



By Stewart Schley

DIGITAL VIDEO'S OFFLINE ADVENTURE

More video providers are embracing download-to-go applications. Here's why.

Downloading video content to mobile devices is becoming an increasingly common behavior as travelers, commuters and even in-home video viewers contend with the vagaries of uneven Wi-Fi availability and sometimes-frustrating streaming video experiences.

During a layover at Miami's Airport recently, Charlotte Bockstahler did what lots of savvy travelers do: hunted for a decent Wi-Fi connection. The data analytics specialist wanted to have a choice of movies and TV shows to watch on the plane ride home to Denver, but she had doubts about how well streaming video would work on the airplane.

"When you try to stream through Wi-Fi on the airplane; you might pay the money to get connected, but they block the streaming stuff. So instead, you download the content to your device," said Bockstahler. She was able to find a fast Internet connection at an American Airlines passengers club. Within a few minutes, Bockstahler had downloaded a handful of full-length movies and TV episodes from her Amazon Prime Video and Netflix apps. "I had two movies and two TV shows in about five minutes," she said. "After that I could go into airplane mode and it was on my phone."

Her experience isn't unusual. Downloading video content to mobile devices is becoming an increasingly common behavior as travelers, commuters and even in-home video viewers contend with the vagaries of uneven Wi-Fi availability and sometimes-frustrating streaming video experiences.

“People are used to living in an intermittently connected world.” That leaves a big role for pre-loading video content that doesn’t depend on a live stream for playback.

Once dismissed as a legacy approach to video delivery, downloading has roared back into the marketplace with a vengeance as brand-name video providers including Showtime Networks, Starz Media, A+E Networks, AMC and others providers incorporate downloading applications into their streaming video platforms.

A 2018 billboard and subway poster campaign from Showtime Networks underscores the wave. Beneath an oversized photograph of Claire Danes, the actress from Showtime’s original series “Homeland,” the headline urges fans to “Download full episodes and watch on the go.” Hulu had a similar message when it announced an advertising-inclusive download function in May of 2018. Hulu said the new feature “will make it possible for subscribers to access their favorite shows and movies on the go, with no internet connection required.”



Why the surge of interest in downloading? In large part, it’s tied to the realization that broadband network availability isn’t a given in every locale. Like jet packs and hoverboards, the technological ideal of an ambient, ever-present Internet remains the stuff of futuristic fantasy. “The whole vision of a utopian connected future isn’t really happening,” observes Joshua Pressnell, CTO of the pioneering video download applications developer Penthera. “People are used to living in an intermittently connected world.” That leaves a big role for pre-loading video content that doesn’t depend on a live stream for playback.



RISING USAGE FINDS INCREASED FRUSTRATION



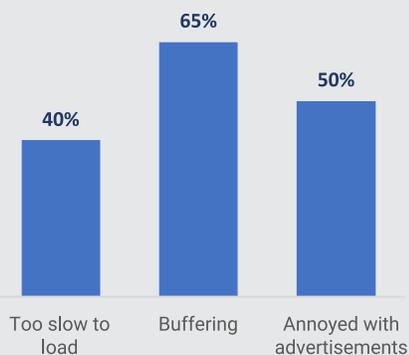
92%

of consumers have been frustrated trying to stream video.

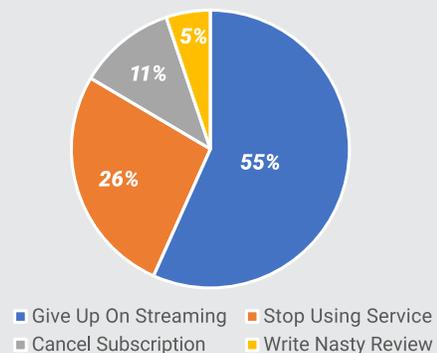
The rising interest in downloading comes as video usage over mobile devices skyrockets. Ericsson's *TV and Media 2017* report, based on a global survey of 20,000 people, found the share of consumers who watch video on smartphones has **doubled since 2012, to 70 percent, with smartphones now making up one-fifth of all TV viewing.**

