Speed, Scalability & Savings

How Ad Tech Gains a
Competitive Edge with zColo

An Expensive Dilemma

D igital advertising has changed the landscape of available media for marketers everywhere. The days of Don Draper are long behind us. Today's sophisticated advertisers have more in common with statisticians than ad men. Data now drives every conversation, and critical matrices define growth and success. This rebirth of the modern advertiser is now enabled by new and innovative software applications, which are changing the game.

Advertising technology, or Ad Tech, has been exploding as an industry since 2010. The Advertising and Marketing industry is ranked as the third fastest-growing industry with a 200 percent growth in revenue and employees.[1] Ad Tech revenue is set to grow over 300 percent by 2020 -- up from $30 billion in 2015 to $100 billion by 2020.[2]

As advertisers become more data-centric and technology-savvy, Ad Tech applications must increase their capacity to deliver meaningful solutions or they will lose swiftly to the competition. These applications must be accessible and functional in an instant. Any delay in moving data or supplying content could lead to missed revenue. Amazon found every 100ms of latency cost them 1 percent in sales. Google found an extra 0.5 second in search page generation time dropped traffic by 20 percent.[3]

To execute high-volume data collection and analysis, buy & sell in milliseconds, and deliver ads across multiple platforms, Ad Tech companies are forced to invest heavily in infrastructure -- which can quickly force CapEx investments and complexity to skyrocket. As a result, companies are then left with three major challenges when it comes to executing critical operations:

1. Control growing costs
2. Dramatically reduce latency
3. Support fast growth

To solve these challenges, leaders in Ad Tech are moving toward scalable infrastructure that provides speed, grows with them, and reduces CapEx investment.

1   Graham, K. (2015, September 4). Ad Tech Firms are 2015 Fastest-Growing Companies in the US. Retrieved from MonetizeMore: http://www.monetizemore.com/blog/ad-tech-firms-are- 2015-fastest-growing-companies-in-the-us/
2   Loechner, T. (2015, April 8). Ad Tech Revenue To Grow To $100 Billion By 2020. Retrieved from Real-Time Daily: http://www.mediapost.com/publications/article/247365/ad-t ech-revenue-to-grow-to-100-billion-by-2020.html
3   Liddle, J. (2008, August 27). Amazon found every 100ms of latency cost them 1% in sales. Retrieved from GigaSpaces XAP Blog: http://blog.gigaspaces.com/amazon-found-every-100ms- of-latency-cost-them-1-in-sales/
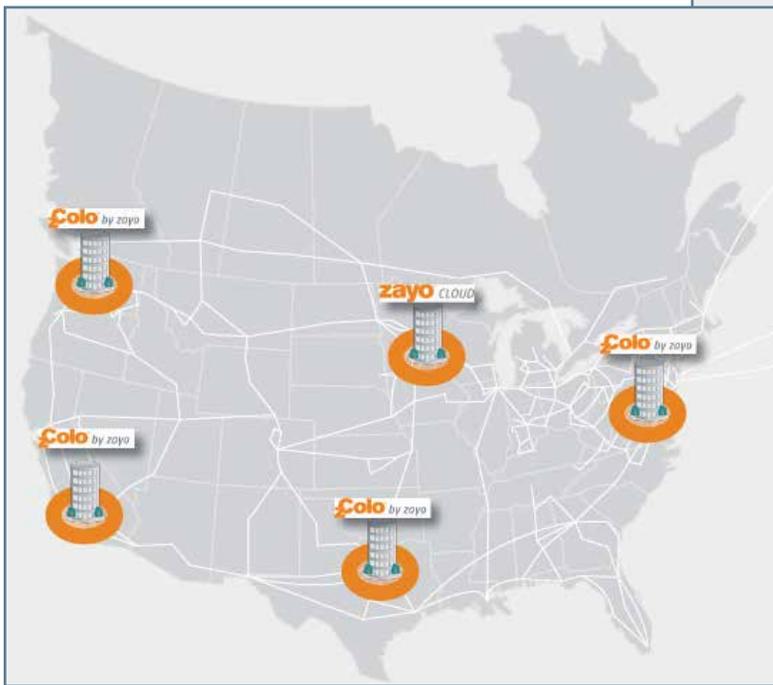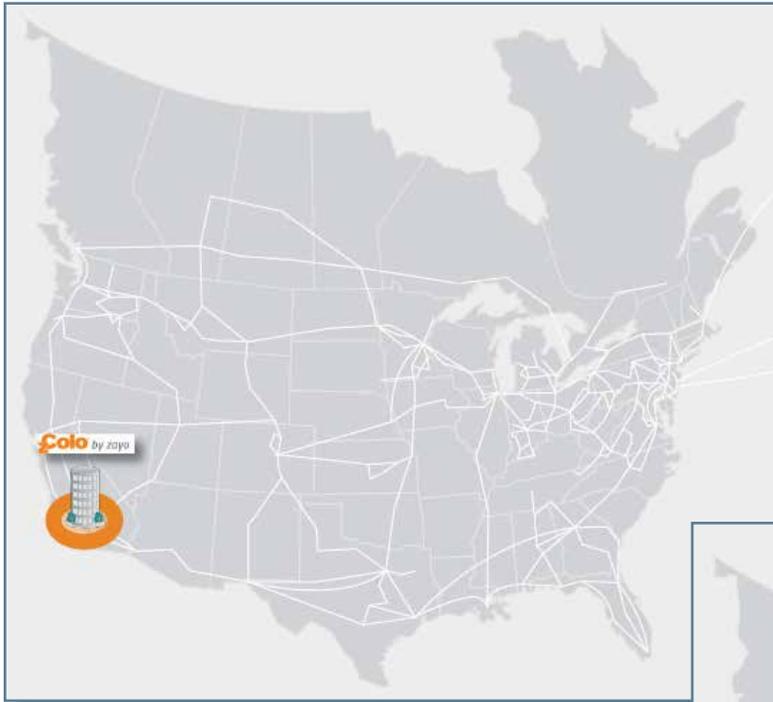
Scalable Savings

