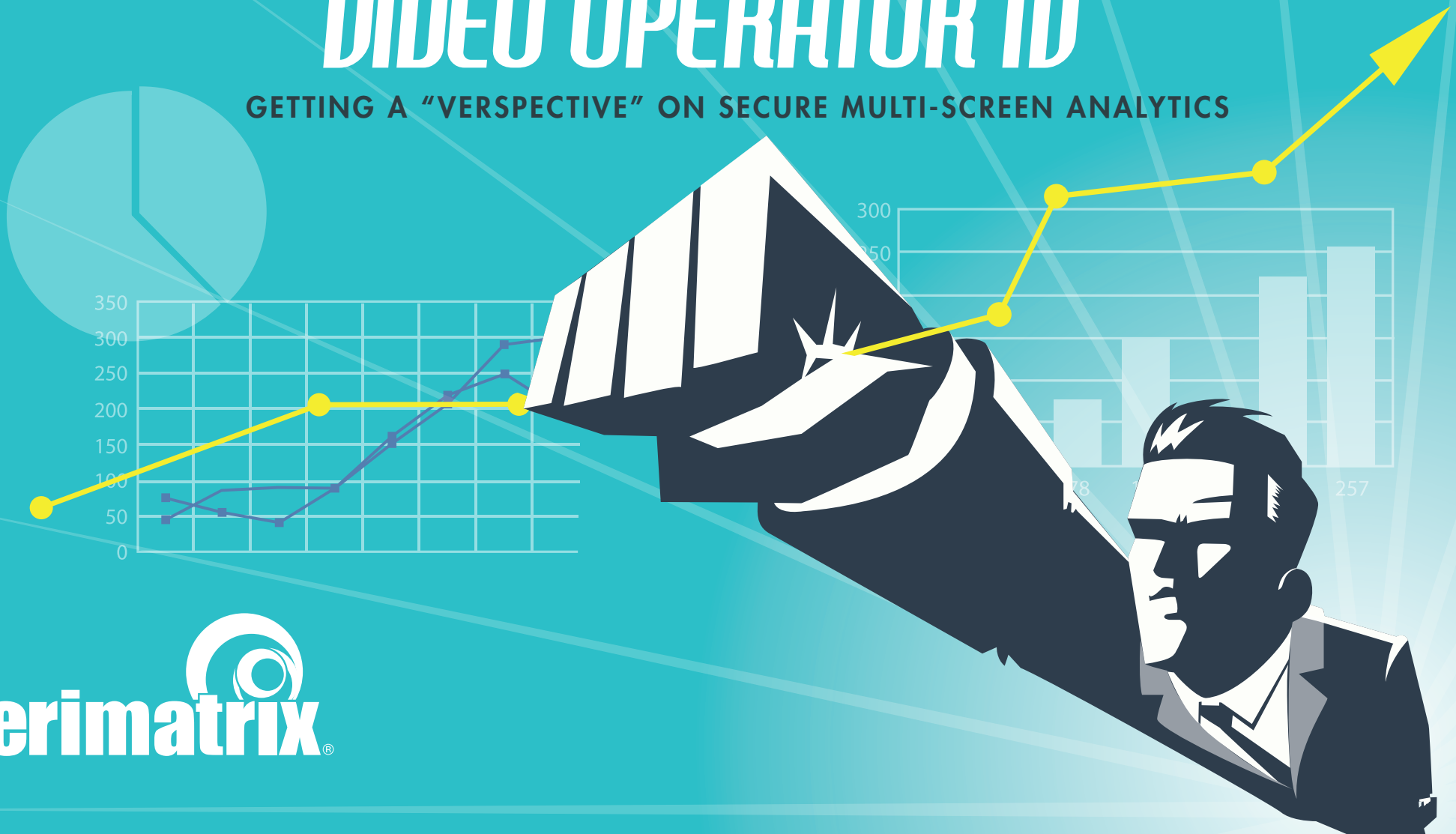
RISE OF THE SOFTWARE-EMPOWERED VIDEO OPERATOR IV

GETTING A "VERSPECTIVE" ON SECURE MULTI-SCREEN ANALYTICS



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EXECUTIVE SUMMARY

BIG data has been a buzzword in the video content industry for several years to describe the growing sources of relevant information about quality of service (QoS), customer behavior and network performance available to operators. One of the challenges lies in integrating all this data to deliver meaningful insights to improve the overall experience for subscribers, driving loyalty and combating churn. This falls under the realm of analytics, which in 2015 has become a major focus for pay-TV operators and broadband service providers, as well as broadcasters.

Analytics relies on data from multiple sources including the subscriber or client device, the delivery network, and head-end, as well as key service components such as content security. Some operators have started to collect the data but many have yet to make good use of it. As analyst group Ovum reported in August 2015, 70% of telcos have invested in Big Data analytics but only 20% have so far actually deployed it in their operations, which means that 50% are failing to achieve any benefit, while 30% have yet to make the first move. Over the next few years all broadband and video service providers will have to deploy analytics effectively to remain competitive and this means they must tackle the associated issues that arise.

Privacy and security are two of the biggest distinct, yet related, topics to consider because some aspects of the data feeding the analytics can be considered sensitive—and because the more that is accumulated, the more operators have to consider the implications of a security breach or data loss. Privacy measures will be required to ensure that personal data about user preferences or activities is seen only by people with relevant permissions, which means the data must be effectively anonymized as well as protected from eavesdropping. Security in turn can help enforce privacy rules while also ensuring integrity of the systems involved. Verimatrix is well placed to meet these challenges through our Verspective™ Intelligence Center, our innovative cloud-based engine designed specifically for pay-TV system deployment, management, monitoring and analytics, with the objective of optimizing performance and reducing operational expenses across the whole video delivery infrastructure.

