Furthermore, the television industry is forecasted to maintain healthy growth amid a rapid rise in competing online video solutions. One metric for measuring the broadcast business is in the analysis of advertising[9] revenue. As shown in Figure iv, ads for local television stations experienced a dip from 2006 to 2009, however there has been a steady rise since. Even if growth is in single digits, it is growth nonetheless. Traditional television revenue growth continues to show a stable and upward trend[10].

Broadcast for the Digital Generation

The multiscreen experience has significantly widened the choice for how subscribers receive their content. The living room television is no longer the only lean-back experience - tablets and mobiles also offer a unique approach to viewing content. Internet video introduced the notion that self-produced short-form videos[1] (less than 10 minutes), are not just a fad but an alternate form of entertainment[2]. Whether short-form or long-form, it is no longer necessary to buy video in excess of what is consumed –subscribers now have the ability to obtain exactly what they want, thanks in part to multiscreen viewing.

In the foreseeable future online video is expected to dominate the daily consumption of content. But the predictions of a broadcast demise due to multiscreen, have been exaggerated. Consumers are increasing their viewing experience with alternate online offerings such as YouTube[3], Netflix[4], and Hulu[5]. In spite of recent studies, habits have not changed significantly from traditional TV viewing[6]. A recent study by Ericsson (Figure ii) shows that consumers are migrating from a *passive* viewer to an *active* user state, where new services are being offered *on demand*, and to multiple screens[7]. In any case, as indicated by this study, although there is a steady shift towards internet video, linear television[8] still maintains a key position in the viewing habits of subscribers.

> Internet video services may be viewed as disruptive to traditional television ...
> But it won't be dethroning broadcast anytime soon.[11]

Nevertheless, some media still portray the state of linear

Type	Cinema	Television	PC, Laptop	Tablet	Mobile
Aspect	2.39:1	16:9	16:9	4:3 & 3:4	3:2 & 2:3
Experience	Lean Back	Lean Back	Lean Forward	Forward & Back	Forward & Back
Interaction[1]	100 min.	43 min.	39 min.	30 min.	17 min.

Figure i – Comparing the Multiscreen viewing Experience

broadcast (aka. live television)[12] as steadily dying, in contrast to the growth in online video. Some even predict the demise of television to echo the fate of newspapers[13]. Just *google,* "death of broadcast television" to see the latest dire opinions of journalists. The origin of TV's demise are rooted in recent subscriber trend reports. For example, Alcatel Lucent Bell Labs[14] predicts that by 2020, only 10% of viewing in the U.S. will be via linear TV, compared to 48% in 2012. Almost *50%* of video will be consumed using OTT (Over-the-top content)[15] by the end of this decade, and another *33%* will be using VoD services. Additionally, daily viewing is expected to increase from 4.8 hours per day in 2012 to seven hours per day in the next eight years. This change will be driven by a *twelve fold* increase in internet video content, according to the study.

Broadcasters continue to be the Ocean Liners of this market[16] - not just because they are huge and have the most money to spend, but because they know their viewers well and are still the flagships of video monetization. Ultimately, broadcasters are in an excellent position to capitalize on the current evolution of subscriber behavior. However, as with most new technologies there are big boats, well-funded, directed with huge capacity. Then there are smaller faster and flexible boats, able to quickly address what the big guys

Average Viewing per Device
In 12 Markets: US, UK, China, Spain, Sweden, Brazil, Taiwan, South Korea, Germany, Mexico, Chile, Italy

