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Create Interactive, Intelligent and Immersive OTT Applications with the Software-Defined Mobile Edge

The communications and digital markets are under massive, synchronized transformations. Edge Internet is a distributed Internet architecture combined with a programmable paradigm where computing and connectivity are provided in close proximity to the point of consumption to meet the demands of current and future applications and services.

The synchronized transformations of the communications and digital markets are impacting every trillion-dollar industry in our economy. The next wave of mobile connectivity (5G and next gen wireless networks) and Edge computing is here bringing new applications and services the current infrastructure cannot handle.

"We are at the cusp of a seismic paradigm shift wherein computing and communications will move from a core network with a centralized cloud architecture to the Edge. The reasons are manifold but the basic premise is that in order to serve the data computing and communications demand of objects, sensors, people, resources, compute, and intelligence have to move to the Edge to not only operate in the most cost-effective way but to enable new use cases that can't be supported by traditional cloud architectures." – Chetan Sharma, Industry Analyst.

The Edge Internet is a distributed overlay Internet architecture – public and private – with programmable Edge API's, creating new computing and communications paradigms.

With the rise of 5G and computing environments, AlefEdge is key to unleashing the convergence of networking and computing. AlefEdge's Software-Defined Mobile Edge platform enables a new set of mobility, cloud and applications APIs that unleash Enterprises and application developers to leverage the full power of the Edge. By utilizing our unique APIs, Enterprises can deploy, orchestrate and manage Edge applications and services.

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Alef Media Streaming

The current video streaming market is fractured and disaggregated. Independent content companies are building their own applications for internal and external consumption. This creates industry wide problems that can only be addressed by providing technology solutions to content providers, allowing them to focus on what they do best – providing high quality content.

Alef Media Streaming is a next generation Video Enablement Platform. The platform supports all types of video content, including short form, long form, live form, live social, etc. for content providers and advertisers. The Alef Media Streaming Platform provides you with the tools you need to enable an improved user experience while focusing on new applications and content. The streaming technology allows improved delivery and content aggregation by streaming from the Edge.

Industry Problems

Video streaming on mobile devices has exploded. 70% of YouTubes views are now on the mobile![1] With the continued rise in the number of mobile devices in the market and new applications built specifically for mobile video streaming, an endless amount of content is being introduced. Many publishers are focusing directly on mobile services (see Quibi). As these applications and new applications grow, video streaming will continue to be an issue across every market, from consumers to Enterprises.

In recent years, the amount of bandwidth utilization has skyrocketed on mobile networks. Bandwidth limitations are constantly straining the networks, which has a direct impact on the user experience for video streaming. The rise of more intelligent and distributed Content Delivery Networks helps address part of the problem of bandwidth limitations and video quality, but it does not solve it or build towards the future network the industry is building. It is clear that the applications and networks are impacted, and the quality issues effects the end user.

Another issue not being addressed is the disaggregation of video services. Most publishers manage their own streaming service whether it be live TV or Video on Demand. When you add in the advertising opportunities, the problem gets even larger. In 2020, there are over 200 streaming services in the United States alone.[2] Acquiring customers for new services is a challenge, as most already are subscribing to at least one streaming service, if not more. Similarly, at what point does application differentiation (and not content) become a factor? Differentiated services will be a key driver to commercial success.

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[1] https://blog.hootsuite.com/youtube-stats-marketers/

[2] https://flixed.io/complete-list-streaming-services-2020/

Bandwidth Limitations and Video Reliability	Disaggregation of Video Services	Lack of Video Intelligence

These issues have become mainstream for video services. Enterprise applications are growing exponentially, with employee collaboration and remote working being key drivers. Alef Media Streaming addresses the overall industry issues, while focusing on and providing unique services and capabilities to the Enterprise.

Enterprise Problems

Enterprises are focused on digital transformation, and video is key to their internal and external strategies. Collaboration, remote field services, corporate messaging, etc. whether internal or external, are highly dependent on a high-quality video experience. If the available bandwidth for a video stream is impacted, the overall service is degraded, and the experience is negatively impacted. When the video service is complex and not easily available to everyone, adoption is significantly impacted. Video services must be easy to consume while enabling content to be easily created, edited and uploaded. The entire process needs to be frictionless, allowing for uniformity in adoption and consumption. The ease of consumption creates new opportunities for Enterprises to leverage video for multiple uses. While the rise of video services creates network and distribution costs, this can be offset by having the video offloaded and optimized for performance using Alef's Edge Peering technology. (See Alef Boost).

Available Bandwidth for Quality Video Streams	Complex Video Services	Large Network and Distribution Costs

When an Enterprise implements Alef's Media Streaming solution, they can focus on the content, – instead of the technology behind the video streaming service, which is taken care of by Alef.