One very important corollary is that through Verspective, Verimatrix can provide an additional layer of important data that operators and their monitoring systems are otherwise unable to obtain. Because of our "preferred real estate" in the network and devices, our revenue security solutions provide us with a unique capability to gather data—from secure data streams to secure data storage, as well as other infrastructure components. This means that by working with partners in the various analytics sectors, together we can give operators a secure and yet comprehensive analytics capability.

In this e-book, the fourth in our series on the "Rise of the Software-Empowered Video Operator", we discuss the benefits of an approach to analytics that incorporates security as an intrinsic component of the capability and how in cooperation with our partners we can address the challenges that arise.

THE SECURITY CHALLENGES FOR ANALYTICS

Analytics security should be woven into value proposition

The most comprehensive analytics solutions will be underpinned by data generated from nearly all parts of the video content ecosystem and, just like the challenge of media delivery, will need to consider security at every point. The clear implication is that analytics will require the same levels of security as the rest of the infrastructure. On the one hand this means that analytics should benefit from the investments in content security already made, but there are also additional specific requirements arising from emerging regulations concerning storage and access to personal data in particular. As with all aspects of data security, these challenges are best met by weaving security into the analytics value proposition from the outset, rather than bolting it on as an afterthought. This approach helps ensure the system will feature the flexibility to deal with emerging issues as they occur.

Identifying analytics security challenges

The security challenges posed by analytics overlap with those relating to the primary business of video content delivery, but with some issues of their own. The main difference lies in the need for privacy measures to protect the user's personal information, which requires the ability to anonymize data and also prevent external access to client devices. However other aspects of pay-TV security are called on to help enforce privacy, including secure encrypted communications, user authentication and device integrity. These other components also have a key role to play in protecting analytics data during transit and for restricting access to authorized users.

Another security issue for analytics data is persistence, which relates to the issue of governance in managing information correctly throughout its lifetime. Among other issues of adherence to stated policies and changing regulatory regimes, this may mean assuring the right of personal consumer veto mechanisms on data collection and storage.