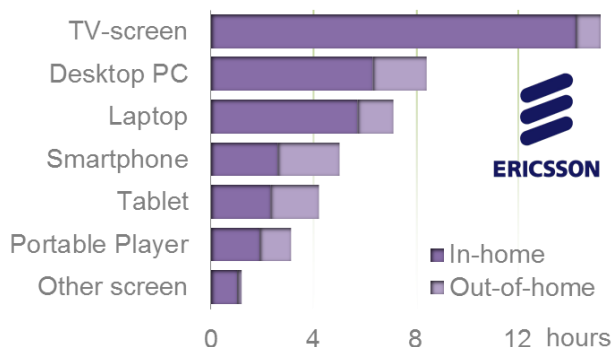*Figure ii - Average Viewing per Device across 12 Markets*

have missed (or maybe even fast enough to grab some clients before the bigger boats hit port). Compared to the traditional broadcast industry - which is over 60 years old - online video has only recently entered into the mindshare of consumers[17]. With so many suppliers[18] vying for market share one could infer that this suggests a young market that promises growth and eventually consolidation[19].with the ocean liners steadily incorporating and mimicking the activities of the smaller, faster players.

For these ocean liners to survive in a multiscreen world, consolidation will occur, and take shape in many forms. One may be Telco providers acquiring video platforms to complement their service portfolio. After all, Telcos and content delivery network (CDN[20]) operators are responsible for supplying video traffic reliability to their subscribers. Their services are easily complemented by offering cloud-based video to host all of that content. A recent example of this is the acquisition of Delve by the CDN provider Limelight[21]

Figure iii - Time Spent Viewing per day, by Type[22]

Another example are *design and build* video solution providers that will continue to seek partnerships to widen

Figure iv – Television Station Advertising Revenue Forecast

their geographic reach – resulting in cross-sell[23] and up-sell[24] opportunities.

In addition, equipment manufacturers offering partial solutions to an OVP (Online Video Platform[25]) infrastructure will acquire suppliers to complete their product offering. Still other companies may acquire for the purposes of building Intellectual Property[26] assets to increase their opportunity footprint.

This multiscreen ocean is certainly big enough to accommodate boats of all sizes and shapes.

Analog Dollars to Digital Gold

The economic climate over the past few years has been a wake-up call for broadcasters[27] looking to streamline their workflow and cut costs. This has helped drive a migration to digitalization and then logically extend their libraries to internet video services. This can significantly lower costs compared to expensive hardware-based broadcast equipment, and becomes a necessary foundation for multiscreen video consumption.

So, despite budget cutbacks in ICT[28], consumer demand has helped push the migration of investments to online video, and build these new infrastructures. Throughout the latest economic down-turn, the need for multiscreen solution providers remains strong. This is largely due to the requirement of migrating legacy-based *tape* systems to an internet-based *file* system.

All of these changes require expertise in both traditional and new disciplines. As common sense dictates; the better a supplier speaks the language of the client, the higher the chances of a successful installation. It follows that suppliers with a background in both traditional video and *new media*[29] video will prove to be the most successful players.

The recent recession has not affected all regions equally. Emerging, dynamic markets such as Central & Eastern Europe, Africa, the Middle East and South-East Asia have been a blessing to *solution providers* operating internationally. Although budgets are typically smaller in these emerging markets, the sheer quantity of projects is a boon to suppliers trying to maintain healthy revenue streams. In some cases these new technology investments allow these markets to leap-frog western counterparts.