But as usage rises, so do opportunities to disappoint. As many a frustrated user will attest, even in an era of widespread cellular data transmission and prolific Wi-Fi availability, poor experiences are common. According to a 2018 consumer survey Penthera commissioned, 92 percent of U.S. streaming video users reported at least occasionally being frustrated about poor-performing streaming sessions, with buffering cited by 65 percent of respondents and slow-loading streams by 40 percent. Their response sounds a discouraging note for streaming video as a business proposition: More than 50 percent of users say they often give up trying to stream altogether; another 11 percent said they would cancel subscriptions out of frustration.

What frustrating experiences have you had when streaming video?



Reactions to Streaming Frustrations





SUB-PAR EXPERIENCES

Reasons for sub-par experiences can be wide-ranging. Not only is Wi-Fi coverage sometimes spotty, but there are instances where even the networks that are available can't provide adequate bandwidth for assuring flawless video streaming performance, especially when it involves high-resolution video formats. Another common culprit is congestion. Huge levels of concurrent stream demand have led to embarrassing failures for some video providers, as requests for streams overwhelmed server and CDN capacities.

Enter downloading. The ability to ingest a full video asset to a phone, tablet or other digital device provides a level of assurance streaming can't always deliver. There's no question of whether a program will be available, or, that once the user presses "play," whether it will render on the screen without interruption.

"It's all about making your brand and your content available all the time, anywhere. And that's what we do. We fill in the gaps," says Daniel Taitz, a former Oxygen Media and Univision Communications senior executive who is Penthera's Chief Operating Officer. Taitz describes downloading as an essential ingredient in the "TV Everywhere" promise. Without it, he says, it's impossible to promise anytime/anywhere availability and truly back it up. "If your app doesn't offer downloading, at those moments when subscribers want to watch something but don't have connectivity, your app is useless to them," Taitz says.

But downloading is more than a fallback for network inadequacies. Downloading applications also offer enhancements to the streaming experience that can heighten reliability and improve the quality of user experiences – and to allow for interesting new possibilities. For example, it's possible to integrate download functionality into a streaming session so that the first few frames of a video asset are downloaded and played while the remaining elements of the session setup – the video manifest, the proper DRM authorizations, the ascertainment of network conditions – are accomplished in the background. For the user, the result is an unusually rapid initiation of a video "stream" that appears almost instantly after the "play" button is pressed. Penthera also is developing the underpinnings for a new "mobile DVR" business model built around auto-downloads of upcoming issues from a user's favorite series. Without requiring manual intervention, the service ensures forthcoming episodes are pre-loaded onto a device, "so no matter where you are, you have the next shows available," explains Pressnell. The idea has applications not just for scripted/episodic series, but for news or sports content that matches up with viewers' preferences.

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BUSINESS RATIONALE

It's easy to understand why downloading is attractive from a user experience standpoint. From a business standpoint, realizations about economic contribution and monetization also are coming into focus as more providers made downloading functionality a core of their offerings.



53%

said they would pay more for download as a feature

One common theme has to do with subscriber satisfaction, and the positive impact on retention that it carries. Here, the logic is intuitive. If providers can turn to downloading to solve frustrations tied to streaming inadequacy, they score points with users. Positive experiences, in turn, reduce the tendency to disconnect out of pure frustration.

