

Undeniable and Unstoppable

The epic migration of television viewers
from linear channels to on-demand streaming platforms

by

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It is not difficult to speculate on the future evolution of television. We simply have to observe what is happening in our own households.

Although we continue to rely on linear television for current news reports, live sporting events and high-quality live entertainment shows such as “The Voice,” tens of millions of us are now primarily watching what we want to watch at a time of our choosing from menus of premium content offered by streaming services such as Netflix, Hulu, Amazon Prime Video, HBO Now, CuriosityStream, BritBox, and CBS All Access.

The dramatic revolution occurring in television viewing is as undeniable and unstoppable as the rapid worldwide adoption of small, portable cell phones that have now become our constantly-connected “smart” companion. Those who doubt the disruptive impact of streaming television on traditionally-scheduled linear TV are like those who once questioned the wisdom of cellular bandwidth speculators, like Craig McCaw, who predicted that people would one day largely abandon their primary use of fixed telephones at home.

The third revolution of television

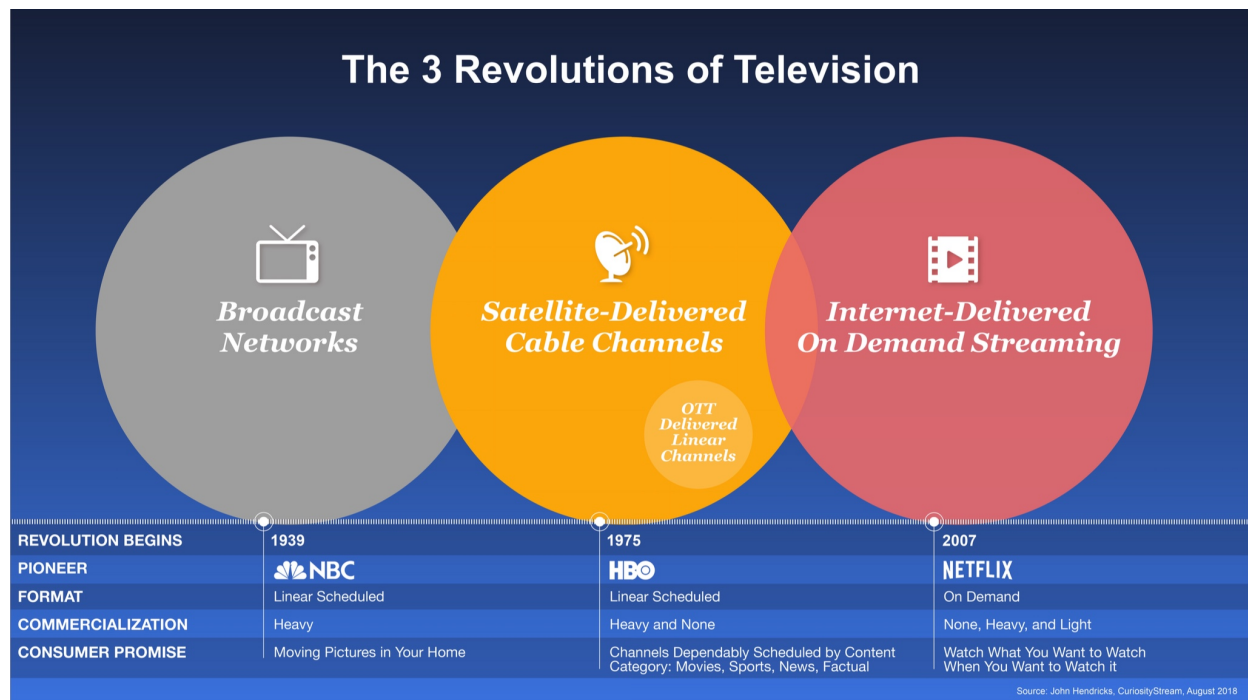
On-demand streaming television represents the third revolution of television and, in many ways, it is the culminating step of the consumer’s relentless desire to control viewing options.