So how will the traditional broadcast industry adapt and overcome these rapid changes in subscriber behavior? Well, it certainly won't happen overnight. But speed, agility and sheer will are necessary to survive and thrive amid evolutionary changes. The digital video world is no exception. Curators of content - those who produce, own, or distribute video - are perfectly positioned to capitalize on this massive market growth - Both in the use of multiple screens, and in the increased duration that subscribers are watching video.
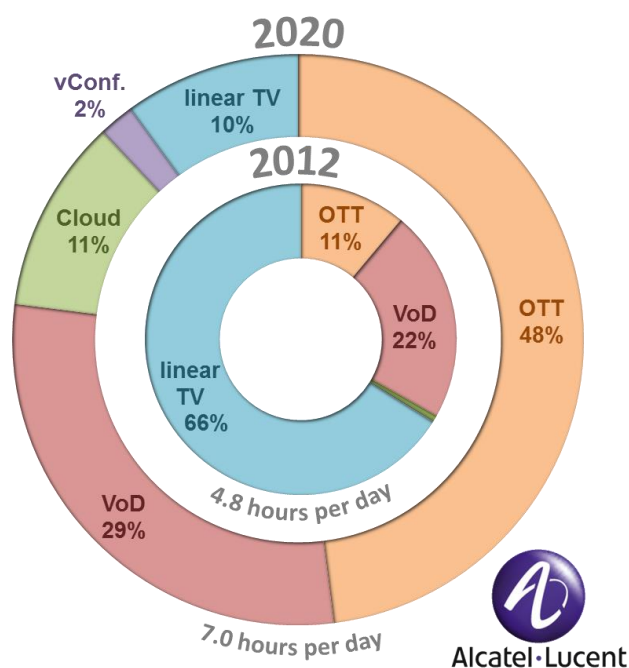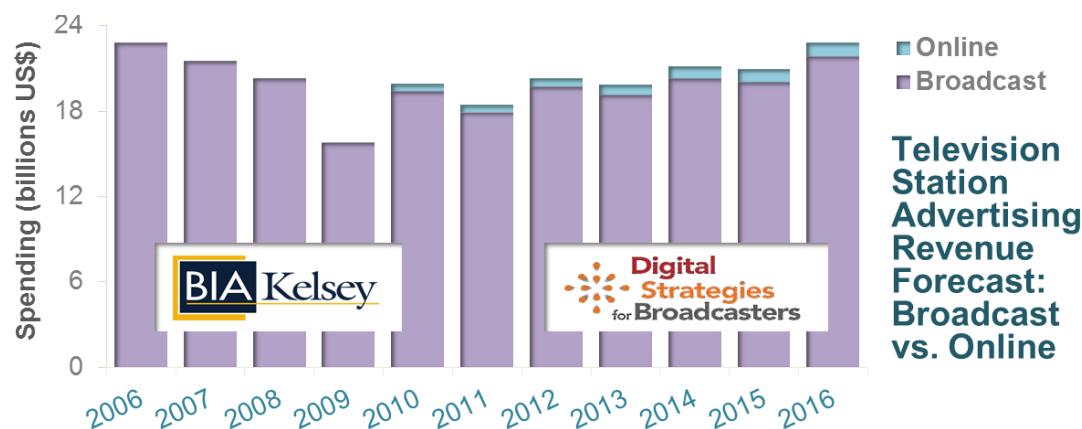
Building the Foundation

A main component of revenue success in multiscreen services is to offer solutions that are flexible, modular, and scalable. This forms the critical paths to building modern platforms that can accommodate a plethora of back-end infrastructures, while maintaining a sense of continuity. The project needs to be considered as an *ever-evolving solution*, as opposed to a *one-off product*. A well maintained and updated platform will translate into happy subscribers, and provide a foundation for geographic reach.

On a functional level, online video services require innovation excellence, in areas such as:

- *Analytics & Reporting* – Cross-platform subscription services require constant refinement to maximize revenue potential. Monitoring and assessing the intricacies of user behavior should translate into continual improvements in the user experience. Increased subscriber satisfaction then leads to maximizing revenue potential.
- *Search & Discovery* – These algorithms need to juggle a complex set of search results that offer accurate suggestions in real-time. Search results should be correlated across collaborative, statistical, social, and behavioral engines.
- *Development Portability* – ensuring that multiscreen software development can be usable on as many devices and operating systems, as possible.
- *DRM[30] Interoperability* – Support for multiple DRM standards that seamlessly cohabitate. At the top of this content protection pyramid is PlayReady[31] from Microsoft, FairPlay[32] from Apple, Verimatrix and more recently, UltraViolet[33] which is backed by a consortium of over 70 corporations. Future online video services should anticipate support for heterogeneous DRM environments.
- *Automated end-to-end Workflow* – Ensuring that tasks from live broadcasts or VoD (Video On Demand)[34] to multiscreen playout are streamlined, and converge on real-time service delivery.
- *Multiscreen Development Excellence* – Maintaining a high quality and consistent video experience across as many consumer devices as possible.

