



CDN Market Update: Web Performance, DIY, and CDN Pricing Trends

www.cdnpricing.com

www.cdnlist.com

www.contentdeliveryblog.com

Note: Data from these slides can be used by anyone but please credit Dan Rayburn at cdnpricing.com

Latest Market Trends

- Commodity CDN pricing stable: down 20% in 2015 (down 45% for biggest customers), down 22% on average in 2016. Lowest pricing I have seen “offered” is \$0.002 per GB delivered.
- Customers seeing good volume growth, but no major catalyst, even from live streaming
- Growth from OTT services is overrated. Sling TV, PlayStation Vue, Hulu Live, YouTube TV, Direct TV Now etc. not big drivers. Biggest OTT drivers are those who do mostly or all DIY.
Live linear will have 3M subs or less combined, end of 2017
- DIY CDN can only be done by a few, no new deployments underway, on a large scale. BUT hybrid CDN is definitely something we will see more of
- Software and large object downloads driving the growth in M&E vertical
- Impact of mobile devices not a major force, for video
- 4K and VR streaming won't impact CDNs for many years to come
- Video takes up the largest % of traffic on a CDN, but contributes the least amount of profitable revenue
- Vendors have gotten extremely focused, realize that video/media/downloads is more of a check box for full-service CDNs
- QoE: “Finally” The Industry and CDNs Are Focusing On Measuring Quality
- Multi CDN strategy growing, even for smaller customers
- Everyone talks about the cost of delivering video in 4K, but no one mentions the added cost to the entire workflow. Shoot, edit, store, transcode in 4K. Encoding alone can take 6x longer to encode in 4K.
Bottom line: 4K streaming is not going to drive revenue growth for any CDN. If they say otherwise, it's simply marketing.
- VR, no real impact for next five years, in regards to revenue impact to CDNs.

Latest On Do It Yourself “Non-Commercial” CDNs

I don't know of any content owners or broadcasters embarking on a new DIY build-out. For most, it will never make sense from a CAPEX or OPEX perspective and they won't see a good return on investment. Those that have done it are: Amazon, Apple, Facebook, Google, Microsoft, Netflix, Pandora, SKY, Twitch, Twitter, Valve.

- Some of these companies have brought 100% of their CDN traffic in-house, (Netflix, Pandora), others $\frac{3}{4}$ of their traffic or more
- By my estimates, Apple has now taken 90% of their traffic, by volume, in-house
- For most, they will still use third-party CDNs for a small portion of delivery
- It is not hard or costly for any company on the list to build their own CDN with the same or better performance as a third-party CDN. Remember, they are building a “purpose built” CDN, much lower cost, much easier
- Even for Disney, MLBAM, Viacom, NFL etc. it does not make sense for them to build their own CDN. 15M subs is the sweet spot and even then there is not a good ROI on CAPEX dollars.
- Hybrid CDN is something we will see more of as companies look to overlay some of their infrastructure, on top of the third-party CDNs.

Competitive Landscape - Akamai

- **AT&T's CDN Offering Not Displacing Akamai or Limelight Anytime Soon**
- **News Reporting On CDNs Getting Shoddy: Case In Point, Akamai And The BBC**
- **Inside Apple's Live Event Stream Failure, And Why It Happened: It Wasn't A Capacity Issue**

- Akamai: growth will be tempered this year, due to DIY, competitive pricing, multi-CDN contracts, pricing declines. Media business "might" grow low single digits. Company confirmed performance pricing has dropped on average, 30% since Q4 of 2016
- Apple contract has gone from \$150M+ down to under \$10M, my estimate, over the last three years
- Amazon still has a lot of traffic to pull in-house, I expect by end of 2018 its 100% in-house
- Akamai has a lot of work to do when it comes to API support and working with developers

- "VR and AR content has massive amounts of data that will rejuvenate the media business for Akamai"
- "we had previously assumed Akamai's business was starting to stabilize"
- "OTT is not saving the day as we were hoping"
- "the ramp in OTT video-related traffic will help Akamai grow their media business"

- Brightcove: "What has changed is that, in Q1, we saw a significant increase in the price competition among CDN and cloud infrastructure providers, which accelerated the impact of these changes in our business. We believe that there is a \$10 million to \$13 million revenue headwind over the next 12 months that we need to cycle through as we renew certain media customer contracts to reflect current pricing in certain parts of the market."

Akamai: "We've seen some of this in past: as traffic grows, people who have been trying to do it themselves at some point may find that it wasn't as effective as they thought it would be, and then they come back to us."

Competitive Landscape - Others

- **Fastly:** Did \$100M in revenue last year, 90% from performance/security. Has raised another large round of funding, number being circulated is \$50+M. New money wasn't needed, but now allows them to grow even faster. Recently rolled out new security, image optimization and other services.
- **Instart Logic:** On a run-rate of \$100M in revenue for 2017. Pricing deals based on level of performance shown over competitors. All focused on performance and security, no video.
- **Level 3:** Still focused on the media vertical, no performance solutions, but security revs were \$200M in 2016 and they estimate that will grow 25%-30% this year. Media revenue was \$170M in 2016, which was a 13% growth YOY with projection for 18% YOY growth in 2017.
- **Limelight:** Very different company from two years ago. Network performance is good again, lots of new solutions have been rolled out, reduced CAPEX while still growing network, adding new customers, increased revenue range upward for this year. Customers liking the performance of the network, they are doing some very interesting things with regards to their network. Very focused media play, security/performance not the focus. So think of them as "specialists" for media. New QoS guarantee.
- **Amazon:** Winning more performance deals. Still working to drive pricing down. Still expanding their network, announced new security services in Q4, but not on direct competition to other CDNs, more of a check box for the AWS platform. Didn't integrate Elemental into the AWS platform, as a service.

