FROST & SULLIVAN

2013

PeerApp

2013 Market Leader Profile

FROST & SULLIVAN

50 Years of Growth, Innovation & Leadership

Market Leader Profile
Market: Transparent Caching
Leader: PeerApp

Frost & Sullivan's Global Research Platform

Frost & Sullivan is in its 50th year in business with a global research organization of 1,800 analysts and consultants who monitor more than 300 industries and 250,000 companies. The company's research philosophy originates with the CEO's 360-Degree Perspective™, which serves as the foundation of its TEAM Research™ methodology. This unique approach enables us to determine how best-in-class companies worldwide manage growth, innovation and leadership. Based on the findings of this Best Practices research, Frost & Sullivan is proud to present this 2013 Global Market Leader Profile in Transparent Caching for PeerApp.

Key Industry Challenges Addressed

Over the last decade Web consumption patterns have been moving away from simple web page viewing to the mix of bandwidth-intensive video streaming, media download, social networking, file sharing, cloud services and online gaming across a variety of mobile and stationary devices. Frost & Sullivan notes that subscribers are now increasingly demanding in their expectations for quality and availability of Internet content experience, and these trends are accelerated by the emergence of long-form Internet video services, and by new over-the-top (OTT) access methods such as (most recently) Aereo and Chromecast. This creates a problem for service providers, as growing Internet traffic does not necessarily translate into increased revenue for operators. Operators face strong operational challenges in balancing this subscriber demand with network investment. A cost-efficient approach to growing network capacity becomes business-critical.

Caching of Internet content close to subscribers allows operators to reduce latency of content access, improve subscriber quality of experience and offload operator network capacity. Caching comes in multiple forms, including global CDN caches such as Akamai; content-specific caches such as Google Cache and Netflix Open Connect; and operator-controlled transparent caches. Mobile and fixed line operators alike have raised concerns over global CDN and content-specific caches: lack of visibility and service availability, and competing business models. As a result, some operators – especially tier 1s – have rejected caches that they do not control in favor of a transparent cache infrastructure that they fully control. Many operators use both types of caches simultaneously.

Among the various strategies for caching in use today, Frost & Sullivan points out that transparent caching best solves the extremely challenging task of balancing network investments with the quest to deliver high-quality video and data services to subscribers, while maintaining network operator control over its subscriber and network assets.

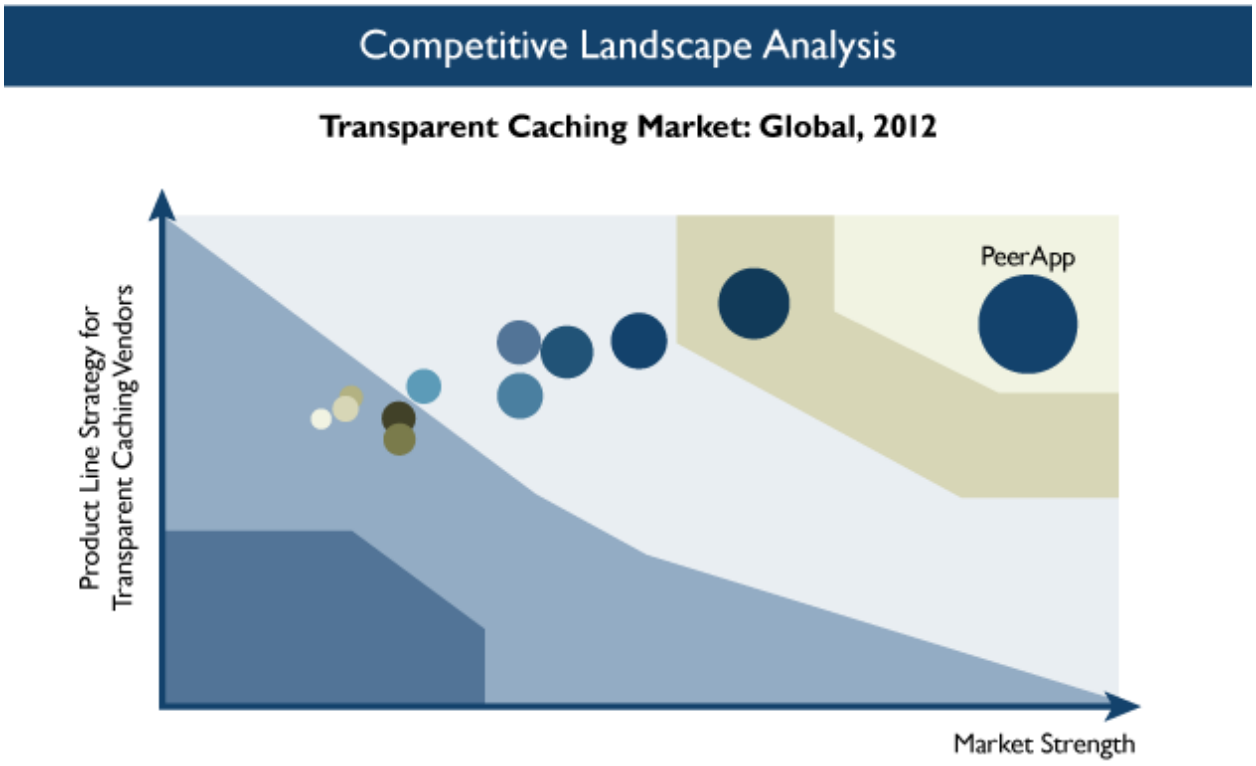
The reality is that subscribers are accessing content from a wide variety of Internet sources and service providers need to implement a solution that can manage content being