Internet video solutions should be capable of integrating into existing hardware and broadcast workflows without overly taxing the corporate culture. For broadcasters, the ability to tie seamlessly into established operational processes is a strong value-add, and in some cases essential. A robust offering also needs to accommodate new-entrants into the video delivery market that do not have any legacy constraints.

Proposals that realize these goals start from the framework of understanding the client's overall business objectives and then take a strategic approach with the client, rather than reacting to a single tactical request,. Much larger business opportunities are uncovered and a competent supplier's profile is raised from a basic reseller to a trusted adviser.

Preparing a solution begins with understanding the client's pains and/or needs. This may be in the form of organizational inefficiency, competitive threats, or not capitalizing on new revenue potential. A strategy can then be developed to address these business challenges. Strategic decisions filter down to departmental objectives and into individual actions. Solution selling leads to the building block of *People, Process, and Technology*, whereby:

- *Technological* components consist of a bill-of-materials, including various software and hardware that may spread across an eco-system of suppliers.
- From *People* disseminates knowledge and expertise and forms the basis of a provider's reputation
- The overall *Proposal* consists of designing, building and supporting the solution.
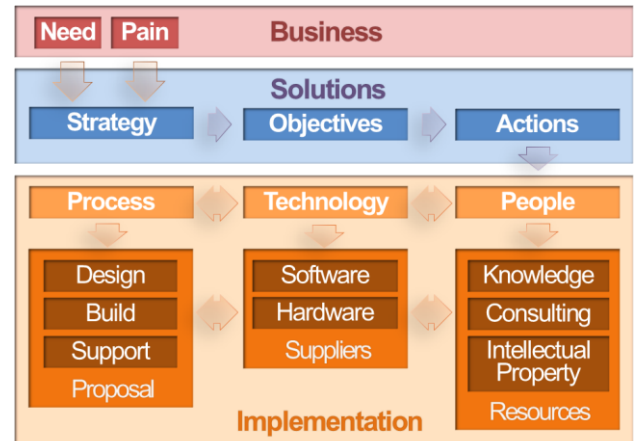

Figure vi – Solution Selling Principles for OTT & Multiscreen - From Business Needs to Implementation

In combination, these components fulfill the client's strategic vision as the project migrates to the implementation stage. Still, the project should not be considered a one-off implementation, but rather an organic infrastructure, synchronized with revenue growth and client expectations.
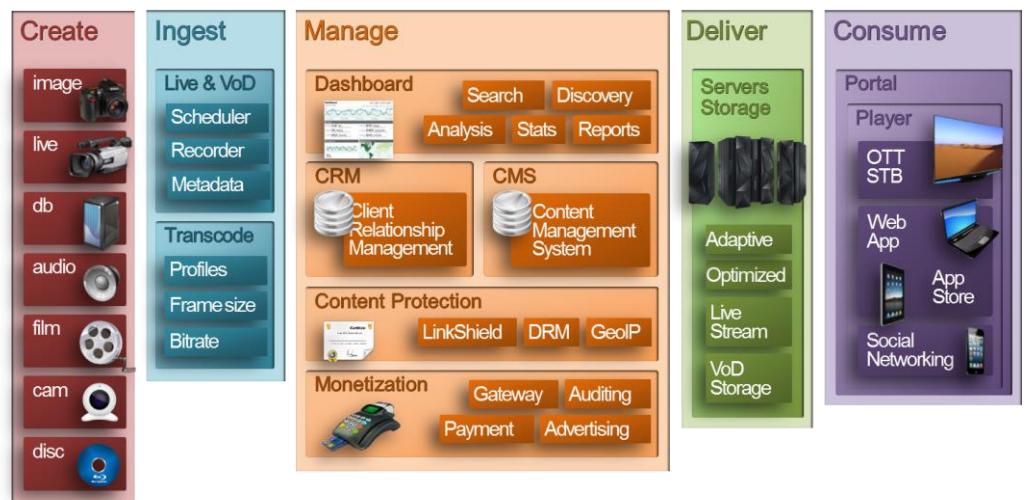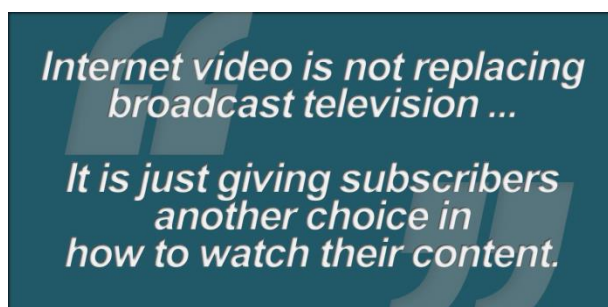