Competitive Landscape - Others

- **Comcast:** Still winning deals where they take a share of traffic, not all of it. No one can compete with them on delivering media with good performance, since they are the last mile.
- **Google Cloud:** New to market, acquired Anvato, still have a lot to roll out, will take time. But as we heard today, cloud is a focus for Google and not just delivery, but providing a workflow.
- **Highwinds/StackPath:** Security play, but tied to CDN with very flexible pricing and packaging. Different approach where security isn't thought of as an add-on.
- **Verizon:** Just over \$200M in revenue for 2016, mostly still media, but also focused on security and selling into enterprise.

Takeaways:

- media has always been competitive, but pricing is about as low as it can get
- performance and security is the new CDN, but that too is starting to see real competitive pressure amongst vendors
- cloud platforms like Amazon and Google think of CDN/security as specific to their ecosystem
- CDN is a check box. It's a platform play now. Amazon acquired Elemental. Level 3 acquired Servecast. Limelight acquired Delve. Verizon acquired Uplynk and Volicon. Comcast acquired thePlatform. IBM acquired Ustream and Clearleap. Live linear platforms, holistic video ecosystem – that's the future.

CDN Vendor Revenue: CDN Service Providers Generated **\$3.15B** In Revenue From Media & Software Delivery in 2015

Edgecast \$100M in 2013 (company #)
Verizon \$130M in 2014 (company #)
Verizon \$190M in 2015 (my estimate)
Verizon \$220M in 2016 (my estimate)
2015 CDN Revenue: \$125M (70% of VDMS total revenue)

Level 3 \$130M in 2013
Level 3 \$146M in 2014 (not \$180M)
Level 3 \$138M in 2015 (not \$235M)
Level 3 \$170M in 2016 (company estimate)
2015 CDN Revenue: \$138M (2% of network services revenue)

Limelight \$173M in 2013
Limelight \$162M in 2014
Limelight \$174M in 2015
Limelight \$190M in 2016 (company estimate)
2015 CDN Revenue: \$120M (75% of total revenue)

Fastly \$5M in 2013
Fastly \$15M in 2014
Fastly \$60M in 2015 (company #)
Fastly \$100M in 2016 (my estimate)
2015 CDN Revenue: \$9M (15% of total revenue)

Akamai \$757M in 2013
Akamai \$912M in 2014
Akamai \$869M in 2015
Akamai \$847M in 2016 (wall street estimate)
2015 CDN Revenue: \$869M (40% of total revenue)

Amazon \$4.5B in 2014 (total revenue)
Amazon \$1.5B in 2015 (my estimate, total revenue \$6B)
Amazon \$1.8B in 2016 (my estimate, total revenue \$10B)
2015 CDN Revenue: \$1.5B in 2015 (25% of total revenue) but big storage %

Highwinds \$100M in 2013
Highwinds \$120M in 2014
Highwinds \$135M in 2015 (company #)
Highwinds \$150M in 2016 (my estimate)
2015 CDN Revenue: \$95M (70% of total revenue)

ChinaCache \$182M in 2013
ChinaCache \$223M in 2014
ChinaCache \$209M in 2015
ChinaCache \$220M in 2016 (my estimate)
2015 CDN Revenue: \$51M (24% of total revenue)

Notes: These numbers do not include revenue from App acceleration, DSA, Security, Licensed/Managed CDN, OVP, Private CDN, Transit, Co-lo etc. Rest of smaller and regional CDNs (CDNetworks, Tata, MaxCDN, CDN77, Hola CDN, Mirror Image etc.) \$250M combined in 2015.

The Latest On Media Pricing

- For 2016, pricing down 15% on average
- Pricing decline for all of 2017 expected to be 15% (no YOY change)
- Major pricing decline not coming soon, traffic growth drives pricing declines
- Mobile (tablets) are not a big driver of video traffic (1/4 the number of bits)
- Majority of video to mobile is still WiFi, not 3G/4G
- Traffic, specifically for video, is growing, but small % of content owners make up the largest % of traffic growth

The Latest On Performance Pricing

- 50TB-150TB: H \$0.10 L \$0.07
- 150TB-300: H \$0.07 L \$0.05
- 300TB-500: Averages \$0.03

- Professional services, tuning the service
- Analytics
- Image optimization
- Length of contract

THERE ARE A LOT OF VARIABLES! - THIS IS ONLY AN ESTIMATE.

I Know About The CDN Market Because Of People Smarter Than Me

Read post: <http://bit.ly/1tARhUT>

“I’ve spent the last seventeen years tracking the CDN market, talking to vendors, customers, policy makers, telcos, carries, MSOs and Wall Street money managers. But I want to point out that I don’t know everything there is to know about the CDN market and CDN related technology.”

“I get to speak to the smartest people who are building, running and using the largest private and public CDN related networks around. One’s self-importance is not based on what they know, but what they can share with others, which is my only goal.”

My job, as I see it, is to:

INFORM – EDUCATE – EMPOWER

Thank you to all the customers & vendors who trust me with their data

Questions and Additional Resources

Latest CDN pricing can always be found at www.cdnpricing.com

For a list of CDN vendors see www.cdnlist.com

To find all posts on my blog on the topic of CDN,
go to www.contentdeliveryblog.com