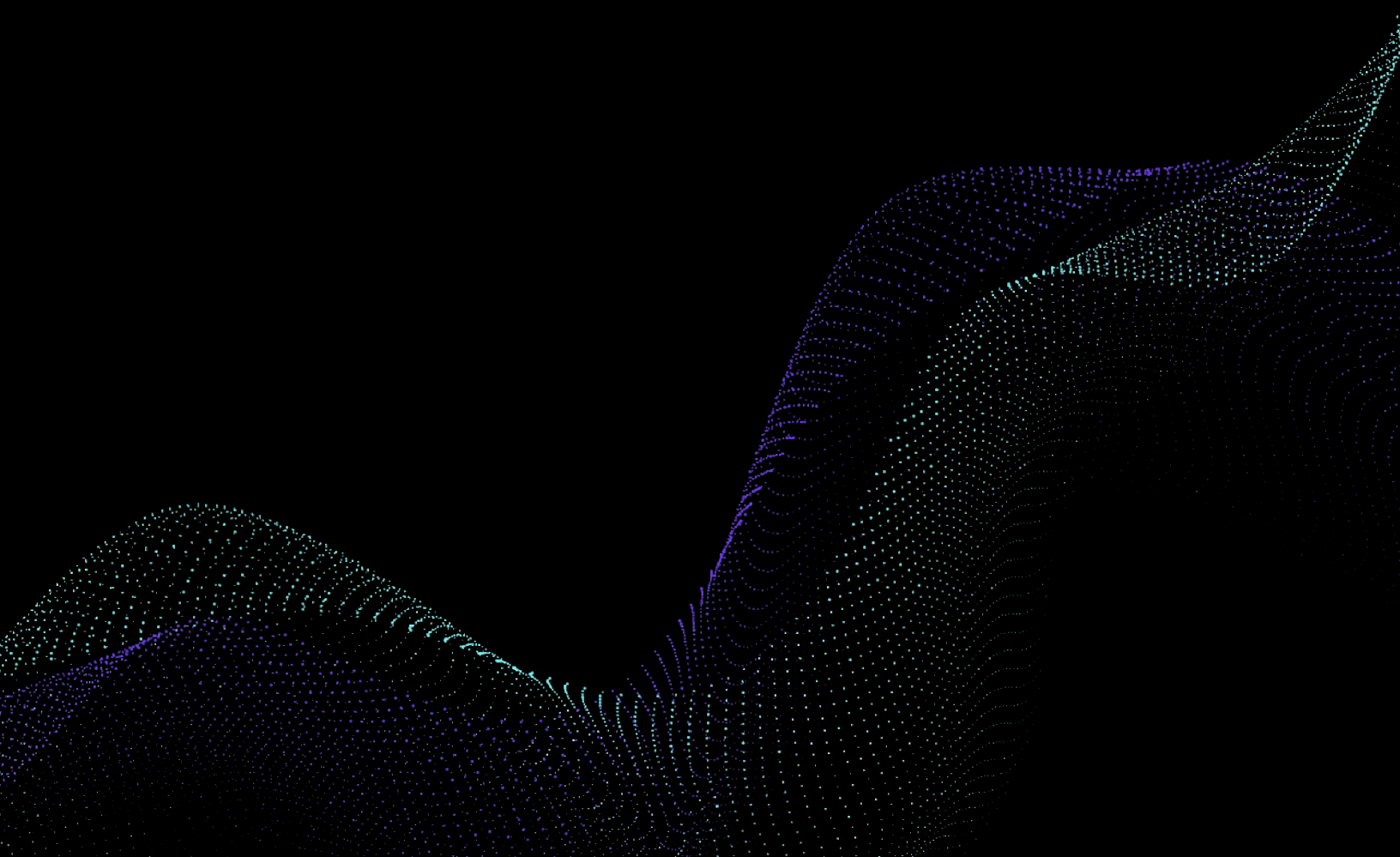
ALEF

The Next Technological Revolution: the Decentralization of the Internet, the Rise of Private Edge Networks, and the Programmable Future



We are on the brink of the next technological revolution. This revolution will be marked by the shift of communications and computing from a centralized cloud, to a localized edge. Centralized software workloads associated with network cores and cloud computing are being distributed in an intelligent manner, leading to a new breed of shared infrastructure, architectures, and applications. This shift, combined with the emergence of 5G, is fundamentally changing the way people and devices engage with the internet.