Secure communications

In some cases, existing secure encrypted communications already employed for video delivery can be recruited for analytics data, which has a similar requirement to prevent unauthorized access in transit. Operators with software-based and IP-enabled solutions are best placed because these are far more flexible and can be extended to multiple screens and protect all the devices from which analytics data may be collected.

The ability to integrate content security systems seamlessly with diverse head-ends, set-tops, smart TVs and other connected devices has become critical for pay-TV services as they

expand to embrace multiple screens. It is becoming equally crucial for securing Big Data analytics. Return path data from set-top boxes and, to an even greater extent, data from consumer electronics devices, such as smart phones and tablets, can encompass a lot of personal information that is covered by various data protection legislation around the world. It is essential therefore for operators to guard this information from theft or eavesdropping as rigorously as their premium content.

Authentication

Pay TV has traditionally relied on authentication of the set-top to enforce conditional access (CA), but this has evolved to embrace client device authentication alongside subscriber entitlement management. There has recently been a trend towards combining device authentication techniques with other pre-existing authentication information to enhance consumer security while keeping the experience as simple or "frictionless" as possible for the user.

When it comes to analytics in a multi-screen world, a frictionless identification scheme adds critical value as consumers divide their viewing time between different screens, as was pointed out by Carol Hinnant, Senior Vice President of National Network Sales, Advanced Media and Information Division at Rentrak, a leading provider of consumer viewership information. "That's where the authentication is so valuable as it allows access to a stream of data from a unique user perspective," said Hinnant.

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>
> - Carol Hinnant, Rentrak

Data privacy and governance

A significant amount of valuable analytics data is personal, relating to individual preferences and behavior, and as such is covered by policies that operators establish as a part of the customer sign-up process, as well as diverse data protection regulation around the world. As Giles Cottle, Director of Consumer Insight Products at viewer insight specialist Genius Digital, pointed out, it is important for analytics firms to take account of differences over governance and data protection between markets. "For example, a customer might be registered as a financial services company in one market and have to store credit card data on site rather than in the cloud," said Cottle. That would mean any integration of that data and subsequent analytics would also have to be performed on a more localized basis.

The trend is towards greater restriction over personal data, as in Europe where the European Union (EU) is currently strengthening protection by requiring consumers to be given more information about their data if they agree to share it and also rights to erasure, as well as portability between service providers. Such regulations have ramifications for operators and need enshrining in their own governance and data security policies.

"Our technology coupled with theirs (Verimatrix) can provide a much better view of all the activities of the cable account."

- Bill Feininger, Fourthwall Media

missing from television advertisements, online and reach them in an efficient and cost effective way. Advertisers can then place ads not just on specified TV channels but also selected web sites as part of the same campaign."

Verimatrix can provide much of that complementary information. "Our technology coupled with theirs can provide a much better view of all the activities of the cable account," said Feininger.

Another aspect of audience measurement is the value of aggregated data as a commodity. This point is highlighted by Genius Digital. Verimatrix has integrated with Genius Digital's return path collection technology called Mirimon to obtain aggregated data with a view to turning this into a product our operator customers can sell and make extra revenues from.