Finding the balance between fast, resilient infrastructure and reduced CapEx investment can be tricky. Many companies start off with a simple colo + 1G fiber strategy. They tend to select data centers near their headquarters -- making server maintenance simple. In addition, they purchase connectivity solutions to deliver their applications or content to potential customers around the world. However, as traffic grows, latency may eventually take its toll on user experience, impacting revenue growth.

Over time, Ad Tech firms may supplement their colocation with public cloud services. They tend to use the public cloud initially to manage peak traffic demands, create development environments, and become more scalable. However, it's not long before operational costs can become unmanageable. Many turn those dollars over to a capital investment, where they own or lease the equipment themselves. They will then stretch their deployments out to two data centers in geographically diverse markets. This also allows them to decrease latency and improve customer experience. 10G network is deployed to connect the facilities and compute and storage systems are distributed.

Eventually, demand in edge markets increases and connectivity-focused colocation deployments are needed around the world. High-volume 100G connectivity is lit and distances are significantly shortened between content and the end user. Latency continues to decrease, by up to 55 percent compared to the previous deployment models. Private cloud is enabled to drive operational efficiency, offer DR resiliency and store petabytes of ever growing data. Additionally, resiliency of the overall infrastructure actually increases. By using a more streamlined colocation model with huge bandwidth, if something were to go down, compute can simply failover to any of the other facilities without missing a beat.

Due to Ad Tech's high-density computing needs, companies are utilizing 8 to 10 kw/cabinet --twice as much as the average enterprise load, translating to significantly higher costs and complexity to run their applications. On top of this, they need to dedicate operational spend for a geographically diverse staff to manage all these servers. They have to deal with multiple providers of colocation, cloud, and network services around the world and need people skilled enough in every area to design deployments.

What many smart Ad Tech firms have done is found ways to bundle all these services together, add outsourced remote hands staffing, and save up to 34% on the standard cost of their whole deployment.[4]

4   Based on list rates for individual services versus combined expected TCO for Colo + Network from zColo.

How Ad Tech companies reduce latency and control costs with Zayo

zColo, Zayo's data center division, offers over 60 carrier-neutral colocation facilities across North America and Europe. Ad Tech companies around the world have leveraged these facilities, as well as Zayo's expansive network, to deliver creative cost-saving and latency-reducing solutions.

MediaMath

MediaMath, a leading independent programmatic advertising company, leveraged this expansive portfolio to expand their computing power, reduce latency and control their costs. Over nine years, MediaMath's client base grew to more than 4,000 diverse global companies. Its technology platform analyzes more than 200 billion customer opportunities daily.

"Zayo's ability to support high-power density loads and our ability to scale were key factors in winning MediaMath's business," said Greg Friedman, executive vice president, Colocation and Cloud Infrastructure at Zayo.

MediaMath decided to expand its colocation into zColo's Oak Brook, IL facility (a suburb of Chicago). They coupled this with Zayo's expansive network capability, leveraging 10G wavelength connectivity to key peering and interconnection facilities. "The combination of Zayo's connectivity and colocation was a big differentiator for us. While we are moving our data center to the edge, Zayo's infrastructure ensures that we have the performance needed to process, move and store massive volumes of real-time data," said Keith O'Neill, senior engineering manager at MediaMath.[5]

OpenX

OpenX, a global leader in creating programmatic advertising marketplaces, expanded its data center footprint with zColo to support the growing volume of transactions on its OpenX Ad Exchange. The exchange facilitates trillions of transactions yearly for the company's more than 1,000 publisher clients worldwide.