As access to the internet has expanded incrementally and systematically, application capabilities have grown exponentially which includes autonomous systems, Artificial Intelligence (AI) and the Internet of Things (IoT). This is the era of the Edge.

According to Gartner[1], the major drivers of Edge computing include security, real-time responsive applications, new and better user experiences, and smarter, safer systems. Experts estimate this emerging distributed 5G Edge economy will be worth $8 trillion by 2030[2].

At Alef, we are excited about this emerging economy and want to introduce you to it. This paper explores the following ideas: the decentralization of the internet, the introduction of private edge networks, and the programmable future.

[1] https://www.gartner.com/en/documents/3981952/top-10-strategic-technology-trends-for-2020-empowered-ed
[2] https://www.mobileworldlive.com/featured-content/home-banner/nokia-tips-5g-enterprise-boom-to-make-8timpact

The Decentralization of the Internet

There is a decentralization that is taking place within the inherent architecture of the internet.

Computing history is marked by an oscillation between the centralization of computing power and the decentralization of power. Mainframe computers with terminals gave way to personal computers. Our software migrated from programs on our local machines, to cloud based solutions. Edge technologies comprise the latest shift in computing power. We are going from hundreds of mobile networks to potentially millions of private networks. Storage and computing power are also being moved closer to the user or application with efforts being made in the micro and metro edge data center worlds.

Data is being produced at an ever-increasing rate thanks to advances in connectivity, software, and hardware. This means more devices are gathering more data, which could quickly overwhelm transport capabilities and produce more noise than signal. A distributed edge network can collect and process this data, and make real time decisions. Machine learning at the edge is enabling businesses to find the signal within the noise much more quickly.

Businesses are looking to run applications closer to the user and need the ability to guarantee security, high availability, and resiliency. The first step for businesses looking to leverage all the benefits of the edge is to set up a private edge network.

The Rise of Private Edge Networks

A private edge network is the start of your edge computing journey. Once you are connected, the possibilities are endless.

Private networks have existed since computers were first networked. Most people have likely set up a private network without knowing it! If you have plugged in a modem with a built in router, you've set up a private network. Alef makes setting up a private edge network as easy as possible.

What are some of the characteristics of Alef's Private Edge Platform?

- Easy to set up– purchasing your credentials, installing your network, and activating your eSIMs can be completed in a few easy steps.
- Connect to the Citizens Broadband Radio Service (CBRS)–a band of frequencies recently opened up for general use by the FCC. CBRS decouples 5G access from major cellular network providers, allowing for you to create your own private 5G network.
- Easily control which devices connect to your network and protect your data
- Low latency and high bandwidth

Best of all, you can make your network work for you by building edge-enabled and edge-enhanced applications.

The Programmable Future

As enterprises, communities, and individuals create their own private edge networks, we will see a rise of edge-enhanced and edge-native applications. Edge-enhanced applications are applications that see a performance improvement (or added functionality) with edge technology. Edge-native applications are applications that are only made possible because of the edge.

Regardless of what industry you are in, there is a possible edge application. Here are just some examples:

Programmable Edge - Developer Heaven! Sectors with the potential to be boosted by 5G Edge

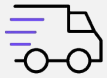
Smart Cities
- Traffic Management
- Public Transportation
- Smart Grids
- Asset Management
- Field Service

Manufacturing
- 3D printing
- Alt vision
- Robotics
- Edge Security

Healthcare
- Personalized homecare
- Tele-medicine
- Health records
- Privacy and Data Residency
- Community counseling services

Utilities
- Revenue models
- Digital field support
- Smart grids
- Asset management
- Sustainability

Retail & Advertising
- AI Targeting
- E-commerce
- Brand management
- Point of Sale
- HD Videos