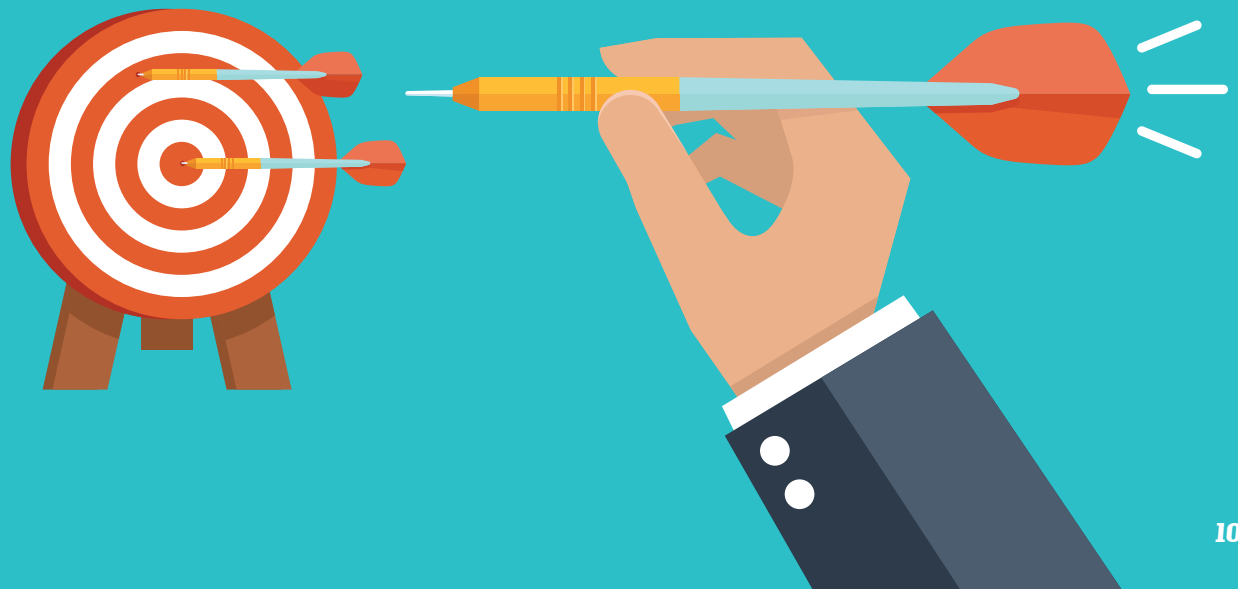
"We can see a really valuable model where Verimatrix is helping operators to resell this data to interested third parties such as agencies and brands," said Cottle of Genius Digital.

Recommendations and personalization

The growing use of connected devices, both as companion screens to the main TV and for viewing in their own right, has created greater scope for engagement through personalization of individuals within existing household pay-TV packages. Each member of a household can be targeted with recommendations and potentially ads tailored just for them and sent to their own device, whether in companion mode or accessing content directly.

This requires two things, firstly a powerful recommendation engine capable of making relevant and interesting content suggestions to users based on their known preferences and character. Secondly, it needs accurate data about the user's online activities and particularly what they are viewing at any given time.

ThinkAnalytics, a leading video search and recommendation specialist, relies on accurate and comprehensive viewer data to personalize its powerful engine to individual subscribers. "We're working with the customer data to obtain viewing patterns and also analyze all the metadata, that is the information about the program," said Eddie Young, ThinkAnalytics CEO. "Put those two together and you have the information needed to drive advanced search and recommendation that's personalized. We call this Intelligent Navigation, where two different users who navigate to the same screen can get different content presented to them, one we know prefers brooding crime dramas whereas the other likes heartwarming and engaging comedies."



"They (Verimatrix) are securing the content and the service. We're coming over the top of that and personalizing that service."

- Eddie Young, ThinkAnalytics

ThinkAnalytics and Verimatrix offer natural synergy between their respective products. "They are securing the content and the service. We're coming over the top of that and personalizing that service," said Young.

Adobe has also appreciated the potential of analytics to enhance the customer experience. "We have extended the scope of our web analytics to address the lifetime value of the user and determine how best to drive engagement by understanding preferences and attributes better," said Adobe's Kumar.

Adobe's reasoning is that its pay-TV customers badly need to personalize their experiences in order to stay relevant in the multi-screen age. "Apart from Netflix and a couple of others, pay-TV operators haven't taken on data as core for how they make decisions. We think that will have to evolve. That is why we've decided to focus on customer based analytics."

