers, by offering a range of live and on-demand programming. They also recognize that traditional program guides, TV apps and online portals alone are no longer sufficient to expose all of this content, let alone offer up the content that consumers want, at times when they are most likely to want it.

Multi-screen delivery adds the dimension of ‘place.’ The main screen for many consumers is no longer in the living room, but rather, is whichever screen the consumer happens to have at hand at a given moment. According to one mid-2013 study¹, about 26% of the content being consumed in the home is being consumed via tablets and smartphones. Another study said that 62% of networked US households (which comprise 84% of all US broadband households) use the network to stream digital media².

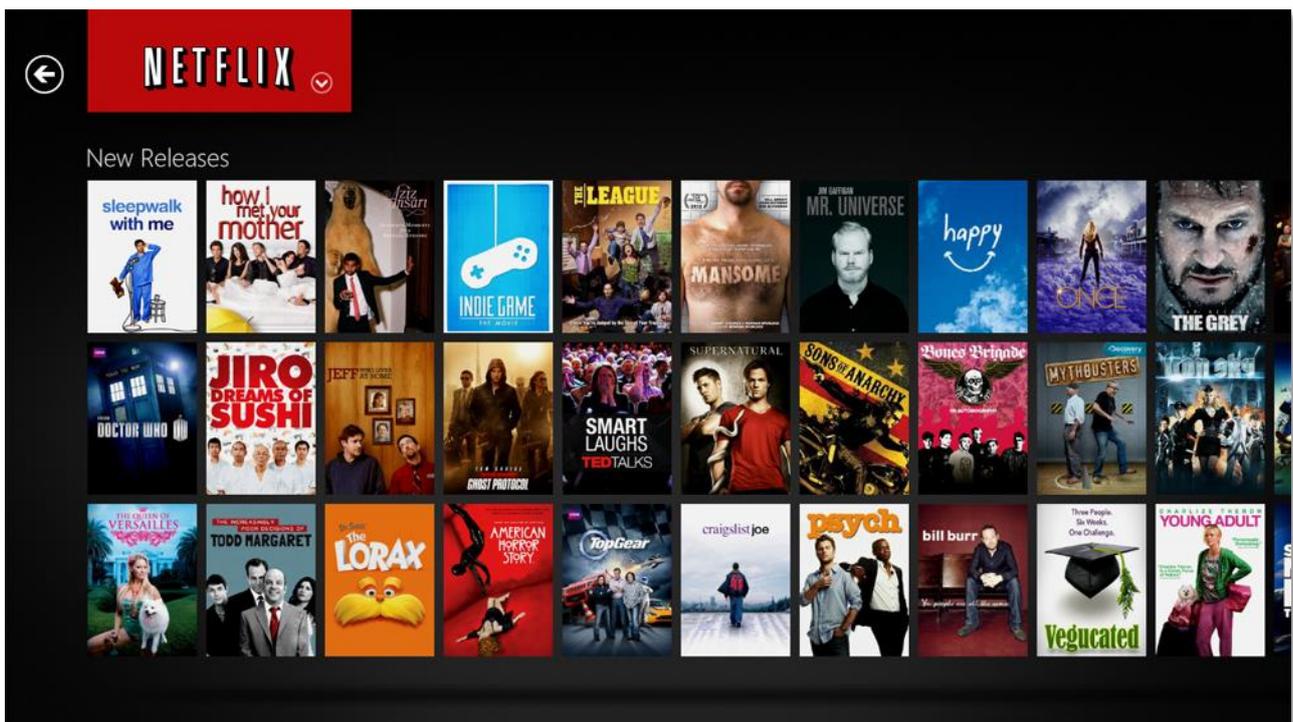


Figure 1 – Source: Netflix

Consumer behavior is another concern. TV is a lean-back medium and consumers can't be expected to follow a logical thought process while watching. One thought leads to another: "I loved Midnight in Paris and is there anything else like it? What else is from Woody Allen? How about something else

¹ Sandvine – Mid-2013 Global Internet Phenomena Report - http://www.sandvine.com/news/global_broadband_trends.asp

² TDG – see <http://tdgresearch.com/tdg-84-of-us-broadband-households-now-own-home-network-62-used-to-stream-media/>

that's funny? I should tell my friends how much I liked this." Also, multiple content providers may be competing for the consumer's attention at once.