In the 1940’s, the world was enchanted with the wonders of broadcast television, *the first revolutionary step in television’s development*. Although viewers of the new medium eagerly welcomed moving pictures into the comfort of their living rooms, they had little control over the choice of content to watch. Broadcast viewers were bound to the program schedule created by network programming executives and consumers had to wait patiently for the news which would be delivered sometime between 6 and 7 pm, a favorite sitcom that might be broadcast at 9 pm, a documentary special scheduled for Tuesday at 8 pm of the following week, or a movie that would air on an upcoming Saturday night at 10 pm.

The fortunes of television viewers changed for the better when HBO launched on satellite in 1975 thanks to Time, Inc., and the visionary cable entrepreneur, Charles Dolan. HBO ushered in *the second revolution of TV*, satellite-delivered cable channels that were each dependably devoted to a select category of content. Cable subscribers had a movie to watch at any time

of the day or night on HBO and then on Showtime. In 1980, Ted Turner gave us CNN, an entire 24-hour channel devoted to news. Bob Pittman introduced us to a music channel in 1982 when he launched MTV. And, in 1985, I was fortunate enough to be able to launch the Discovery Channel, a cable network devoted to the entire category of factual content in the areas of science, nature, history, world cultures, technology, and more. Although viewers could not select a particular movie or documentary to watch at a given time, at least they had dependable channels, HBO and Discovery, that had schedules devoted to the two major content categories.

The television landscape changed again in 2007 when Reed Hastings introduced us to the revolutionary online streaming movie service, Netflix. Netflix pioneered the *third revolution in television* which at last gave consumers the simple but profound ability to watch what they wanted to watch when they wanted to watch it. In addition to providing subscribers with movies on demand from a vast menu of choices, Netflix also delivered its content without commercials. This third revolution of television has been described as subscription video on demand (SVOD) and the first service of the era, Netflix, was launched free of advertising. Fast forward 11 years to today and we witness Netflix's phenomenal success in attracting over 125 million global subscribers who each pay about \$132 per year for the service. Let's do the math. That's a current estimated annual revenue stream for Netflix of \$16.5 billion and the service is growing by 5 million global subscribers per quarter. Remarkably, the number of U.S. subscribers to Netflix, now over 57 million, has surpassed the number of U.S. cable subscribers, 48 million.



In 1994, we saw it all coming

A number of us in the industry had an opportunity to get a glimpse of the coming third revolution of TV way back in 1994. In an effort that year to study the consumer demand for content during the coming age of digital which offered the potential of 500 linear channels of content, I organized a large industry research test called *Your Choice TV* involving 20,000 U.S. cable households served by cable operators who had each cleared 54 unused analog channels. We utilized this channel capacity to deliver 54 broadcast and cable TV shows, such as *Seinfeld*, *48 Hours*, *Dr. Quinn Medicine Woman*, *Saturday Night Live*, Discovery specials, and HBO originals. Each show was priced at \$1 and played on its own channel for a week after the initial telecast and was thus available on a near video-on-demand (NVOD) basis at the top of each hour. We eagerly awaited the test results. Closely examining each monthly report of consumer orders on the *Your Choice TV* platform were, in addition to myself, Howard Stringer (then President of CBS), Bob Iger at ABC, Tom Rogers at NBC, and executives at 6 other participating networks. *Your Choice TV* was a hit. Consumers loved the opportunity to buy shows that they could watch at any time during the week without the hassle of setting up their VCRs. And, when we tested a monthly subscription plan for all titles at \$8, the future became clear...consumers would flock to a TV platform that gave them on-demand control of their viewing options.

Disrupting the linear schedule of content that accumulated mass viewers “by appointment” for advertisers proved to be too scary of a proposition for the network test participants and so *Your Choice TV* was never commercially implemented. However, those of us who witnessed the results of the on-demand TV test made sure that our companies were at the forefront of investing in future platforms that gave consumers more control of content. For example, when TiVo emerged in 1999 as a digital device that made television shows more easily time shifted and thereby more controlled by consumers, I along with Howard Stringer and Tom Rogers made sure that our companies (Discovery, SONY, and NBC) were early investors in TiVo.