Customer gain and churn reduction

Gaining new customers and combating churn among existing ones are closely related, but the role of analytics is rather different in each case. For gaining new customers, analytics figures more at the aggregate level, assessing what kinds of offers have worked best in the past and how to match these to particular target demographic groups. When it comes to churn, we are reviewing individuals and identifying their day-to-day viewing behavior combined with factors previously identified, to identify the subscribers that are most at risk of leaving.

The ultimate goal for pay-TV operators is to harness their full range of content and persuade subscribers to venture beyond the narrow band of, say, six to eight channels to which they are normally confined. According to Young from ThinkAnalytics, intuitive recommendations can not only increase the number of channels and programs people watch, but also get them to consume more TV altogether, with correspondingly increased levels of satisfaction, reduced churn and greater upselling opportunities to boost ARPU.

Genius Digital is an analytics company that specializes in churn reduction and points out that this occurs for a range of reasons, some of which, such as changes in household circumstances, are beyond the operator's control and can be identified as being a waste of effort attempting to combat. But viewing data can provide vital clues often previously not available to the operator about when somebody is on the verge of leaving for some other reason than what can be ascertained via traditional CRM measures. The potential for intervening to effectively nip churn in the bud is increased in the multi-screen era because individuals of a given household can be targeted with specific offers, taking advantage of data about their own cross platform viewing habits.

"For example Verimatrix could take the data from our Insight Platform and put that into the operator's churn model."

- Giles Cottle, Genius Digital

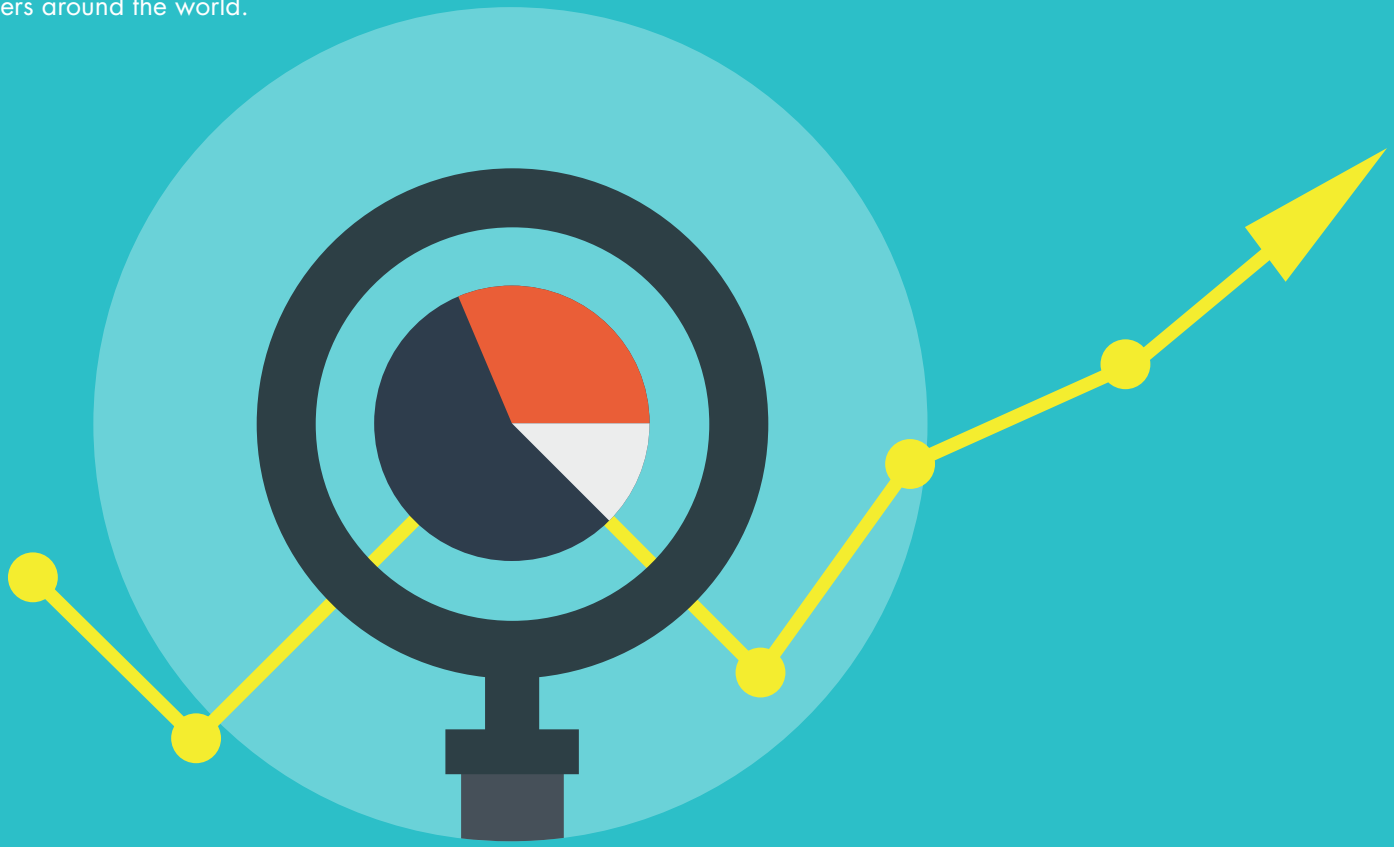
Such data can also pinpoint causes of churn more accurately. As Genius Digital has found, existing return path data can be combined with other information that an operator or broadcaster has available from multiple screens, to define patterns that indicate a customer may be at risk of leaving. Genius Digital can build its own churn models, or provide data to those run by third parties or the operator itself, as Cottle pointed out. "For example Verimatrix could take the data from our Insight Platform and put that into the operator's churn model."