As consumers multi-task, the TV fades in and out of the center of attention: watching TV, texting with friends, browsing the Internet; all at once. A 2013 study³ said that 36 million US consumers use smartphones and/or tablets in association with TV in 2013, which will grow more than three-fold by 2017.

Despite this, service providers try to maintain a 'first position' status, which means maintaining a presence as the consumer moves from thought to thought and from screen to screen; to come back when they're done with one program or distraction, and view other content.

Service providers also have important business concerns. Consumers have been cord-cutting to OTT and churning away to other providers. Programming costs keep rising. The need for new revenue to offset these losses is more pressing than ever. While some providers have been experimenting with advertising in Video-on-Demand and even within DVR, consumers may see them as overly invasive. There's also the challenge of advertising to the multiscreen consumer without looking cluttered or "technical."

Programmers are still skeptical about the potential of online TV advertising because measurement is recent and isn't yet widely trusted. This has kept some content providers from fully committing to IP distribution; creating a sort of vicious circle. If programmers remain unwilling to open up distribution, there's less content for service providers and aggregators to distribute, and therefore a less satisfying range of content for consumers, which in turn results in less scale for programmers and aggregators, and less appeal to attract advertising.

In the end, consumers may be left unfulfilled, while providers and programmers both miss valuable opportunities.

³ *Recommendation Engines Usher in the Personalized TV Experience*. June 2013. Multimedia Research Group. See: <http://www.mrgco.com/reports/recommendation-engines-usher-in-the-personalized-tv-experience/>

The Discovery Process

With all of the programming available today, the traditional TV listing formats are a solution to yesterday's problem. Consumers no longer have the patience to browse hundreds of channels and sift through on-demand libraries.

Recommendation engines already create and display recommendations by using automation to process usage history and associating it with programming that has similar metadata. They can also associate this data with the characteristics of programs that the provider is trying to promote or that's connected with a particular advertiser.

Some go further by making recommendations based on usage, popularity in social media, or by looking at the context or intent of a search.

