Consumers love streaming video, but delivering digital video can be a daunting and expensive challenge for content and service providers. So Nokia, building on its long pedigree of technology innovation and its vision of a connected world, turned to HPE. The result: a cost-effective platform for delivering personalized, broadcast-quality streaming video experiences.
For Content Service Providers, New Business Models Beckon

Consumers want to stream on-demand content. Here comes 5G to help them do it.

Consumers want and expect to stream digital content on line. They want to access it using a wide variety of devices. And they expect their content on demand, from anywhere in the world.

The telecommunications industry has heard these demands and it has responded. By 2020, leading telcos will support the 5th generation mobile network standard. Designed to support higher capacity than the current 4G standard, 5G will give the world broadcast-like delivery of streaming digital content.

That changes everything for Content Service Providers (CSPs) like broadcasters, cable providers, and media and entertainment companies. As 5G becomes a reality, CSPs will be positioned to launch new business models. It will become easier to package and distribute over-the-top (OTT) content, including data-rich content like Virtual Reality experiences, directly to consumers, augmenting traditional distribution channels. And CSPs will be able to better leverage data and network intelligence to find, engage, and retain consumers — and to generate new revenue streams.

100 Mbits
Data rate to be supported by 5G in metropolitan areas

78%
U.S. consumers subscribe to at least one OTT service

82%
Projected share of internet traffic that will be streaming video by 2020
Creating technology that connects the world

In 1981, Nokia helped launch the world's first global cellular network. Today, the company remains at the technology forefront, connecting people in ways that transform the human experience.

Powered by the research and innovation of Nokia Bell Labs, Nokia serves communications service providers, governments, large enterprises, and consumers with the industry's most complete, end-to-end portfolio of products, services, and licensing. The company's solutions support a range of innovative use cases spanning 5G, Internet of Things (IoT), virtual reality, and digital health solutions.

Nokia is organized as five business groups: Mobile Networks, Fixed Networks, IP/Optical Networks, Applications & Analytics, and Nokia Technologies. Within its IP/Optical Networks group, its video division is responsible for serving the needs of emerging streaming video providers.

EUR 23.6B

Net sales

~101K

Employees

100

Countries served
BUSINESS CHALLENGE

Crowded field, price-sensitive consumers

CSPs looking to crack the streaming content market must break through the noise — and allocate resources shrewdly.

For broadcasters, cable companies, and media and entertainment companies streaming content can boost revenue, enhance their brands, attract new customers, and build customer loyalty. Because digital content is delivered over the Internet, it enables Content Service Providers to reach markets on a global basis.

But the market is crowded. Consumers looking for entertainment or information have almost unlimited choices, ranging from traditional (books, broadcast, print newspaper) to the latest over-the-top content served by web companies, smartphone apps, or even other consumers.

CSPs need to break through the noise to get consumers’ attention — and keep it long enough to convert them to customers. They also need to address consumers’ price sensitivity: how much will consumers pay to stream the latest Hollywood blockbuster when they can view social media content “for free”?

Transitioning from traditional to online content delivery also requires a significant investment in the infrastructure, marketing programs, and business operations required to make the new business model succeed. CSPs must take care that this investment doesn’t detract from, or even cannibalize, other pieces of their business they rely on for revenue and share value.

As providers transition from broadcast to using internet-based protocols, they have to think about more than technology. They also have to look at their operations, procedures, culture, and organization.”

Paul Larbey, Head of IP video division, IP/Optical Network group, Nokia

100 Streaming video companies in 2016 in the U.S. alone
40% Respondents to research survey who have assembled their own “bundled” traditional TV and OTT services in 2016, up from 24% the prior year
190 Countries served by Netflix following its recent globalization strategy
IT CHALLENGE

For streaming video, the devil’s in the (technology) details

Delivering digital content is complex and data-intensive. It requires scalable, dynamic, always-on technology.

Building an infrastructure to deliver IP content is an enormous challenge in its own right. Content Service Providers may own or have rights to tens or hundreds of thousands of content assets. Housing these assets requires a platform that is massively scalable and dynamic. The assets must be easily searchable and instantly available.

The streaming experience must be high-quality. CSPs need not only an IP and optical networking infrastructure that supports the bandwidth and speed required to stream content at scale, but also a video-optimized content delivery network.