Figure v – Digital Video Workflow from Creation, Ingestion, & Management, to Delivery & Consumption

Software, Platforms, & Infrastructure

An important solution for delivering multiscreen internet video is utilizing a PaaS[35] (Platform as a Service) and SaaS[36] (Software as a Service) offering. These cloud-based services provide content owners and distributors with a quick time-to-market. Comparatively, designing and building a proprietary online video platform takes several years, and may still not match the functionality, resilience, and longevity of a commercial grade platform. In a digital video context, the difference between SaaS and PaaS is that SaaS is mainly positioned as an entry-level service, for companies with a limited amount of premium content. This is where most OVP vendors concentrate their efforts. A SaaS-based service manages video content in the cloud, and the client uses a portal interface to manage their subscribers. This is often an off-the-shelf service, with minimal flexibility in workflow, accommodating legacy systems, or support for live content.

> Internet video is not replacing broadcast television ...
>
> It is just giving subscribers another choice in how to watch their content. [37]

Conversely, PaaS is a complete *platform solution approach*. The cloud infrastructure is fully customizable in both hardware and software to suit the needs of the client. These solutions encompass a much larger infrastructure, defined in this case as OTT (Over the Top Content). OTT solutions are best delivered as an *à la carte*[38] service, giving clients the flexibility to run a more robust service, while not having the burden of hosting (and managing the entire infrastructure by themselves which entail higher capital and operating costs respectively).

Where OVP may service terabytes of storage, OTT services petabytes and exabytes of content.
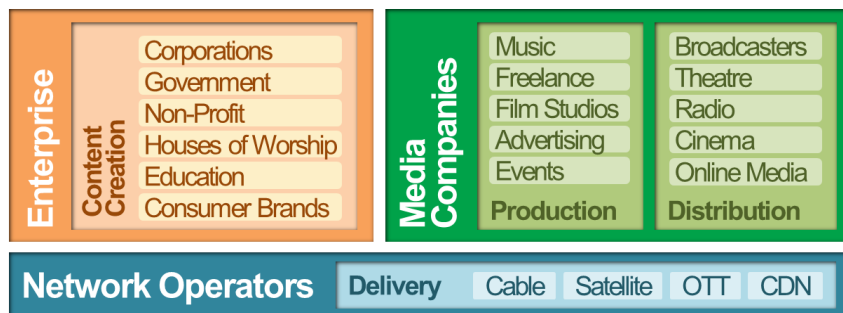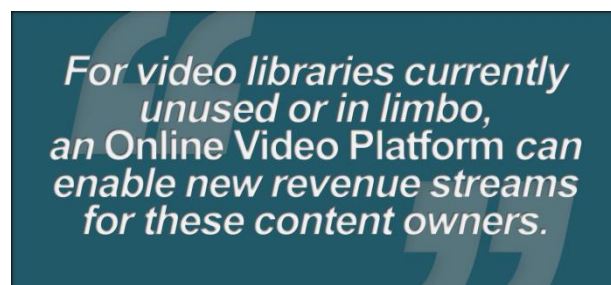
Create, Manage, Monetize

Figure vii – Online Video Market Opportunities

Companies that have no legacy issues, and want to build digital infrastructures and distribution models using the latest methodologies. Media brands, retailers, telcos and enterprises are all realizing that they have vast libraries of multimedia content that can be monetized given an affordable, easy to use and flexible platform (Figure vii). This brings awareness to traditional enterprises that an online video platform can be an excellent vehicle to promote their brand, and enhance their revenue streams.