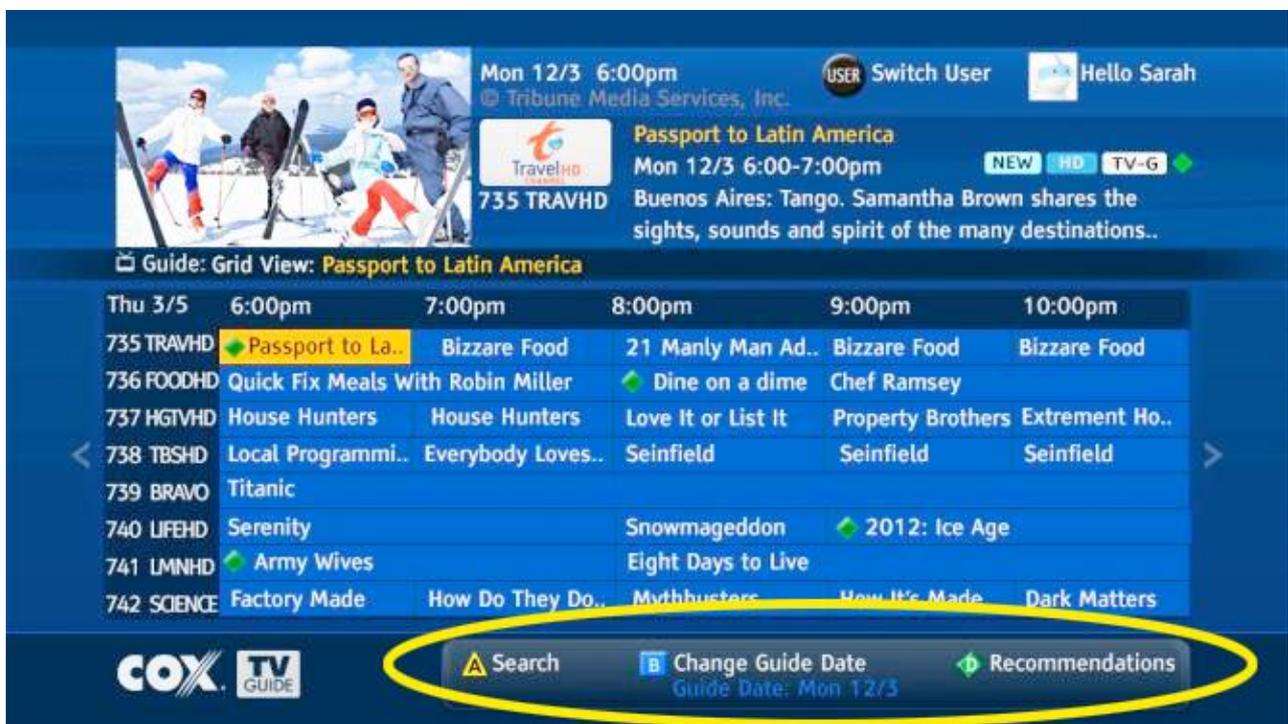


Figure 2 - Source: Cox Communication

Despite these advances, the recommendations (and the associated ad placements) made through these efforts are still easy for consumers to ignore. Users tend to click on EPG banner advertising only by mistake, and one of the reasons DVR remains popular is to skip inserted linear ads, bypassing a major revenue source. While exposing social media alongside the EPG might actually sell a VOD viewing or two by association, a Twitter feed or a "Like" on Facebook doesn't produce true engagement with the provider, which is really the purpose, after all.

And why can't the process be more effortless? Why can't TV search and recommendation auto-complete a name-search or automatically generate a list of suggestions based on past history or context?

How 'Discovery' Leads to Engagement

“ A succesful TV service consists of a set of building blocks which, together, produce engagement and immersion, not just as a bundle of enabling technologies used to create features ”

Given this state of affairs, one may conclude that there are lots of promising technologies, but that they still miss the mark. In reality, the technologies themselves are not at fault. Instead, it's that they are not being used to their full potential. Some important considerations are overlooked.

The first consideration in producing engagement is temporal: a three-step “before, during and after” process, consisting of presentation and cross-selling, consumption, and follow-through. In Step One, a consumer determines a need and begins a process of discovery that produces choices to fulfill the need. Providers create awareness for these needs through advertising, promotion, and fulfill them by using video discovery and recommendation. Step Two is to carry out the task: to watch the program.

Step Three is the follow-up. The marketer's task is to prolong the experience, and the challenge is to keep that person interested enough to stay inside the service – and as a bonus, to tell someone else about it. Yet, there has been little effort to prolong the experience: no way to explore further and therefore little justification for staying longer.

Until now, many search, discovery and recommendation solutions have been designed to bring users to Step Two. Press a button, review a static list of programs, and then decide which one to play. The recommendation has value, to the extent that engagement is produced around the content, but there is still the potential for distraction by other sources or mediums that happen to be present alongside the recommendation or at the same time the recommendation is made. This means there is still some risk that the provider will lose its audience.

A second important consideration is the user interface, a major part of the overall consumer experience. With multiscreen, there is a prevailing belief that the experience should have consistency across screens. Accordingly, TV application designers tend to create a presentation of the TV experience that looks similar on each. At the same time, good design should take full advantage of the unique qualities of each presentation medium, but often they don't.

The third consideration relates to technology. There's a gap between the search, discovery and recommendation features that individually collect requests and present information to the consumer, and the consumer's motivation to engage and interactively take charge. Some additional level of immersion is needed to bridge that gap.

We believe that a succesful TV service consists of a set of building blocks which, together, produce engagement and immersion, not just as a bundle of enabling technologies used to create features. Figure 3 shows how a TV service starts with a foundation of security: the ability to protect content from unauthorized, unauthenticated or illegal use. The first layer to be built on top of this secure foundation is the set of interactive features that enable consumers to access the content within the context of the provider's service model.

