



UNDERSTANDING THE BIG CHALLENGES **FACING THE CABLE INDUSTRY**

CONTENTS

- 02 Understanding the Big Challenges Facing the Cable Industry
- 04 Challenge #1: Moving from legacy transport to IP
- 05 Challenge #2: Responding to competition from OTT video
- 06 Challenge #3: Content prices, authentication and miscellaneous experience issues
- 07 Conclusion: Finding practical solutions to the cable industry's biggest challenges

Understanding the Big Challenges Facing the Cable Industry

Cable operators have been transitioning between technologies for years, making the move from analog to digital channels and, more recently, from network infrastructures built for transmission via Quadrature Amplitude Modulation (QAM) to newer ones optimized for the more versatile Internet Protocol (IP) suite. Along the way, such major technological shifts have also necessitated some big changes in the business models of these cable companies. For example, some cable operators have warmed to the idea of supporting popular over-the-top (OTT) services within their set-top boxes (STBs) and/or offering their own streaming solutions supported by newly constructed content delivery networks. The future of cable could ultimately look a lot different than the classic grid of bundled channels delivered over analog coaxial cable.

Both the IP shift and the increasingly pragmatic attitude toward OTT content underscore the wide scope of challenges – technical, as well as cultural – now in front of cable operators everywhere. Significant contributors to the industry’s current state of flux include the rapid evolution of media consumption habits (especially when it comes to video), progress in the capabilities of broadband infrastructure, rising content costs and the consumer desire for a superior end-user experience. Shifting to IP distribution, hybrid STBs and new services is a sensible response to these trends.

Indeed, a few numbers published in a December 2015 Accenture report provide context for the sweeping change that is underway:



Netflix alone contributed to **35 percent** of peak Internet traffic in the first half of 2014. In early 2016, Netflix completed its rollout to almost all countries worldwide.

Typical connected consumers had three devices in their homes in 2014, a number that is expected to rise to seven by 2020.



Nearly **90 percent** of those individuals sought a “more seamless experience” between these different IP-enabled gadgets.

Just within the last decade, technologies such as Data Over Cable Service Interface Specification (DOCSIS) 3.0, 4G LTE and fiber to the cabinet have emerged and pushed the envelope for connectivity speeds across service providers’ broadband networks.



The amount of digital data created every two years is now equivalent in volume to everything created between the dawn of civilization and 2003; over 600 videos are uploaded to services like YouTube and Vimeo each minute.

What can cable operators do to thrive in this new business environment? Before we can answer that question, we must examine several of the main issues confronting them in a bit more detail. In addition to the broad ongoing IP transition and rising OTT competition, there are more fine-grained issues, such as the virtualization of basic applications, including DVRs and program guides, not to mention the incorporation of data analytics into research and development cycles. Tackling all of these will require a mix of adept network planning and new solutions such as hybrid STBs.

Challenge #1: Moving from legacy transport to IP

With rising numbers of subscribers consuming video and other forms of media via STBs, gaming consoles and smart TVs (45 percent of all TVs shipped in 2014 were “smart,” according to Accenture’s numbers), cable operators are under rising pressure to deliver a top-notch user experience across multiple platforms. They are playing catch-up with OTT companies and telecommunications companies in this respect, which have for years crafted clients that can access their services from virtually any desktop or mobile device. IP networking is both popular and efficient for transport.

At the same time, operators are looking to lower their costs related to customer-premises equipment (CPE), such as STBs. CPE currently accounts for the bulk of many cable providers’ capital expenditures. However, switching to an IP-centric architecture could lower these outlays by turning STBs into, essentially, Web browsers that can easily pull info from the network. Further savings could also be realized in being able to deliver the same video quality subscribers are accustomed to at a much lower bit rate, thanks to IP enabling an upgrade path to MPEG-4 (from the standard MPEG-2). The benefits of the IP transition, from user experience (UX) to economics, are easy to grasp, but that does not mean that the process itself is facile. It presents a multifaceted set of problems for cable operators of all sizes:

Timing: An IP-based infrastructure will not just emerge overnight. There will most likely be an intermediate phase, in which the operator will have to support both QAM and IP technology stacks. Different video compression technologies may have to be maintained in their own silos, which can complicate technical support while also driving up overhead. A hybrid solution with both a QAM tuner and an IP port is in many cases the best way to navigate these waters.