There's also evidence of upside opportunity on the subscriber acquisition front. Nearly 40 percent of respondents to Penthera's 2018 consumer survey said they'd be more likely to subscribe to a video service that offers download-to-go capability. *And 53 percent said they'd be willing to pay (up to \$5 per month more) for the capability. Those tendencies are borne out in metrics shared by one of Penthera's customers: The premium video provider reported the percentage of users who convert from temporary free trials to become paying subscribers rises significantly, to more than 30 percent, among the subset who have tried the service's download-to-go application versus those who have not.*

Monetization also comes into play on the advertising side, where download functionality allows for commercial messages to be inserted dynamically into downloaded video assets, so that the timing of commercial exposure works even when the viewer watches at a date that's well beyond a program's linear premier. Hulu, the digital video service with more than 20 million subscribers, broke new ground in May 2018 when it announced plans to introduce a downloading application that will enable precision insertion of advertising into downloaded programs. "We will not only be live and on

demand, but untethered and on the go,” Hulu’s Senior Vice President of Advertising Sales told advertisers at the company’s May 2018 “Newfronts” advertising presentation. The recognition that downloading can contribute to broad business objectives has been rising among influential industry participants including the video streaming giant Netflix, which introduced downloading capability for selected titles in November 2016 after first dismissing the possibility. “I’m just not sure people are actually that compelled to do that,” Netflix’s Chief Product Officer Neil Hunt told the tech publication Gizmodo in the fall of 2015.

CHALLENGES WITH HOME GROWN DOWNLOAD APPLICATIONS

Netflix expressed a different viewpoint a year later, when it began promoting the ability to view selected content offline. Since then, Netflix has gone on to bring downloading functionality to more titles, and to address early-stage bugs. (One example: initially, Netflix limited the number of downloads for a particular title to three per year. But the application failed to account for instances in which an attempted download failed for any reason. If a user tried unsuccessfully to download a video three times, the title would become unavailable per the rights and usage formula. Netflix has since amended the way it records actual downloads.)

Netflix’s experience underscores a common realization: that implementing downloading applications can be more complicated than first envisioned. The temptation for video providers to develop homegrown download applications is common. And it’s true that offering a simple select-and-download functionality is relatively uncomplicated. But these truisms are countered by the realization that the video world is increasingly complex, demanding multiple iterations and releases of applications, plus constant updating to keep up with new OS releases and device peculiarities. Penthera’s Pressnell points out there are literally thousands of combinations of mobile devices and operating systems in the global mobile environment today. Subtle differences in the way handset manufacturers leverage the underlying features of Android and iOS environments can affect the way download applications work – or fail to work.

Also complicating the picture are unforeseen “edge cases.” Netflix’s early experience with counting failed attempts as completed downloads is one example. As that experience attests, developers have to be prepared to quickly adjust and update software to account for surprises in the way consumers interact with their applications and the way networks behave. Examples: a hotel Wi-Fi network returns a sign-in page after a user has requested a video from a cable or OTT provider’s application, confusing the video

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What's the future for video downloading? Penthera's Taitz thinks the world is still a long way off from realizing the ideal of always-available, always-reliable Internet connections, meaning downloading should continue to play a big role in how video gets to consumers' screens for some time to come.



application and creating an unresolvable loop. Or a user initiates a download over a home Wi-Fi network, but then takes off in her/his car minutes later, severing the Wi-Fi link. Or the available storage on a user's device and/or the battery capacity is exhausted just before a download is completed. "Stuff that happens in the wild is always different from what you plan for in the lab environment," says Pressnell (As it turns out, his team has created workarounds that address each of the circumstances listed here.)

What's the future for video downloading? Penthera's Taitz thinks the world is still a long way off from realizing the ideal of always-available, always-reliable Internet connections, meaning downloading should continue to play a big role in how video gets to consumers' screens for some time to come. "It's possible that world will exist one day," he says. "But I don't think we're near it. And I'm not sure we'll ever get there."

Also, the onset of new data-engulfing video formats like 4K video and virtual reality immersion make it extremely unlikely that streaming models alone will be able to faithfully satisfy the desire for more video over more devices, more of the time. If the video industry truly wants to make good on the TV Everywhere promise, providers have to recognize that even though broadband is present in lots of places, it's not always available everywhere it needs to be: which is where the screens and users are.

Stewart Schley, based in Denver, Colorado, writes about media and business-related subjects.