Given Zayo's interconnect-rich data center portfolio and extensive fiber network we were well positioned to support OpenX's growing needs. They decided to expand their dense

5   Zayo Group. (2016, 23 June). MEDIAMATH SELECTS ZAYO FOR COLOCATION AND CONNECTIVITY. Retrieved from Zayo.com: http://www.zayo.com/news/mediamath-selects-zayo-for- colocation-and-connectivity/

footprints at zColo facilities in Ashburn, VA and Oak Brook, IL. To accommodate this growth, zColo invested millions in expanding our space and upgrading our infrastructure at both locations. This, in turn, saved OpenX tens of millions in capital expenditures and helped them scale their computing power at a breakneck pace.

Shane Garoutte, vice president, technology operations at OpenX, said, "Zayo continues to be a valuable partner for OpenX. Zayo has proven to be adaptable to the needs of our business while offering a competitive price compared to other providers, making the decision to expand our use of their platform an easy one."[6]

Tackling the Holiday Rush

One of zColo's Ad Tech customers sees a huge traffic spike each year during the holiday season. However, for the rest of the year, network demands are significantly lower. In addition, they wanted to distribute their computing across multiple regions, with a more streamlined design. They found themselves overpaying significantly for bandwidth they weren't using and infrastructure-heavy colocation facilities they didn't need. They decided to leverage Zayo's unique data center footprint and innovative network solutions to control costs and fit their needs.

By moving to four smaller colocation deployments, they were able to distribute their computing power to the edge more efficiently and save money on infrastructure they weren't using. Since they coupled their colocation with diverse connectivity, if disaster were to strike, their key applications could simply roll over to another facility, rather than everything going down.

The customer also found great value in FlexConnect, Zayo's commitment-free, usage-based ethernet for cloud and data center connectivity. By leveraging FlexConnect they were able to pay for only the traffic they used each month, rather than a flat fee for bandwidth they may not fully need. This allowed them to ramp up their bandwidth for a few months and easily turn it off when it is not needed. They payed a small fee for ports and just 3 cents per gigabyte for data traffic.

By combining four small colocation deployments around North America and 50G FlexConnect, this customer was better able to manage their costs and the onslaught of holiday traffic they receive every year.

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6   Zayo Group. (2016, March 15). OPENX SELECTS ZAYO FOR DATA CENTER EXPANSION. Retrieved from Zayo.com: http://www.zayo.com/news/openx-selects-zayo-for-data- center-expansion/

**The Future of Ad Tech Infrastructure -
and the world at large**

As petabytes of data storage quickly turn into exabytes, latency decreases to almost immeasurable speed, and growth in mobile computing continues, enterprises are looking to communications infrastructure to future-proof their operations. The future of colocation and network infrastructure looks to leverage mobile tower technology in new and fascinating ways.

Today colocation comes in three primary flavors:

- Large, infrastructure and security-rich facilities in the suburbs
- Smaller, interconnection- focused carrier hotels primarily located in the central business district
- Midtown facilities that offer the best of both with low latency, low cost and high scalability

Connecting the suburban or midtown facilities to the downtown carrier hotels, called tethering (shown), allows customers to leverage lots of power and redundancy for core computing needs while accessing a plethora of network connectivity options.

In the future large, primary computing data centers will remain, but they will connect to small hubs located near fiber towers. The network will connect directly into the tower itself, pushing content over the mobile network with lightning speed. Dense fiber will allow more content to be delivered faster over wireless networks.