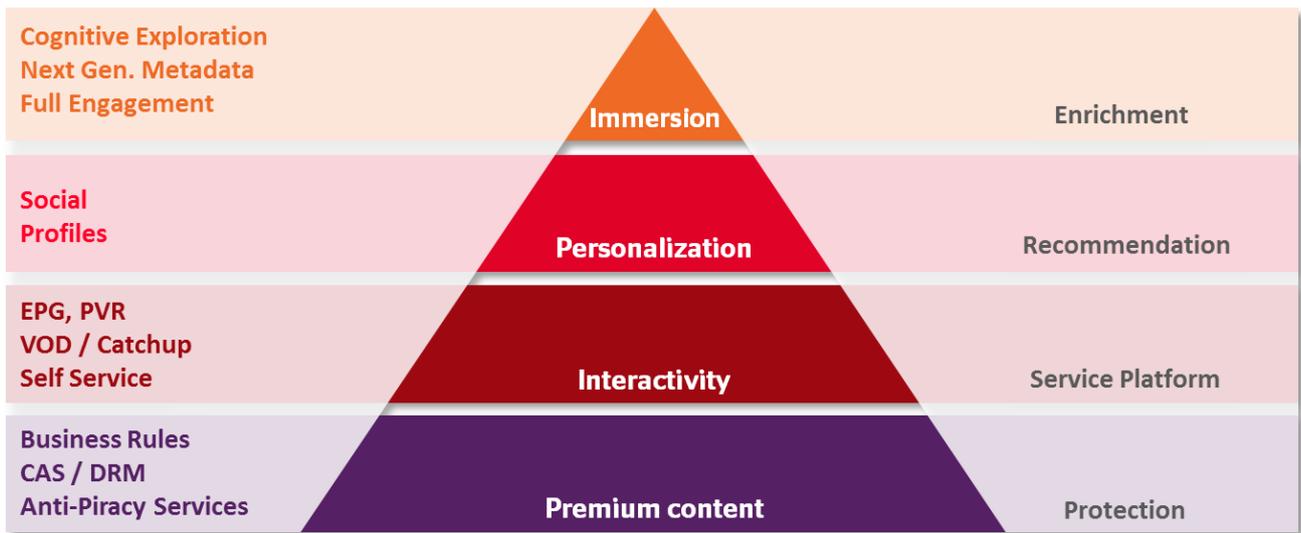


Figure 3 - Viaccess-Orca's Engagement Model
Beyond Personalization, to Immersion

Some providers add a layer to recommend content to users and to enable them to enrich their social interactions by suggesting digital media content to others. Finally, there's immersion. Earlier, we have suggested how attempts to produce engagement have fallen short: they fail to reach the peak of the pyramid. Even though some solutions may offer recommendation, they don't prolong the experience or produce immersion. They miss opportunities to produce engagement and increase monetization.

One way to achieve this summit is to look beyond the TV, but how?

Strategies for Producing Engagement

“ Moving from interactivity to immersion is a matter of considering what’s missing and filling the gaps ”

Moving from interactivity to immersion is a matter of considering what’s missing and filling the gaps in between. So let’s look at the three areas we just identified: the engagement process, visual (UI) design, and the technologies.

Effective engagement techniques have long been used by online retailers to prolong the user experience: “If you liked this item, you may also like these others,” and these kinds of automated recommendations clearly help video consumers as well. Netflix estimates that 75 percent of its viewer activity is driven by recommendation⁴. Social media and other transactional activities can also be leveraged by the provider to its advantage. Another recent study⁵ estimated that social recommendations accounted for 28% of content discovery on connected TVs, while 26% discovered content based on what they had watched in the past.

Search and recommendation can be made more valuable by using sources beyond the traditional structured forms of metadata used by providers today. The Internet is host to a wealth of unstructured information that can also be evaluated; all the way from movie reviews and the opinions of other consumers, to information about a movie setting as a tourism destination, to news about public figures and celebrities.

The second area is visual design (the user interface). Providers would do well to take advantage of the unique attributes of each device medium. On one hand, consumer expectations surrounding the TV experience are well established, and the “open Web” is not something that most TVs do very well. Also, mobile smartphones are now thought to be best for controlling the experience, although the consumption of longer-form video on smartphones is on the rise.

On the other hand, it’s easy to argue that the true potential of tablets has yet to be fully exploited. E-books and magazines have come the closest to fully realizing the potential of the medium because a tablet screen can easily be adapted to look like a page, making it immediately familiar. Then, they further leverage tablet technologies by using their connectivity, and by using functionality that they inherit from the Web, such as hyperlinking. And as an inherently visual medium, full of compelling images, there’s no reason why the tablet can’t become the most important discovery, engagement, and monetization tool of all.

It would seem that the ability to bring together the concerns of discovery and design is an insurmountable task, given the almost overwhelming amount of content and data that must be brought together, and then presented in ways that are appealing and actionable by consumers. We have already noted the limitations of the enabling technologies.

A breakthrough seems necessary.