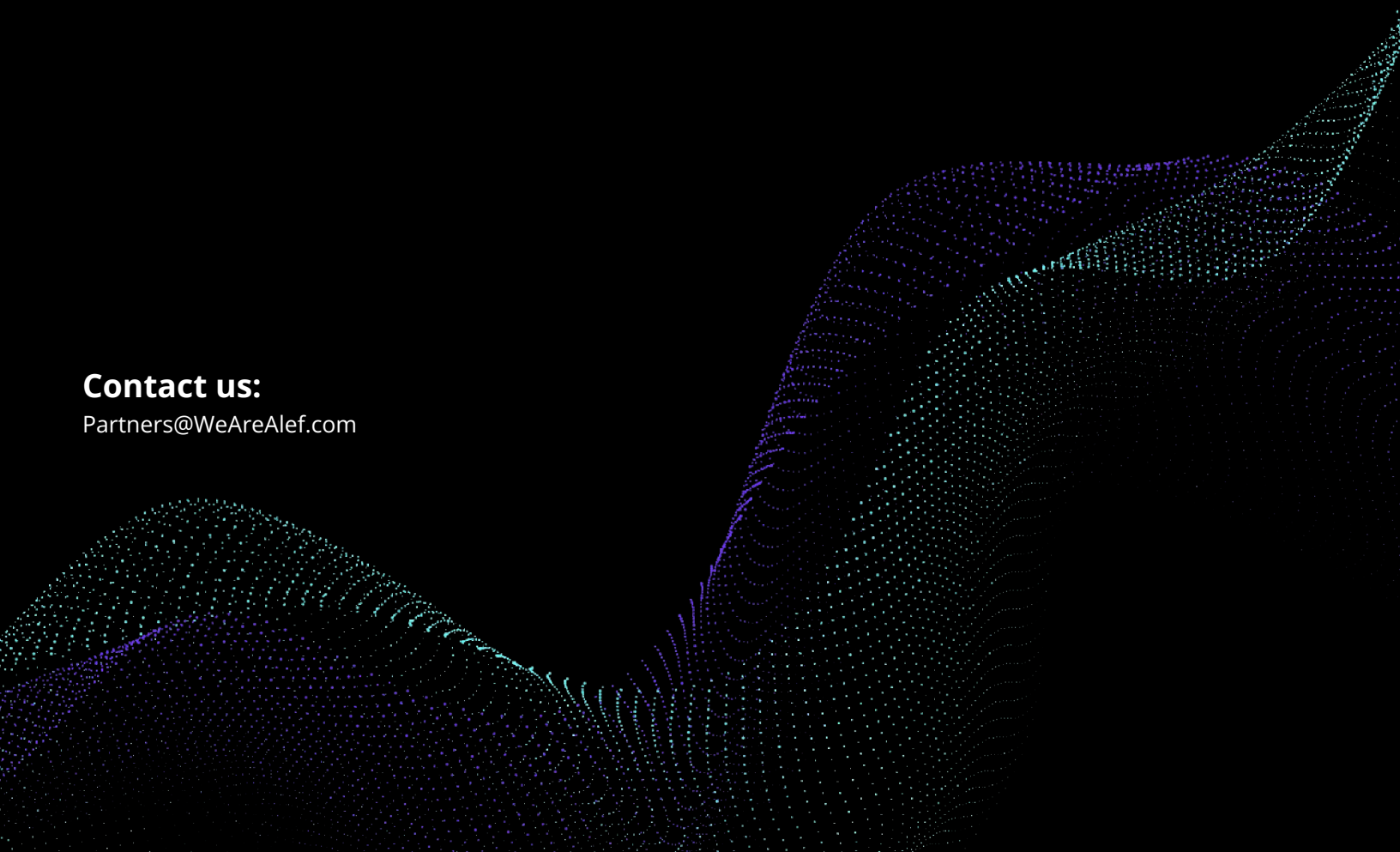
Transport
- Autonomous vehicles
- Electric vehicles
- Smart ambulance
- Connected traveler
- Freight Tracking and Routing

Enterprise use cases for Private Edge Platform:
- Private edge network
- Smart cities
- Autonomous systems
- Smart venues
- Smart Retail
- Industry 4.0

There is so much room for creativity and innovation in the edge application space. Alef is committed to providing the best developer tools for building edge applications, allowing developers to build and deploy to their networks seamlessly. It truly is a programmable future, and the launch of Alef's Private Edge Platform is a huge step in our effort to bring the edge to everyone.

Conclusion

Are you curious about what it would take to set up your own private edge network? Learn more here: www.wearealef.com or if you are ready to get started contact us at partners@wearealef.com



Contact us:

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