With a proper architecture across all five stages - *Creation, Ingestion, Management, Delivery, and Consumption* (Figure v) – Video service providers are able to monetize *all* of their content – not just what they feed into a live channel.

> For video libraries currently unused or in limbo, an Online Video Platform *can* enable new revenue streams for these content owners. [39]

OTT, OVP, represent tremendous revenue opportunities for network operators, media creators, owners and distributors of video content and, of course for enterprises in general. Wherever the client comes from, and however much video content they have, it can be consumed and monetized using OVP and OTT solutions using a PaaS or SaaS architecture.

Online Video Must Flow

Content management for multiscreen has special requirements in the cloud. Compared to services that just involve document storage (i.e. without video, or other real-time multimedia), the keys to a successful video service are: the ability to manage large bandwidth requirements, quality of service demands, and massive storage. Beyond these basics, there are distinct requirements for content protection, licensing, and monetization of assets. There is also a clear demarcation between managing VoD verses live content; VoD subscribers download stored files; Live content requires special real-time workflow considerations from *ingest & transcoding*, through to *delivery & consumption*.

Opportunities have not just come from traditional broadcasters. They come from new entrants as well -

Read Additional Articles in this Series

I. Consumption is Personal

- *http://dusil.com/2013/02/28/consumption-is-personal/*

In the days of linear television, broadcasters had a difficult task in understanding their audience. Without a direct broadcasting and feedback mechanism like the Internet, gauging subscriber behavior was slow. Today, online video providers have the ability to conduct a one-to-one conversation with their audience. Viewing habits of consumers will continue to rapidly change in the next ten years. This will require changes in advertising expenditure and tactics.

II. Granularity of Choice

- *http://dusil.com/2013/04/01/granularity-of-choice/*

The evolution from traditional TV viewing to online video has been swift. This has significantly disrupted disc sales such as DVD and Blu-Ray, as well as cable and satellite TV subscriptions. With the newfound ability to consume content anytime, anywhere, and on any device, consumers are re-evaluating their spending habits. In this paper we will discuss these changes in buying behavior, and identify the turning point of these changes.

III. Benchmarking the H.265 Video Experience

- *http://dusil.com/2013/04/22/benchmarking-the-video-experience/*

Transcoding large video libraries is a time consuming and expensive process. Maintaining consistency in video quality helps to ensure that storage costs and bandwidth are used efficiently. It is also important for video administrators to understand the types of devices receiving the video so that subscribers can enjoy an optimal viewing experience. This paper discusses the differences in quality in popular video codecs, including the recently ratified H.265 specification.

IV. Search & Discovery Is a Journey, not a Destination

- *http://dusil.com/2013/05/13/Search-and-Discovery-Is-a-Journey-not-a-Destination/*

Television subscribers have come a long way from the days of channel hopping. The arduous days of struggling to find something entertaining to watch are now behind us. As consumers look to the future, the ability to search for related interests and discover new interests is now established as common practice. This paper discusses the challenges that search and discovery engines face in refining their services in order to serve a truly global audience.

V. Multiscreen Solutions for the Digital Generation

- *http://dusil.com/2013/06/24/multiscreen-solutions-for-the-digital-generation/*

Broadcasting, as a whole, is becoming less about big powerful hardware and more about software and services. As these players move to online video services, subscribers will benefit from the breadth of content they will provide to subscribers. As the world's video content moves online, solution providers will contribute to the success of Internet video deployments. Support for future technologies such as 4K video, advancements in behavioral analytics, and accompanying processing and networking demands will follow. Migration to a multiscreen world requires thought leadership and forward-thinking partnerships to help clients keep pace with the rapid march of technology. This paper explores the challenges that solution providers will face in assisting curators of content to address their subscriber's needs and changing market demands.