consumed from multiple device types. As this awareness grows, and as continued R&D investment drives transparent caching advancements, the demand for transparent caching solutions in the market is growing.

PeerApp's Performance in Global Transparent Caching Market

PeerApp was founded in 2004 and is headquartered in Newton, Massachusetts, USA. The company has offices and channel partners in North America, Latin America, Europe, Asia-Pacific, Africa and the Middle East, and is the leading vendor in the transparent caching industry. According to Frost & Sullivan estimates, PeerApp has been the market leader by revenue for the last two years, accounting for 27% of total market revenues in 2012. Also in 2012, Cisco selected PeerApp to provide the transparent caching product within Cisco's Videoscape Distribution Suite, known as VDS-TC.

PeerApp has seen consistent growth for the last several years, with double-digit revenue growth in 2012 - despite a generally challenging economic climate. The company shipped their first solution in 2006, which makes it among the most experienced and respected participants in the industry. PeerApp has over 300 network operator deployments globally across both mobile and fixed networks. A number of these are tier 1 network operators. As a result, Frost & Sullivan appreciates the fact that PeerApp's total deployment footprint is considerably larger than that of its nearest competitors, and their transparent caching technology has the widest reach within broadband cable, DSL and mobile networks.



PeerApp is the clear current market leader in the transparent caching industry.

Key Performance Drivers for PeerApp

Continued Growth and Strong Performance

Frost & Sullivan firmly believes that PeerApp's position is heavily based on the company's technological innovations and the reliability, functionality, and minimal deployment risk offered by its products. Their wide and varied deployments have contributed to the maturity of their solution, providing the experience to perform successfully across a broad set of geographies, network types and services.

Robust Caching Implementation and Complete Feature Set

Transparent caching should not require modification of any system or browser setting. The performance benefits should be automatic as the only evidence of caching. PeerApp adheres to this strict definition of transparency. UltraBand ensures full transparency to the subscriber and content origin: It does not require any special HTML code or DNS redirection from a content source.

This approach also ensures that PeerApp preserves all application logic. Because the system identifies cached items at the object level, it provides the granularity necessary to support content adaptation for different devices (for example sending different video resolutions for smart phones, tablets, and televisions) or network conditions. Meanwhile, the user-to-origin session is undisturbed, so critical functions such as user authorization, unique visitor reporting and geo-controls are unaffected.

Because a transparent cache needs to address as much Internet content as possible, platforms need to support multiple services and protocols running across the network. PeerApp's UltraBand offers the broadest content coverage in the industry, including support for HTTP flash video, Netflix, Silverlight, software update services, HTTP-based file sharing, and peer to peer file sharing such as BitTorrent.

PeerApp's approach is also automatically adaptive; UltraBand automatically ingests and serves content as it becomes popular and does not require operator intervention to continuously modify the network or the caching solution to support a popular new service or device or to be connected to a central server for signatures and routing information.