Television everywhere: the impact of mobile and wireless technologies

Coinciding the development of digital video technologies that allowed easier time-shifting of content on devices such as TiVo was the revolution in mobile devices such as smart phones and tablets that made television accessible wirelessly wherever we play, work, or travel. By the end of the first decade of the 21st century, television was becoming available anytime and everywhere. In addition to television programs being consumed on mobile devices across the planet, a wealth of gaming platforms and TV interface devices such as Roku, Apple TV and Chromecast were also being adopted to wirelessly connect Internet streaming content to television sets in the home. When HBO Now and CuriosityStream launched in 2015, the services were designed for delivery on all iOS and Android mobile platforms, on smart TVs, and through XBox, Sony Playstation, Roku, Apple TV, Chromecast, and Amazon Fire TV. Adapting our two new streaming services in 2015 to the dizzying array of TV interface devices required a lot of engineering resources but the effort was vital to serve consumers wherever and whenever they desired to view our content.

Just how big is the global television streaming opportunity?

It is a bit challenging to look over the next 10-20 years and speculate about the global market size for the distribution of Internet-delivered television streaming, but it is worth the effort. I

went through a similar exercise back in 1985 when I contemplated the potential long term distribution reach of the Discovery Channel on cable systems.

On June 17, 1985, we launched the Discovery Channel on satellite and it became immediately available to cable operators who were interested in offering the service to subscribers. At that time, cable television was available in 39.8 million U.S. households or 45.9% of the total 86.8 million U.S. households in 1985. During our launch month, we were able to count 156,000 subscribers that were connected to Discovery Channel through their cable systems.

In 1985, cable was expected to reach 48 million U.S. households within 10 years by 1995. However, cable television distribution in the U.S. actually grew much faster and, by 1995, over 62.9 million U.S. households were connected to cable. In 1995, ten years after launch, Discovery Channel had grown to serve a remarkable 67.5 million subscribers, 4.6 million more homes than were connected to U.S. cable systems. How was this possible? The answer was the development of two additional distribution platforms, direct broadcast satellite distribution (i.e. DirecTV) and international cable systems, both of which would lead to a dramatic acceleration of Discovery Channel distribution over the coming decades. By 2015, 30 years after launch, Discovery Channel would serve over 500 million global households with over 3 billion cumulative subscribers to all Discovery Networks. The second revolution in television, linear satellite-delivered cable channels, was a planetary phenomenon.

Now, let's take a deep breath and see if we can contemplate the global distribution potential of Internet-delivered streaming video, the third revolution of television.

To receive a video streaming service, global consumers require a direct high-speed Internet connection or the distribution services of a cable system which has devoted a portion of its broadband infrastructure to the delivery of on-demand video.

Below are the number of global households that are currently served by pay TV providers and also those households that enjoy a high-speed Internet connection capable of transmitting video streaming from services such as Netflix.

| | |
|--------------------------------------------------|--------------------------|
| 2017 Global Pay TV Households | 969,000,000 ¹ |
| 2017 Global Fixed Broadband Internet Subscribers | 979,000,000 ² |

Interestingly, the number of global broadband internet subscribers has surpassed the number of global pay households. It should be recognized that there is duplication in the above two distribution numbers. There are many homes in the world that have both a high-speed Internet connection as well as a cable connection. It is reasonable to assume that, of the total 1.9 billion duplicated households (those having a cable connection and/or a high-speed Internet connection), a little over 1 billion are likely to be unduplicated. This then is a reliable estimate of today's universe of global households that are capable of subscribing to a television streaming service: **1 billion**.

With an annual subscription cost to users of about \$132, Netflix has already penetrated 12.5% of the 1 billion streaming-capable global household universe with its 125 million subscribers...but there is a lot of room for Netflix to grow. According to the Global SVOD Forecasts report, the number of SVOD homes will reach 428 million across 200 countries by

¹ Source: Global Pay TV Subscriber Databook.

² Source: International Telecommunications Union, The State of Broadband 2017.