Cost: Switching from QAM to IP may save money in the long



45 percent of all TVs shipped in 2014 were “smart,” according to Accenture’s numbers

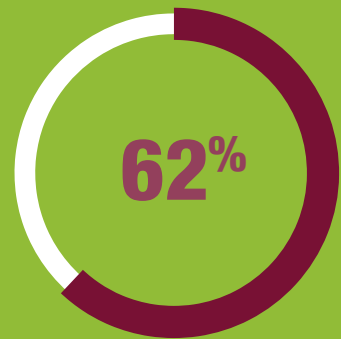
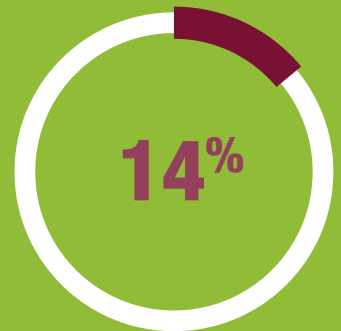
run, but it can incur some serious costs in the short term. Start with DOCSIS. The fees associated with DOCSIS - which continue to evolve to handle greater capacity and migration of TV channels to IP format - are significantly higher than what cable operators usually pay per bit for QAM transmission. The unfamiliarity of many operators with the complex IP ecosystem is also a liability that could require additional spending at the start. DRM services, video servers, content management systems and more have traditionally been expensive costs of shifting to all-IP video distribution.

Playing catch-up: OTT firms, as well as telcos, have aggressively rolled out IP services for years now. In addition to high-profile players like Amazon Prime and HBO Now (which does not require a cable subscription), there are also IPTV and Video on Demand services. Technical innovations, such as the debut of 4K Ultra HD on Netflix in 2014, show that the gap is closing between what is available via IP and what is on traditional TV, and that the time is now to pursue a hybrid strategy.

Challenge #2: Responding to competition from OTT video

The rise of OTT video deserves more attention. A Sandvine report found that between 2008 and 2013, OTT services surged from 14 percent to 62 percent of all Internet traffic in the U.S. These options have grown in large part because of their streamlined user interfaces, superior user experiences and cross-platform compatibility all made possible by their basis in IP.

Whereas cable channels face the reality of having their content delivered by many different operators with a wide variety of STB interfaces, OTT companies can ensure a more or less consistent, intuitive experience across platforms. Cable providers are trying to



OTT services surged from **14 percent** to **62 percent** of all Internet traffic in the U.S.

match what their OTT counterparts offer, but the question for some is whether or not they should also work with these OTT providers and even incorporate OTT-like offerings into their traditional cable packages.

Linear TV may take a while to shift to IP (due to issues such as minimizing latency in live programming like sports), but VOD and network DVR tools could both soon make the move to IP and more closely resemble typical Internet content. Cable providers may also be moving toward incorporating and managing OTT rather than actively trying to prevent it. As *The Wall Street Journal* has documented, companies like Cablevision have struck deals with Netflix to do things like store content on servers directly connected to the cable operator's networks.

Ultimately, the challenge here for cable operators may be more to offer the best possible experience for both OTT and cable programming than to outdo OTT providers. Network partnerships are a broad strategic option, but there is also the more granular approach of integrating OTT services with linear cable channels by rolling out hybrid STBs that support QAM linear, IP-based VOD in addition to OTT offerings.

Challenge #3: Content prices, authentication and miscellaneous experience issues

The late 2000s brought a host of new potential problems to the surface for operators, from OTT viewership growth to surging costs for content. The latter issue became clear when many cable companies began offering slimmed-down bundles – i.e., packages with a smaller range of programming – at the beginning of this decade, in part to offset the fees from popular channels like ESPN and TNT.