Carrier-Grade Solution

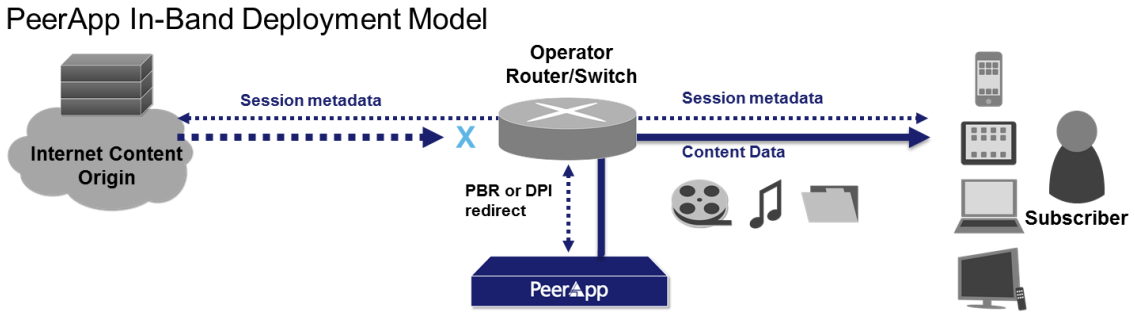
UltraBand is software that runs on carrier-grade computer, storage and switch platforms, allowing it to readily leverage advances in processor and storage technology. It scales from small to very large capacities; individual systems can start small and expand as network traffic grows.

PeerApp employs a clustered system architecture that has no single point of failure. It has been designed for in-service software upgrades and configuration changes, and architected to ensure that network traffic is not interrupted even in the event of a caching system failure.

Proven Network Deployment Model

A fundamental difference among caching platforms is the way in which they integrate to the operator network. Integration approaches are often grouped into two categories: "in-band" and "out-of-band".

Both categories have existed for some time but in-band approaches— PeerApp's object-based method and proxy caching—account for the vast majority of commercial operator caching deployments. This type of network integration is not unique to caching: in-band deployments are the standard for nearly all network value-added services: firewalls, session border controllers (SBCs), DPIs, content filtering and mobile data optimization are all deployed in-band. PeerApp points to its particular object-based in-band approach as central to its ability to maintain full transparency, preserve application logic and comply with global copyright laws.



In-band network deployment preserves end-to-end session signalling to ensure transparency, application logic. Image courtesy PeerApp.

By contrast, out-of-band solutions employ methods such as border gateway protocol (BGP) routing or HTTP redirection to make the cache become an alternate endpoint for the user session. In these approaches, the cache must attempt to emulate the end-to-end application logic of each originating service. Since there are far fewer out-of-band solutions commercially deployed, it is too early to say whether they can achieve the same level of robustness.

Analytics

Operators want not only to control content traffic but also to better understand it. The cache provides a useful point for visibility since it is a point through which all or nearly all content traffic goes. Recognizing this potential, PeerApp in 2011 launched UBInsight, its cache content analytics product.

UBInsight provides visibility into Quality of Experience (QoE), network performance, service, content and subscriber trends for cached content. UBInsight is designed to help both network planners and line-of-business owners make more informed decisions on service offerings and network investments.

Roadmap to OTT Monetization

In addition to network optimization value propositions as provided by transparent caching, network operators have long been seeking strategies for monetization of OTT services.

In May of 2013, PeerApp announced its **Content Service Extension (CSE)** initiative in partnership with CDN leaders EdgeCast and Limelight. CSE is a service architecture framework allowing network operators to expose their caching resources to global CDNs and OTT content publishers. CSE services are accessible via a set of open network APIs, supporting multiple tenants. CSE offers a practical path to OTT traffic monetization that is market-aligned, open, and multi-tenant in nature.

With CSE, PeerApp and its partners are evolving the market beyond pure transparent caching to Infrastructure as a Service (IaaS). With IaaS operators not only optimize their own networks but also leverage them as a commercial platform for content and service providers, in a way that is cooperative rather than competitive with these third parties.

Conclusion

Many mobile operators, telcos, and multiple system operators (MSOs) are using or actively looking at transparent caching as a required element in their network to control over-the-top content consumption and to provide the best possible user experience. It is a unique technology in that it simultaneously benefits a content owner, a network operator, and, most importantly, a broadband or wireless subscriber.

PeerApp is the leading transparent caching vendor, with a market share of 27 percent by revenue in 2012. The company is witnessing continuous growth in revenue on the strength of its solutions within major service provider networks, and its status in the industry is augmented by the fact that the company is at the forefront of innovation and development in this industry. PeerApp has a global footprint and is well known in established, as well as upcoming, regional segments of the global transparent caching market. Considering the company's recent performance and future strategies, Frost & Sullivan expects PeerApp to do quite well in the coming years and continue to maintain the leading position in the industry.

About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best-in-class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best-practice models to drive the generation, evaluation and implementation of powerful growth strategies. Frost & Sullivan leverages 50 years of experience in partnering with Global 1000 companies, emerging businesses and the investment community from more than 40 offices on six continents. To join our Growth Partnership, please visit http://www.frost.com.