⁴ *The Science Behind the Netflix Algorithms That Decide What You’ll Watch Next*. Article. August 7 2013. Wired. See; http://www.wired.com/underwire/2013/08/qq_netflix-algorithm/

⁵ *Connecting Consumers with Content*. Frank Magid Associates, cited in a white paper from Ooyala. August 2013. See: <http://go.ooyala.com/rs/OOYALA/images/ooyala-content-discovery-whitepaper.pdf>

The Viaccess-Orca Content Discovery Solution

“ The automated generation of digital magazines for movies, TV shows, cast members and topics is a key value of DEEP. Viaccess-Orca recently proved this capability as part of a trial of DEEP with a large broadcast network in the US. During the course of this trial, Viaccess-Orca received around 100 movies and TV shows with basic metadata as part of a certain broadcast channel. Within 24 hours, DEEP had generated a thousand different magazines for TV shows, movies, actors, article topics and more. All completely automatically. ”

Over time, content service providers have grown increasingly aware that they need more effective content discovery. To fulfill this need, Viaccess-Orca offers an innovative content recommendation platform which – in addition to providing search - uses sophisticated algorithms to make personalized, socially-informed and semantic recommendations to consumers. These algorithms evaluate a wide range of attributes, including usage patterns and request history, external ratings, popularity, the age of the content, and the promotions being run by the provider.

To complement its content recommendation platform and take it to the next level, Viaccess-Orca introduces DEEP, its Data Enrichment and Engagement Platform. DEEP provides a colorful magazine format that’s instantly familiar to the consumer, making the most of the tablet format. DEEP aggregates content from many data sources, and extracts relevant data from – and about – content. It also integrates automated content recognition functionality and implements automatic device discovery over home networks. The platform also includes pre-integrated monetization tools for sponsored content, context-aware advertising and merchandizing that adapt to viewed content in real time.

Earlier, we spoke of a temporal process of engagement: “before, during and after”. The Viaccess-Orca solution begins by creating awareness of the content by presenting information about the content itself as well as information that complements the content. This creates a level of interest that a simple recommendation simply can’t, and it helps lead the user to the event of consumption. The provider’s service platform then manages carrying out that task.

Not only can DEEP evaluate traditional, structured “first generation” metadata for programming in a linear TV EPG and programming in an on-demand movie catalog, but also, it can harness proprietary “second generation” metadata from unstructured content, such as stories. It also leverages licensed metadata, such as photos, scene descriptions, social interactions, reviews, and even news stories that provide additional knowledge about the content asset. For example, the platform can produce recommendations based not only on the actors, but also on the relationships between actors, such as marriages and divorces that are reported in the news. The system can search for online movie reviews based on keywords, and then use comments to fine-tune a movie’s level of recommendation in the system.

DEEP's magazine format continues to guide exploration by using recommendation to present this second-generation metadata across a variety of topics and interests, leading users to other content through association and reference where a simple recommendation may not. This prolongs the experience and thus creates more opportunity for the provider to create demand for other content.

The automated generation of digital magazines for movies, TV shows, cast members and topics is a key value of DEEP. Viaccess-Orca recently proved this capability as part of a trial of DEEP with a large broadcast network in the US. During the course of this trial, Viaccess-Orca received around 100 movies and TV shows with basic metadata as part of a certain broadcast channel. Within 24 hours, DEEP had generated a thousand different magazines for TV shows, movies, actors, article topics and more. All completely automatically.

In summary, the Viaccess-Orca solution helps providers get more from their digital investments, helps them rationalize their editorial investments, and allows them to focus on top content. Currently, Viaccess-Orca is in the process of launching DEEP in North America and Europe.

Walk-Through

Another way to look at DEEP is to use the analogy of a fine restaurant. Most people don't go to the restaurant only for the menu. They also enjoy the setting of the table, the music, the conversation and the cappuccino – the overall experience. It's the same for content. If the provider can set an attractive table, the user is likely to linger.

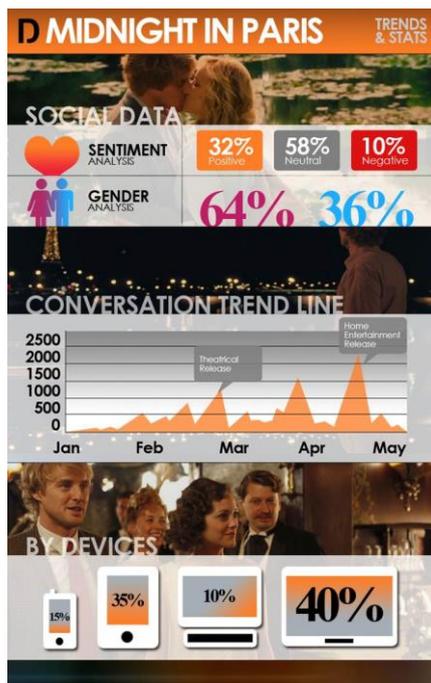
DEEP doesn't just produce a TV magazine to provide the menu. It also enriches the user experience by providing the ambience. Using our earlier three step engagement process as a guide, we have been led through Step One to discover some content. DEEP can present recent releases and titles that the provider wants to promote. In this example, it's the movie *Midnight in Paris*.