2021. With these current and forecasted distribution numbers in mind, let's look at the following long term projection of streaming television over the next two decades. And let's add in some speculative numbers for the distribution of Netflix, the leading premium SVOD movie service priced at \$132 annually.

| | <u>Today</u> <u>2018</u> | <u>5 years</u> <u>2023</u> | <u>10 years</u> <u>2028</u> | <u>20 years</u> <u>2038</u> |
|---------------------------------------------|-------------------------------------------|---------------------------------------------|----------------------------------------------|----------------------------------------------|
| Global Streaming-Capable Household Universe | 1 billion | 1.5 billion | 2 billion | 3 billion |
| Global SVOD Subscribers (% of Universe) | 250 million (25.0%) | 600 million (40.0%) | 1 billion (50.0%) | 1.5 billion (50.0%) |
| Netflix Subscribers (% of Universe) | 125 million (12.5%) | 200 million (13.3%) | 350 million (17.5%) | 600 million (20.0%) |

The above projections are, of course, highly speculative and changing market conditions and new technologies can radically alter the course of long range forecasts like this one. But if the global streaming-capable universe grows from 1 billion households today to 3 billion households in 20 years, then SVOD services that can successfully penetrate just 20% of this universe have very valuable futures. I believe that the chart above represents the distribution potential of the third revolution of television.

4 undeniable and unstoppable consumer forces that are powering the third revolution of television

Four unstoppable consumer forces are at work in driving the undeniable migration of television viewers from scheduled linear TV to on-demand streaming TV.

1. Consumers lead busy lives and they want ***complete control over the start time*** of the television content that they want to watch. If a consumer is not ready to watch a movie or a documentary feature until 8:42 pm in the evening, then that is when the show should begin.
2. Consumers want ***premium quality content*** and they are no longer interested in low-quality and low-cost "channel filler" that clogs the schedule of some linear TV channels. Let's face it. Netflix has spoiled us with mega-expensive premium content like *The Crown* as has Amazon Prime Video with originals like *The Man in the High Castle*. In like fashion, subscribers to CuriosityStream have been treated to *Stephen Hawking's Favorite Places*, our Emmy Award winning original series. As television consumers, our collective expectation for quality has dramatically increased in this new era of on-demand streaming. We would rather watch fewer high-quality productions than waste our time on low-budget TV fare.
3. Consumers prefer watching movies and TV shows ***without commercial interruptions***. Just look at the work we go through in programming our DVRs so that we can fast-forward through commercials. Netflix, Amazon Prime Video, and iTunes save us a lot of work by delivering their content with no associated sponsors or commercial

interruptions. Although consumers are losing the benefit of advertising subsidies that help fund content, they seem willing to pay extra for the enjoyment of a movie or documentary story that is not constantly interrupted by commercials.

4. Consumers are demonstrating a ***new willingness to fight the bundled pricing of programming that is packaged by cable and satellite distributors***. The millions of satisfied consumers who have subscribed to Netflix or who enjoy online streaming content from Amazon Prime Video are becoming increasingly empowered to seek out additional SVOD services like Hulu, CBS All Access, and HBO Now. Their increased spending on premium-quality streaming content has caused them to look anew at the cost of the cable bundle which contains channels that they have never watched or no longer watch. While affluent consumers are merely “shaving the cord” by eliminating expanded basic and premium options, many cost-conscious consumers are actually “cutting the cord.” In addition to an estimated 23 million households who have already cut the cable cord, there are tens of million of mostly younger consumers who simply are “cord nevers”; online streaming has always been their choice for access to movies, TV shows, and games.

Riding the 5 tailwinds of the streaming TV revolution

One can now start to see the 5 tailwinds that are accelerating the already rapid growth of Internet-streamed television.

