



**Emergent 5G and ubiquitous IoT are about to change the world. Here's why achieving a sustainable future means a distributed network. [Blog forthcoming 2022]**

*And you can help.*

With the emergence of ultra-fast 5G communications and progressively intelligent sensors, the entire technology space is at an inflection point, ready to transform an array of industries ranging from transportation to medicine, entertainment to e-commerce. The most prescient minds in technology want to be part of this technology paradigm shift, but there is one barrier to the transformation that no one has yet addressed: Today's legacy systems and dominant cloud providers do not lend themselves to the massive infrastructure buildout required for the technology transformation.

At Nesten, our team of experts has shared a vision to decentralize the burgeoning data economy and developed a solution to achieve the vision — and we need your help to implement it.

### **Why we need a decentralized infrastructure solution**

Even for giants like Amazon Web Services, it is not economically feasible to scale centralized data infrastructure at the level necessary for the most promising innovations to reach their true potential. New technologies like autonomous vehicles and smart cities require ultra-high transmission speeds and low latency — namely, millimeter wave 5G — in massively dense deployment environments. The transmissions in millimeter wave bands, above 20 GHz frequencies, face tremendous challenges for deployment as the signals are much more likely to be blocked by walls, buildings, and trees. To provide effective coverage with millimeter wave 5G, the industry needs a completely different approach to architecting and deploying the wireless network.

The team at Nesten is building a distributed network infrastructure coupled with a community ecosystem to support this vision: Imagine entire cities blanketed in ultra-fast wireless connections. The difference would go far beyond faster access to social media and internet browsing. For the first time, people would have access to transformative applications like metaverse and digital twins, which require responses in sub-millisecond timescales if they are to achieve an outstanding user experience without lagging issues. The practical applications will transform every aspect of our lives, but getting there will require an equally transformative approach to communications and data infrastructure.

And the journey requires more than just removing technical constraints: The centralized model for data infrastructure is broken at the business level, too. Massively dense deployments are required for effective operations, but the capital and operational expenditures to scale this for widespread 5G penetration are tremendous. They will only be more so for the next generation

wireless communications, called Terahertz 6G, which will require even denser deployments. To achieve full penetration of true 5G, and an infrastructure that will support 6G coverage and beyond, a decentralized network infrastructure built with support from all corners of the world is the only viable path.

### **Tokenomics at work to support the decentralized infrastructure**

Moving from 5G to 6G will require even higher frequencies and bandwidth, but with wall penetration being impossible at these frequencies, devices will have to face almost directly into antennae to receive signals.

Nesten is overcoming this barrier and bringing a 6G future to life with a comprehensive end-to-end distributed infrastructure encompassing three core areas: communications, storage, and computing. Achieving that means overcoming complex deployment challenges and addressing a variety of industry standards in market verticals. As a practical, effective means to extend the wireless coverage in the last-mile connectivity, a widespread network of easy-to-install wireless gateways with support for multiple protocols could help overcome those obstacles. Nesten is already manufacturing and has deployed these devices. Furthermore, to lower installation barriers, we're introducing a blockchain-based incentive system that will motivate communities to actively participate in our network's deployment, optimization, and operation.

Scalability is legacy providers' greatest problem... and Nesten's greatest strength. To ensure speedy adoption, Nesten will provide blockchain incentives based on measurable metrics for network optimization. Users will be able to automate this network monitoring and operation with smartphone apps and wearable devices, and when they hit key operational metrics, they will be rewarded with token incentives using Nesten's cryptocurrency, NIT.

With the rapid scaling enabled by NIT, Nesten's networks will be accessible to everyone, deployable for use cases from smart cities to remote medical care. We have even patented a secure traffic management system for autonomous vehicles that uses the blockchain network to offer unprecedented communication speeds at near and long range alike, while also providing far stronger security than solutions that don't leverage blockchain. Our system enables the most exciting innovations that are being discussed in the early 2020s, and it also opens the possibility for new tools that are yet unimagined.

### **Users have a desire—and a right—to be part of the revolution**

In a decentralized infrastructure and economic environment, everyone will benefit in one form or another, from having more personal access to smart cities and healthcare innovations, to new innovative applications brought forth by 5G and 6G. As has always been the case, everyone will have a stake in the well-being of the society they live in. But unlike the present day, they'll experience a sense of freedom from the economic and social environment that is unimaginable in the current balance sheet-centered system.

The dominant telecommunications operators in each country have long been operating with an oligopolistic structure, which has allowed them to exercise absolute pricing power on their captive consumers. It is understandable why some consumers may even fear the spread of 5G and 6G, given that their providers force them to pay more for each successive wireless

generation. The massive investment required for 5G and beyond will make this even worse, putting the basic utility of internet access out of reach for those less-privileged consumers who could most benefit from IoT innovations.

A distributed, tokenomics-based approach changes all that. For the first time, users will not be bystanders to the data economy's revolution, but participants on the front lines. They'll do more than enjoy the conveniences allowed by IoT, AI, 5G, and 6G: They'll actually fuel these transformations and reap the benefits along with the infrastructure providers.

We're giving users the tools to build this vision alongside us. Let's get to work.