Solution Deep Dive

Alef Media Streaming provides a micro-backend to content providers and content aggregators. The Edge enables content providers to innovate, without having to worry whether or not the network can handle it.

Enterprises and application developers are not necessarily streaming application companies and they should not be concerned with the technology requirements. Instead, they can focus on what they do best – creating content. You can find an endless number of streaming applications resulting in a fragmented market. The responsibilities of who does what are flipped. Enterprises want to be able to create the content and distribute the content – not the security of the application, the quality behind its delivery and latency issues, etc.

Once connected to Alef's Media Streaming Backend, application developers can rapidly create new products and services like:

- **Enhance Existing Apps** - Enhancing OTT offerings leveraging the Edge with immersive features. Placing content at the Edge is more than just immersive delivery. It provides the ability to create an enhanced user experience through a variety of features.
- **Video Crunch** - Entertainment and content are both mobile. The rise of using mobile devices for entertainment and advertising is undeniable. Content must be quick and enjoyable. With Alef Media Streaming, you can create digestible short form content chosen and specified for end users to consume.
- **"My TV"** - Leveraging big data is key to a personalized and engaging experience. Using Telco Big Data, OTT's can create personalized and suggested content chosen by/for you to consume.
- **Car.TV** – Video screens in the back seats of cars faded out due to technical limitations. With Car.TV, you can stream content to the screen without any concerns about application handoff, providing passengers with new forms of entertainment.
- **Enterprise Applications** - Enabling Enterprises to communicate with employees through video. The content is chosen by Enterprises for employees to consume is only available to the employees.
- **Venue Tube** - Streaming of specific content chosen by the venue provider and only available at the specific location. Dependent on the venue, conferences, keynotes, sporting events, concerts, etc. a stream of the content is available for attendees to view at the location.
- **Smart Surveillance** - Today, facial recognition is done through image-based machine learning. With Alef Media Streaming, the image-based machine learning can be turned into video-based machine learning. This turns video surveillance streams into intelligent video streams where continuous processing can be done at the edge.
- **Venue Replay** - Providing fans at venues a video on demand (VoD) experience on their mobile devices of what is happening at the game. The replays are stored at the Edge and available to fans through stadium applications for their viewing.

Alef Media Streaming has distinct set of product features which can be leveraged:

- Discovery, Delivery and Distribution
- Ultra-HD Content
- "A La Carte" Offerings
- Sponsored Content and Rating Groups
- Enhanced OTT Offerings (New Products)

- Live and VoD Channels
- Live Upload and Live Viewing for Social
- Immersive Edge Delivery
- Leverage Telco Big Data
- Edge Advertising Insertion

Alef Media Streaming can be deployed and leveraged by Enterprises to directly solve their technology backend issues. Enterprises can leverage a secure, intelligent and manageable Streaming Application for their employees allowing them to focus on the content – instead of the issues around a streaming application.

Video Solution Types

In the world today, there are six core video types that Enterprises leverage in their daily communications. Employees leverage them in both their work and personal lives. You can read more about how the Software-Defined Mobile Edge impacts these video types, how they are being used today and how Enterprises can get involved by clicking the links below.

- Video on Demand Streaming
- Stream Processing
- Live Streaming
- Collaborative Video
- Video Notifications
- Interactive Video Messaging

How Alef Media Streaming Helps Enterprises

Alef Media Streaming is an easy to deploy backend that will dramatically impact your video streaming and employee communications. By using Alef's open and modular APIs bundled together as Alef Media Streaming, you can not only enhance your video streaming, but continue to leverage your ecosystem solutions.

We have seen in several deployments how Alef Media Streaming can create benefits for Enterprises and streaming providers. Based on measurements made in networks where Alef's SD-ME has been deployed, Alef Media Streaming provides:
- 2.1x better HD resolution at 1080p and 1.7x better startup time (80th percentile) for Media & Entertainment applications;
- 12.6x better HD resolution at 1080p and 1.8x better startup time (80th percentile) for advertising applications;
- 2x better in PDF and 360 Degree HD Images throughput and 1.7 better download response times (80 percentile) for learning applications; and
- 1.4x better HD resolution at 1080p, and 1.5x better startup time (80th percentile) for virtual reality applications.

| Enhanced Performance | Easy to Use Systems (Frontend and Backend) | Secure Streaming Applications |

How Enterprises Can Deploy

The Alef Media Streaming solution can be easily deployed for your Enterprise. Signing up, deploying and managing can be done through our Alef EdgeNet Portal. You can learn more about Alef Media Streaming and how to deploy the solution today by learning more in our Resources section.

For more information on any of the documentation, please contact us, use the search bar or contact your sales representative.