Everyone knows how to “use” a magazine, so DEEP's format is instantly familiar. Dive in, swipe the cover to turn the page, touch items to go right to them.



Easily learn more about the actors, the locations, or watch the movie trailer. Links to sponsored content and advertising can be presented with the content.



Consumers might be fascinated by an 'inside look' to the life-cycle of a movie, and how others are engaging with it.



Screens can be mashups of movie reviews, social media feeds, and crowd-sourced comments.

Once the user has watched the movie, DEEP leads the user to Step Three of the engagement process: to linger and explore.



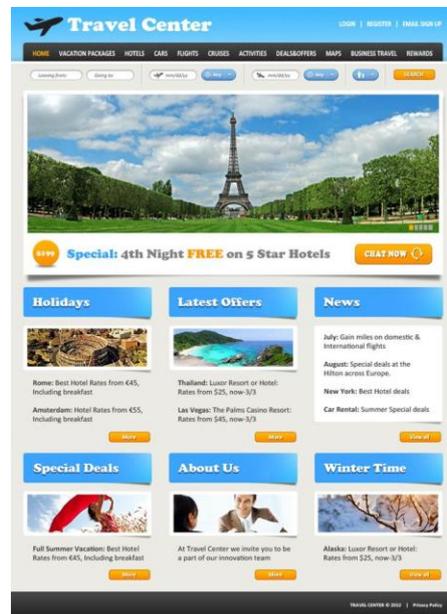
DEEP can recommend other relevant movies that align with the consumer, the content and the needs of the provider.



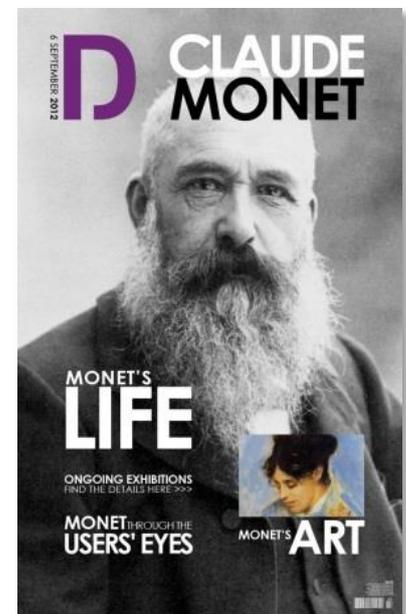
Enrich the experience surrounding a movie with second-generation metadata.



Users can go directly to watching the movie, save to watch later, or share on social networks.



DEEP can present sponsored content and ads, and then help ensure accurate revenue-sharing with the advertiser.



DEEP extracts relevant topics related to the content, and automatically generates magazines for each one.

Source: Viaccess-Orca

It's logical to ask how all of this can be done. Careful observers might conclude that the process of developing this level of data, and then producing a compelling second screen magazine experience would be hugely labor intensive.

A single pay-TV operator may have 30,000 VOD titles or more, plus 20,000 programs for the EPG; each with 5-10 actors and multiple topics to keyword. Even though this may mean as many as a million media entities for the magazine, DEEP is up to the task. DEEP identifies topics and maps the relationships hidden within the unstructured "second generation" metadata. It has the intelligence to flag or reject corrupted data, duplicated data, and fill in missing data.

The intelligence in the DEEP platform harnesses design and data to automate the content selection and visual production process. With attention to detail, DEEP can even render text in a color that harmonizes with a movie poster. All of this is done automatically by the platform.

In the field, service providers have already found that DEEP saves a great deal of time and labor effort by automating the second-screen design process. In early experience, the provider can manually produce a small number of designs, and the platform will learn enough to automate the process from then on.

For a complete "Guide to DEEP", [click here](#).