The potential benefit to Ad Tech could be industry-changing. Ninety percent of consumers have stopped using multiple mobile applications due to poor performance[7], often related to lag. A reliable, consistent mobile experience is central to a company's brand reputation and financial performance. By pushing content directly to the tower, mobile network latency could eventually become imperceptible to the end user. Zayo continues to work with its wireless partners to extend and densify their networks, which will improve quality, reliability, speed and performance for years to come.
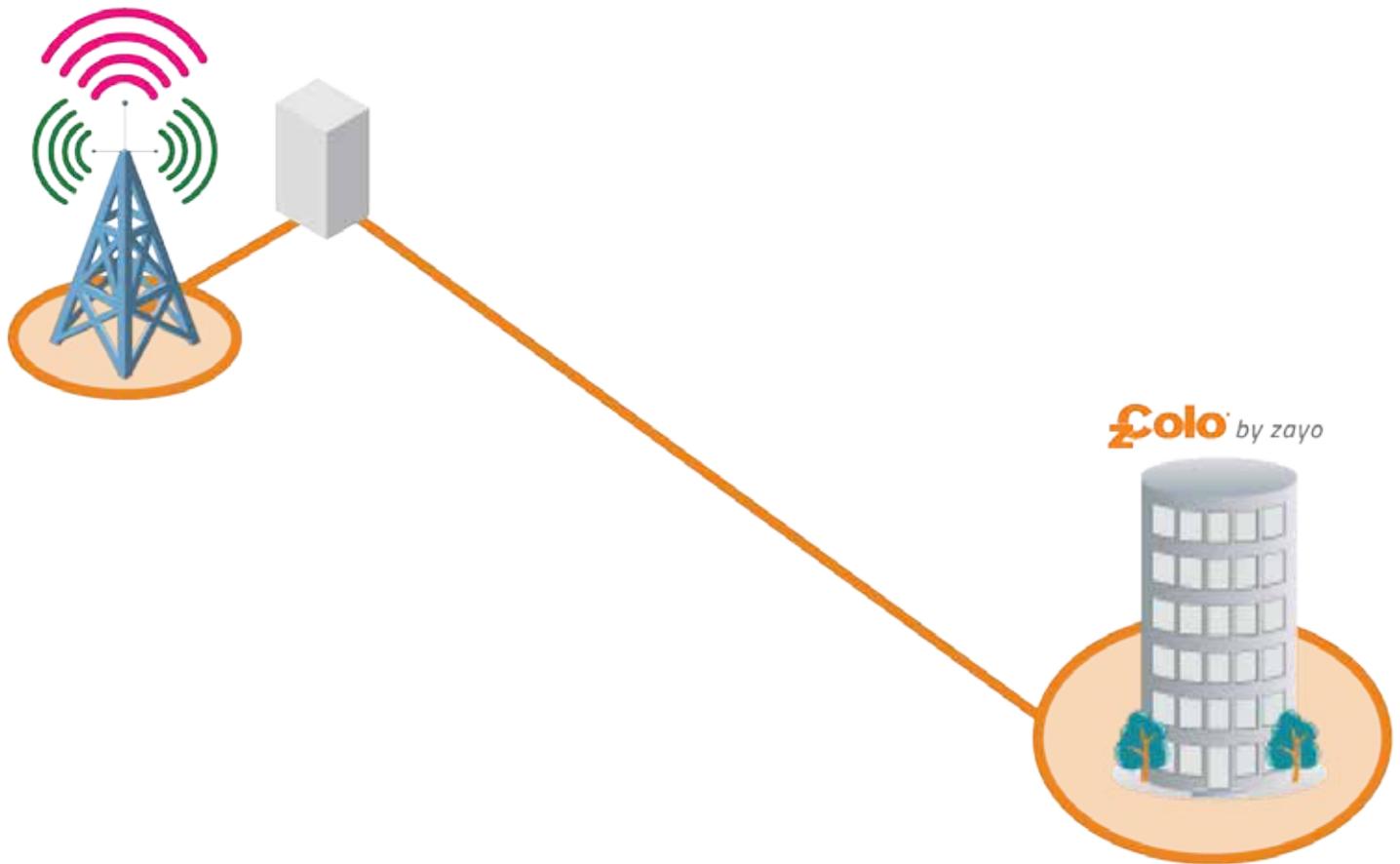
7   Whittle, D. (2014, July 16). Nearly 90 Percent Surveyed Stop Using Apps Due to Poor Performance. Retrieved from APM Digest: http://www.apmdigest.com/nearly-90-percent-surveyed- stop-using-apps-due-to-poor-performance

Summary

For every 100ms of latency, it could cost emerging Ad Tech applications one percent in sales. But the cost of scaling can be insurmountable. Companies can decrease their latency and control their costs by addressing all elements of their infrastructure: connectivity, colocation and cloud. Zayo offers all three solutions and has a track record of integrating them to generate the most value to our customers.

About zColo by Zayo

zColo by Zayo provides colocation, connectivity and cloud services in North America and Europe. Our extensive data center footprint in Tier 1 and Tier 2 (edge) markets provides businesses with scalable colocation services for critical networking, data storage and processing. Zayo's carrier-neutral approach enables interconnection to major carrier hotels and data centers across our global network, and diverse fiber risers facilitate peering with the ISPs and content providers. Businesses benefit from flexible space and power options, customizable solutions and high-touch mission critical support – and access to Zayo's robust, global communications infrastructure.

To learn more about zColo's portfolio of colocation solutions, visit zayo.com or email us at zcolopromotions@zayo.com to request a tour of a specific facility.