Genius Digital uses the return path data that its software collects, as well as CRM data, subscriber history and other account information provided by the operator, to create a viewer-centric churn model. Such a model should have a strong focus on the viewer and take a holistic approach aiming to keep abreast of three fundamental questions, Cottle added. These are which subscribers are most likely to churn, how those subscribers could be stopped from leaving and also how to stop those subscribers from being "at risk" of churn in the first place. With the help of additional data becoming available through partnerships across the ecosystem, operators are better placed to address that all-important third question, which reduces the need for efforts to entice customers on the verge of leaving to stay.

CONCLUSION

Analytics has become a major component of pay TV with the fundamental aim of maximizing total customer engagement, whether with an operator's pay-TV service or a broadcaster's content. Engagement equates to revenue from subscriptions, pay-per-view or advertising. Data is the raw material of analytics and gains value through integration across multiple sources to build a complete picture of the customer experience. This takes account of the delivery quality and the ability of subscribers to find what they want to watch when and where they like.

As the specialist in revenue security, Verimatrix has a crucial role to play in analytics, both in securing the analytics ecosystem and sourcing some of the critical data. By outlining its security contributions and collaboration strategy with diverse partners across the analytics ecosystem, Verimatrix and its Verspective Intelligence Center are poised to add value for our customers around the world.



VERIMATRIX – SECURING THE CONNECTED FUTURE

Verimatrix specializes in securing and enhancing revenue for multi-screen digital TV services around the globe. The award-winning and independently audited Verimatrix Video Content Authority System (VCAS™) and ViewRight® solutions offer an innovative approach for cable, satellite, terrestrial and IPTV operators to cost-effectively extend their networks and enable new business models. As the recognized leader in software-based security solutions for premier service providers, Verimatrix has pioneered the 3-Dimensional Security approach that offers flexible layers of protection techniques to address evolving business needs and revenue threats. Maintaining close relationships with major studios, broadcasters, industry organizations and its unmatched partner ecosystem enables Verimatrix to provide a unique perspective on digital TV business issues beyond content security as operators seek to deliver compelling new services.

LEARN

For more information on how the Verimatrix Verspective™ Intelligence Center can address your secure analytics needs, please visit www.verimatrix.com/verspective

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