The network and platform technology must deliver always-on availability to reduce the risk that consumers will be unable to access content on demand.

CSPs also need technology to manage the subscription side of the streaming business model. They need the ability to target consumers based on viewing behaviors or other factors, and to react to consumers in real time to capture their attention and drive revenue.

And CSPs need the ability to integrate advertising with streaming content. The technology must be able to insert ads dynamically as the content streams.

“We with streaming over IP, you have to maintain broadcast quality of experience. And you have to build the network for peak, which is driven by sporting events, news events, elections.”

Paul Larbey, Head of IP video division, IP/Optical Network group, Nokia

54%
Consumers who purchase connected services find them too complicated, difficult to set up, or unreliable

500 milliseconds
Connection speed delay enough to decrease consumer engagement by 8% and increase peak frustration by 26%

47%
CSPs cite infrastructure complexity as major barrier to successfully offering digital content services
New business model, tailored to the demands of the rapidly-changing media and entertainment market

Nokia partnered with HPE to give content providers a streaming IP video solution that combines the control of on-premise with a cloud-like, OpEx funding framework.

With its Velocix Media Delivery Platform, Nokia enables providers to deliver high volumes of personalized, on-demand, and linear video traffic to consumers, over both fixed and wireless broadband connections.

The solution can be architected as an on-premise or cloud platform, giving providers control over the technology and by extension their intellectual property. But through a flexible model created by HPE Financial Services, the platform also delivers built-in funding flexibility, adjusting providers’ OpEx costs if their technology or usage requirements change.

Because storing for applications such as Network personal video recorder (PVR) video requires massive and highly scalable storage, Nokia selected the HPE Apollo platform as its storage technology. Content Delivery Networks (CDNs) must deliver content to different types of devices, but storing all possible versions of video content is costly and impractical. Nokia therefore leverages just-in-time transcoding where it’s logical to do so, and uses HPE Moonshot servers to power this critical conversion and delivery functionality.

HPE DL380 Servers power the Velocix Delivery Appliances, providing the right balance of storage and throughput per rack unit. Nokia is exploring HPE’s Gen10 Servers as a way to support more functionality within the same footprint. Nokia also plans to deploy HPE Edgeline Systems to push video processing closer to consumers, which reduces potential latency to optimize the video experience.

“The HPE Apollo platform gives us the densest storage possible, and HPE Moonshot complements our storage architecture, supporting just-in-time transcoding to reduce how much storage we need. By coupling this with our skim storage technology, we can double the number of transcodes previously possible. And looking beyond technology, HPE Financial Services ensures the commercial model scales as easily as the technical model.”

Paul Larbey, Head of IP video division, IP/Optical Network group, Nokia
Online Video Experiences That Consumers Will Love

Nokia’s CDN platform equips providers to craft personalized streaming video offerings that combine broadcast-quality viewing with unprecedented personalization.

Consumers love to view video online. They love to use a variety of devices to access IP video — TVs, tablets, smartphones, game consoles, and PCs.

Nokia is equipping Content Service Providers with the technology they need to make viewing video easy, fun, and high-quality.

The Nokia Content Delivery Network platform equips CSPs to create customized user experiences. They can innovate services that combine streaming video from multiple sources into a single, easy-to-use interface. Program guides can be generated dynamically, and tailored to users based on their history, preferences, or — ultimately — even their real-time reactions to content.

As Nokia further refines its CDN platform, distributing more compute resources to the edge, the platform will support video personalization closer to where it is consumed. This will make the streaming IP even more like a broadcast experience. Providers will be able to stream real-time sporting and election events, for example, confident that latency issues will not detract from viewers’ enjoyment of the event.

“Innovation is a team sport. By Nokia and Hewlett-Packard Enterprise working closely together we can innovate at a much faster pace than ever before.”

Paul Larbey, Head of IP video division, IP/Optical Network group, Nokia

35 second Potential delay in real-time video stream eliminated through edge computing

Increased Viewer retention when programming guides are personalized

Reduced Up-front capitalization costs incurred by CSPs compared to CapEx funded CDN models

LEARN MORE

CASE STUDY
HPE Financial Services enables Nokia’s video business to innovate, share risk, and win
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VIDEO
Accelerating IT Investment Solutions While Minimizing Risk: Nokia and HPE Financial Services
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