1. ***Big budget movie and scripted entertainment productions by Netflix, Amazon Prime Video, and Hulu are accelerating the growth of the global base of SVOD customers***. Movies represent the world’s premiere and most-desired form of entertainment. Movies drive media platforms. Netflix content is driving the worldwide adoption of streaming just as HBO once drove the U.S. adoption of cable. I often say that my career experience has just been to “follow the movies.” Movies create the content delivery infrastructure that paves the way for my work in developing premium factual content that can hitch a ride on the platform.
2. The combined ***marketing and advertising spending*** by Netflix and other streaming services now exceeds \$2.5 billion annually further accelerating the global adoption of Internet-delivered streaming content.
3. Competition among content delivery networks (CDNs) combined with breakthroughs in digital compression and related technologies have ***lowered the cost of streaming content over the Internet*** to the remarkably cost-efficient level of approximately 1 cent per GB. This low cost means that 15 hours of HD video can be streamed each month to a subscriber by an SVOD provider at a cost to the provider of only 30 cents. This new cost-efficiency in streaming will result in the ability of certain SVOD providers that are not involved in expensive scripted and theatrical content production to lower subscription costs to a level of \$2-3 per month which should significantly accelerate global SVOD adoption.
4. ***Significant publicity about Emmy Awards and other accolades*** that are now dominated by streaming providers further motivates consumers to subscribe to SVOD services in order to access the world’s best content. For the first time in 17 years, HBO failed to win the most Emmy Awards this year. First place in Emmy wins now belongs to Netflix.

5. When Netflix launched in 2007 without commercials, advertisers were left out in the cold. Because they have now witnessed the great migration of the very best viewers (with the most valuable demographic attributes) from linear to streaming television, **sponsors are now eager to explore ways to engage with SVOD television.** Creative solutions to incorporate presenting sponsors on SVOD platforms (in a fashion that preserves the expected commercial-free delivery of content by consumers) will unleash increased revenue sources for content production and promotion, developments that will further drive the global adoption of Internet-streamed television.

“Pricing for the Planet”: the next step in streaming television

The plummeting cost of video streaming combined with sponsorship subsidies means that the subscription cost of SVOD television can be reduced to unforeseen affordable levels...as low as \$3 per month for monthly subscription plans and a remarkably low level of \$25 or less for annual subscribers. What this means is that close to the price that we all used to pay for a single show on a DVD, \$19.99, we can now enjoy thousands of premium titles from an SVOD service on demand and all year long.

Annual subscription plans should be the wave of the future for SVOD customers who subscribe directly to a service. In effect, these consumers are going “over-the-top” (OTT) and outside the billing system of a cable distributor. A credit card transaction cost is generally 25-30 cents so a monthly subscription plan (involving 12 separate transaction charges annually) has to be priced higher than an annual subscription plan that only involves one credit card transaction. Lower subscription costs and annual billings should also reduce the “churn” rate of subscribers...the rate at which customers cancel their subscriptions.

Navigating the third revolution of television

In summary, it now appears clear that in order for a streaming media company to successfully navigate and prosper in the third revolution of television, its executives must be mindful of these 6 realities.

1. **Content is king.** Consumers have now experienced the wonders of big budget original entertainment served up by Netflix and Amazon Prime Video. They will no longer tolerate watching low-quality, channel-filling content and endless sitcom reruns. Creating original and exclusive premium content is the number one priority for streaming services that hope to distinguish their offerings in a highly competitive marketplace.
2. If content is king, then **promotion is paramount.** It does you no good if you have the greatest content in the world but no one knows about it. Delivered outside the packaged comfort of the cable bundle, OTT streaming services must spend large amounts of marketing and advertising dollars to get noticed by consumers. Free sampling of content provides one effective way of promoting SVOD premium menus.
3. **Cable distributors are entering the streaming game in a big way.** Over-the-top (OTT) television is going back through-the-middle (TTM). The best streaming services will be able to not only sell directly to consumers worldwide but also through distributors that have large existing customer bases. Streaming services and their distribution affiliates will likely collaborate on novel ways to package and even bundle streaming services if there are price benefits to customers. Within linear-only

distribution systems in certain markets around the world, streaming content providers might even offer these distributors a branded linear channel of content featuring showcase content from the streaming SVOD service.