Benefits of DEEP's Magazine Format

DEEP's magazine format turns the small tasks of search, discovery and recommendation into a process of exploration, a journey. The familiarity of the magazine format invites readers to browse the ads, as if they were in print. For example, in fashion magazines, browsing the ads has always been an integral part of the reading experience.

The magazine cover reinforces the brand of the provider, the articles reinforce the operator's choice of programming and the properties of the individual programmers and studios, and the display advertising used in the magazine format can provide additional exposure for the advertisers behind the programming. Ads in DEEP are interactive, the same way that they are on Web pages. Also individual programmers can have their own electronic magazine 'supplements' within the provider's overall magazine issue.

Other new opportunities are opened by hyper-targeting digital ad inventories based on personal information and the context of the consumer's activities from moment to moment. It can be a new kind of advertising inventory, including sponsored ads, and ads from advertisers that otherwise would never have promoted their products or services on TV due to the expense.

Even though new technologies have opened up opportunities that are full of creative potential, the advertising industry is slow to adapt. Instead of making any sudden transitions, the traditional advertising models will continue, while early adopters will be open to experimentation. DEEP is a platform that more adventuresome programmers and advertisers can use to supplement traditional revenues.

Cost reduction is another benefit of DEEP. Content service providers investing in their own interactive applications are mindful of the costs involved in application development, but remain uncertain of the payoff. DEEP provides a solid framework to present content to consumers, without the need for custom development. Many service providers also incur costs by producing their own magazines on paper. DEEP's format provides an opportunity for the provider not only to save money by streamlining the editorial and production process, but also, to be 'green' by reducing the number of copies produced on paper.

In summary, DEEP doesn't disrupt the ecosystem of advertisers, programmers and distributors; it reinforces them by creating new opportunities, at a relatively low cost in comparison with traditional media.

Conclusion

“ The Viaccess-Orca content discovery solution has the potential to transform the relationships between consumers, service providers, advertisers and content providers; to everyone’s benefit ”

Consumer engagement is the highest priority for video service and content providers today. Yet, video providers that use service models and features only from the TV or only from the Web are missing the opportunity to provide a holistic experience; even when they support multiple screens. By using the best of both, providers can unlock feature and revenue opportunities that are missing from one or the other.

The Viaccess-Orca content discovery solution addresses these concerns, with important benefits:

- It’s the only solution that combines comprehensive content discovery and recommendation, an extended library of proprietary data, and importantly, a second-screen experience. It goes beyond discovery and recommendation, to provide curation.
- Viaccess-Orca provides a comprehensive platform that converts search and recommendation into immersion and engagement, using a complete “before, during and after” process.
- DEEP adds new dimensions to traditional “first generation” structured metadata, by adding “second generation” unstructured metadata such as reviews, stories, photos and more. Providers may also develop and add proprietary content of their own or license it from partners.
- DEEP can automatically create a million permutations of magazines for movies, TV shows, actors, topics and “discovery” almost completely automatically.
- As new programming and content are introduced, DEEP automatically flows them into the magazine format and presents them to the consumer-base, without any need to launch new apps.
- DEEP creates new kinds of revenue opportunities by making traditional static magazine advertising into interactive digital experiences.

Content service providers know they need consistency across linear, on-demand, and multiscreen mediums. It’s part of the anytime-anywhere-any screen experience that providers are striving for. Consistency of design across screens isn’t at odds with design that takes full advantage of tablets, and this is where DEEP excels. In fact, taking the most advantage of attributes that are unique to each type of screen helps DEEP with engagement, and it makes the experience all the more effective.

By combining the design and presentation capabilities of DEEP with its advanced content recommendation platform, Viaccess-Orca provides a comprehensive modular solution that revolutionizes the TV consumer experience. The Viaccess-Orca content discovery solution has the potential to transform the relationships between consumers, service providers, advertisers and content providers; to everyone’s benefit.

About Viaccess-Orca

As a leading global provider of content protection, delivery, and discovery solutions, Viaccess-Orca is shaping the ultimate content experience. Through its integrated range of business-savvy products and solutions, Viaccess-Orca helps service providers in the cable, DTT, satellite, IPTV, and OTT industries gain a competitive edge in today's rapidly evolving multiscreen environment. By enabling service providers to securely deliver an engaging user experience on any device, Viaccess-Orca is reinventing the entertainment landscape. Viaccess-Orca is part of the Orange Group.

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