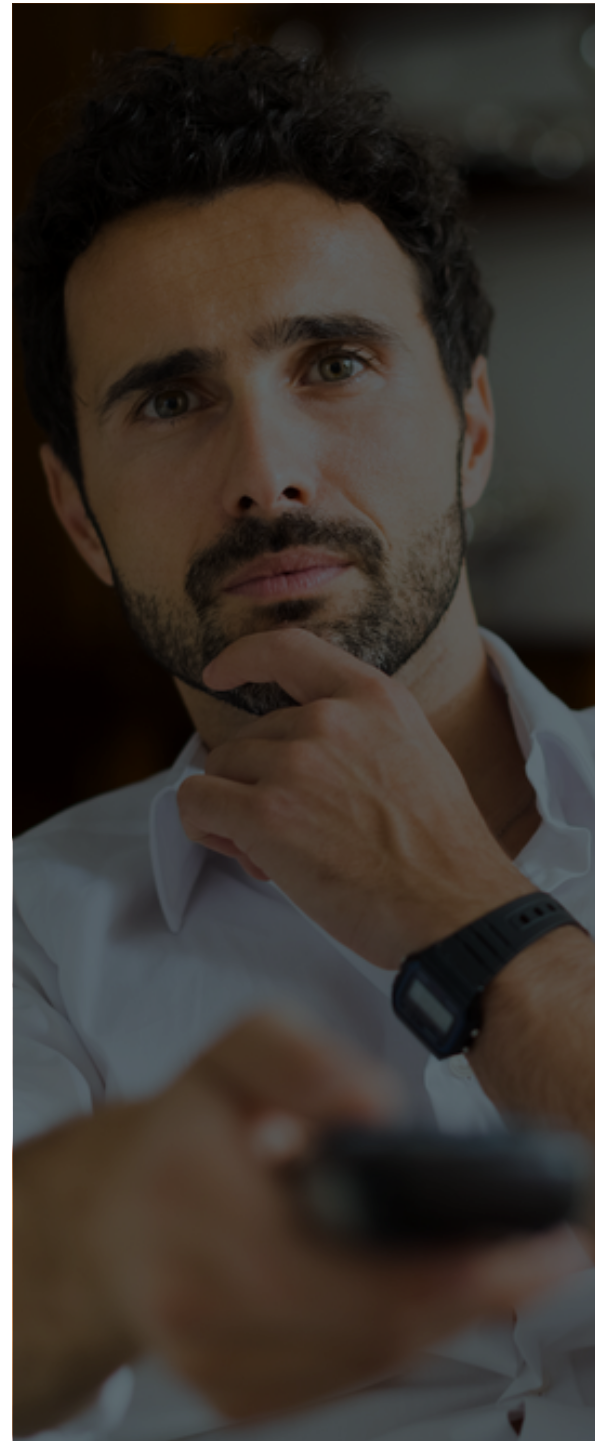
Content costs have been cited by executives at Time Warner Cable and Disney Media Networks as a fundamental obstacle to business sustainability. Both sides – carriers and content creators – are struggling with pressure from new competition and the need to converge their services across IP networks. Cable packages could take very different shapes in the coming years as both the IP transition and upward cost trajectory further set in.

On top of price, other things stand in the way of providing a superior cable experience. Authentication, which is needed to enable ambitious initiatives such as TV Everywhere, is not as straightforward a process as many consumers (and cable operators) would like it to be. Such inconveniences blunt the impact of the industry's plans to remake itself for the age of ubiquitous IP networking.

Finally, there are challenges in continually upgrading broadband infrastructure to keep pace with fiber. DOCSIS 3.1, Converged Cable Access Platform, etc. may require more attention and technical resources in the years to come.

Conclusion: Finding practical solutions to the cable industry's biggest challenges

Cable operators have already begun the transition to IP and have been keeping an eye on the impact of outside OTT services for years. Sustainable solutions to these challenges will require a combination of smart business planning and technical acumen. However, the industry has its work cut out for it in moving to new IP-based network architectures and more seamless end-user experiences.



Tier 2 and Tier 3 cable operators especially face this hurdle of transitioning to IP. They must acknowledge the importance of developing capabilities for the graceful migration to IP Video, as a successful future requires a system for delivering live linear content, as well as Video on Demand, OTT services and network DVR. In addition, the system of the future must be able to deliver content wirelessly to every device in the household. For many operators, working with a strategic partner like Evolution Digital that offers an end-to-end solution and understands the IP technical requirements, set-top box options, in-home distribution and IP video requirements will be the best path forward. While the cable industry is uniquely positioned to succeed in the changing media landscape, due to its existing broadband infrastructure and customer familiarity, developing a fully-integrated IP video solution and compelling user experience is the key for a successful future.





evolutiondigital.com

800-315-2253

sales@evolutiondigital.com

7347 South Revere Parkway • Building A • Centennial, Colorado 80112