4. ***Consumers dislike commercial interruption of content.*** HBO, Showtime, Starz, Netflix, iTunes, and Amazon Prime Video have well-conditioned viewers to now prefer and seek out commercial-free viewing choices. Launching an SVOD service that is chock-full of commercial breaks is not a winning proposition in the third revolution of television.
5. ***Advertisers are eager to re-engage with valuable viewers who have “gone missing” from linear television.*** There is now an opportunity to craft unique partnership opportunities between SVOD services and advertisers, the result of which will introduce an additional revenue stream that can support premium SVOD content production. Integrating sponsor messages in a fashion that does not alienate SVOD subscribers is a tricky challenge but one worth pursuing.
6. ***There is a growing price sensitivity among consumers concerning the cumulative cost of multiple SVOD services.*** It is likely that consumers may not spend more than \$30 per month for their selection of SVOD services. Given that two premium SVOD movie services like Netflix and HBO Now will cost in excess of \$20, there is very little room for additional high-priced SVOD services. Even those that are priced at \$5 per month may run into a consumer price barrier. With this in mind, SVOD providers must explore bundling, cost-efficient streaming technologies, and sponsorship subsidies in order to get monthly subscription prices down to the \$2.99 level and annual subscription prices down to \$25 or less.

The “Platinum Age of Television”

It sounds a bit trite to say that we are entering a “new golden age” of TV so let's just say that we have at last arrived at a new superior level of consumer experience with television...the “Platinum Age of Television” is here.

In this new age of television we are already witnessing a level of production quality that the world has never seen. Content is simply better than ever as SVOD competitors spend ever larger sums to satisfy their subscribers and attract new ones. The direct funding of content companies by subscribers has unleashed a massive global revenue stream that will fund incredible content that will entertain the world as never before.

The Man in the High Castle produced by Amazon, *The Handmaid's Tale* produced by Hulu, and *The Crown* produced by Netflix are three series that represent the pinnacle of premium scripted content.

The high expectations of consumers in the Platinum Age of Television is certainly in mind as we program CuriosityStream. When we assess the pinnacle of premium factual content we simply must include the epic *Planet Earth* series that began as a co-production effort between the BBC and Discovery in 2002 and first aired in 2007. David Attenborough's *Planet Earth II* series, which premiered in 2016 on the BBC, achieved a stunning 41.9 share of the viewing audience, demonstrating the broad and deep appeal of factual content with rich storytelling and high production values. With this in mind, we made sure that David Attenborough's next premium factual production, *Light on Earth*, about the wonders of bioluminescent life forms, had its

debut on CuriosityStream where subscribers can now enjoy this award-winning show at any time.

The Platinum Age of Television is all about delivering the pinnacle of scripted and factual content that can be enjoyed by global consumers at any time and on every digital viewing platform. The initial original programming undertakings by participants in the third revolution of television have been spectacular. And there is much, much more to come.

John Hendricks is the Founder & Executive Chairman of CuriosityStream, a pioneering SVOD streaming service that offers premium content across the full category of factual entertainment to subscribers worldwide. Hendricks is also the founder and former Chairman of Discovery Communications, the global media parent company of Discovery Channel, Animal Planet, TLC and Science, among many other television networks and ancillary businesses and brands. A visionary in the media industry, Hendricks has been honored with a Primetime Emmy Award and with the Academy of Television Arts & Sciences highest honor, the Governors Award, for conceiving the TLC series, Great Books. He is the recipient of the 2017 Arthur C. Clarke Innovator Award. Hendricks has also been recognized as the first corporate leader to receive the National Education Association's Friend of Education award for "innovations in education and technology and greatly expanding educational opportunity for America's schoolchildren." Hendricks holds a B.A. in history (magna cum laude, 1974) and an honorary doctorate (1991) from the University of Alabama, Huntsville. Hendricks' memoir, A Curious Discovery: An Entrepreneur's Story, recounts the struggles and triumphs of turning his passion for documentary programs into the world's most widely distributed cable channel and parlaying its popularity into a leading global media company. The book was published by Harper Collins in June 2013.

CAUTION CONCERNING FORWARD-LOOKING STATEMENTS

This paper contains forward-looking statements. These statements can be identified by the fact that they do not relate strictly to historical or current facts. Forward-looking statements often include such words as "anticipates," "estimates," "expects," "projects," "intends," "plans," "believes" and words and terms of similar substance. The actual results for SVOD industry participants may vary materially from those expressed or implied by the statements in this paper due to changes in economic, business, competitive, technological, strategic and/or regulatory factors and other factors that affect media and related industries.