VI. Building a Case for 4K, Ultra High Definition Video

- *http://dusil.com/2013/07/15/building-a-case-for-4K-ultra-high-definition-video/*

Ultra-High Definition technology (UHD), or 4K, is the latest focus in the ecosystem of video consumption. For most consumers this advanced technology is considered out of their reach, if at all necessary. In actual fact, 4K is right around the corner and will be on consumer wish lists by the end of this decade. From movies filmed in 4K, to archive titles scanned in UHD, there is a tremendous library of content waiting to be released. Furthermore, today's infrastructure is evolving and converging to meet the demands of 4K, including Internet bandwidth speeds, processing power, connectivity standards, and screen resolutions. This paper explores the next generation in video consumption and how 4K will stimulate the entertainment industry.

VII. Are You Ready For Social TV?

- *http://dusil.com/2013/08/12/are-you-ready-for-social-tv/*

Social TV brings viewers to content via effective brand management and social networking. Users recommend content as they consume it, consumers actively follow what others are watching, and trends drive viewers to subject matters of related interests. The integration of Facebook, Twitter, Tumblr and other social networks has become a natural part of program creation and the engagement of the viewing community. Social networks create an environment where broadcasters have unlimited power to work with niche groups without geographic limits. The only limitations are those dictated by content owners and their associated content rights, as well as those entrenched in corporate culture who are preventing broadcasters from evolving into a New Media world.

IX. Turning Piratez into Consumers, I

- *http://dusil.com/2013/10/25/turning-piratez-into-consumers-i/*

IX. Turning Piratez into Consumers, II

- *http://dusil.com/2014/07/15/turning-piratez-into-consumers-ii/*

X. Turning Piratez into Consumers, III

- *http://dusil.com/2015/05/12/ott-multiscreen-digital-video-series-10-turning-piratez-into-consumers-iii/*

XI. Turning Piratez into Consumers, IV

- *http://dusil.com/2015/05/26/ott-multiscreen-digital-video-series-11-turning-piratez-into-consumers-iv/*

XII. Turning Piratez into Consumers, V

- *http://dusil.com/2015/09/22/ott-multiscreen-digital-video-series-12-turning-piratez-into-consumers-v/*

Content Protection is a risk-to-cost balance. At the moment, the cost of piracy is low and the risk is low. There are no silver bullets to solving piracy, but steps can be taken to reduce levels to something more acceptable. It is untrue that everyone who pirates would be unwilling to buy the product legally. It is equally evident that every pirated copy does not represent a lost sale. If the risk is too high and the cost is set correctly, then fewer people will steal content. This paper explores how piracy has evolved over the past decades, and investigates issues surrounding copyright infringement in the entertainment industry.

About the Author

Gabriel Dusil was recently the Chief Marketing & Corporate Strategy Officer at Visual Unity, with a mandate to advance the company's portfolio into next generation solutions and expand the company's global presence. Before joining Visual Unity, Gabriel was the VP of Sales & Marketing at Cognitive Security, and Director of Alliances at SecureWorks, responsible for partners in Europe, Middle East, and Africa (EMEA). Previously, Gabriel worked at VeriSign & Motorola in a combination of senior marketing & sales roles. Gabriel obtained a degree in Engineering Physics from McMaster University, in Canada and has advanced knowledge in Online Video Solutions, Cloud Computing, Security as a Service (SaaS), Identity & Access Management (IAM), and Managed Security Services (MSS).

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Tags

- Connected TV, Digital Video, Online Video, Gabriel Dusil, Internet Video, Broadcast, Linear Broadcast, Multi-screen, Multiscreen, New Media, Online Video Platform, OTT, Over the Top Content, OVP, Smart TV, Social TV, DRM, Digital Rights Management, PaaS, Platform as a Service, SaaS, Software as a Service, Solution Selling, *Search & Discovery*

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