

The Open Grid Vision Paper

www.opengridalliance.org

The Challenge

The internet is designed and operated as a communication vehicle. Today, it is between tedious and impossible to deploy applications providing next-generation experiences.

The challenge we face is the lack of functionality supporting demands of an immersive experience world, where timely interactions on planetary scale are required. Building on significant progress in automation and other technology advances, we must find ways to upgrade and evolve the internet to unlock the transformative potential of technologies directly affecting our planet and everyone living on it; in terms of culture, working, acting, thinking.

Our Mission

Our mission at the Open Grid Alliance (OGA) is to architect and implement solutions by constructing a comprehensive communications grid, facilitating a utility that federates constituencies and owners of multiple administrative and technological domains to improve quality of life. This does require commitment to innovation, collaboration, responsibility, and continuous improvement.

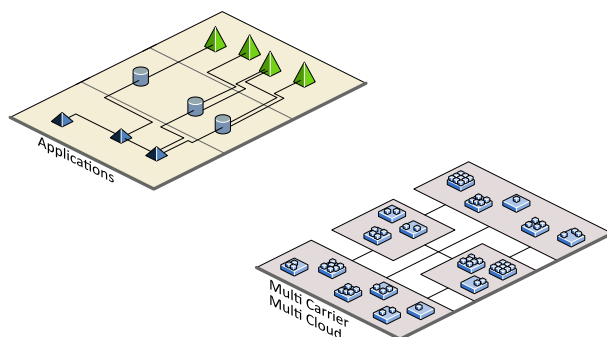
To achieve this mission, we must devise new approaches for planning, designing and operating systems with high degrees of localization, autonomy, and intelligence. We must harmonize and optimize across all of these vectors to build this utility, which we call the *Open Grid*.

Our Vision

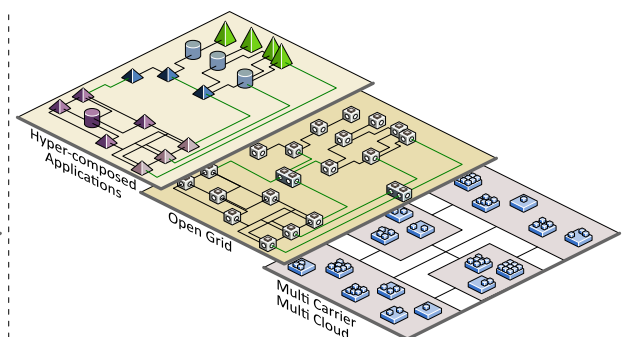
Our vision is to empower individuals and organizations around the world to achieve their full potential by providing innovative and personalized solutions that harness the power of Artificial Intelligence and other emerging technologies. As the world's most openly developed and widely distributed foundation for digital transformation, we strive to democratize access to advanced technologies and enable everyone to participate in the creation of a smarter, more connected, and more equitable world.

The Open Grid

The *Open Grid* will act as a living entity, with a circulatory system that stitches together digital resources owned and managed by many connectivity systems spread across many parts of the world, and with a nervous system facilitating collaboration between all of the "local brains" that operate these connectivity systems.



Today's gap between application and cloud



The Open Grid, bridging the gap

The *Open Grid* will function as a utility for hyper-composed applications, providing the *right type of resources*, in the *right amount*, at the *right place* and for the *right time*. And, the Open Grid will manage and optimize across these four dimensions, at all times.

As a system of systems, the Open Grid is naturally decentralized, localized, and federated. Processes in the grid run in parallel and are often circular, for example negative feedback loops. Localization provides the context in which the grid must operate as a secure and resilient system, dealing with fungible resources and protecting people's assets (including their data). Federation allows everyone to participate in the grid in their own right, maintaining their sovereignty while benefiting from available applications and services provided by others. Both localization and federation direct other functions, such as charging and billing.

The OGA's Approach

The Open Grid assesses, monetizes, and evolves various technologies including networking, web, compute, AI/ML and many more. It defines key principles for the *Open Grid*, identifies technologies that adhere to those principles, instantiates those technologies in physical environments, and demonstrates their efficacy. To accelerate time-to-market and innovate new public/private business models, the OGA also partners with cities and municipalities to create Innovation Zones which act as crystallization points. The organization also performs research, including the production of economic impact reports and addressable market models that members and municipalities can use to predict opportunities and outcomes.

The OGA guides development of reference architectures to facilitate co-creation across multiple sectors contributing to the various elements of the grid stack for collaborative go-to-market offerings. As the OGA proves out new technologies documenting how these technologies will impact cloud providers, developers, vendors, internet service providers (ISPs), communication service providers (CSPs), and end users.

Introduction and Motivation

At its inception in Summer 2021, the Open Grid Alliance sparked a groundswell of industry support with its *Open Grid Manifesto* (<https://bit.ly/Open-Grid-Manifesto>). By the end of the year, the organization had attracted over 30 founding member companies and became a 501(c)6 non-profit organization. By September 2022, the organization had formed its four key workstreams: the Grid Think Tank, Grid Innovation Zone, Grid Industry Development and Grid Market Development. Soon thereafter Las Vegas, Nevada was designated as the OGA's first Innovation Zone, which published the market analysis paper *Monetizing the Open Grid in Las Vegas* (<https://bit.ly/monetizing-the-grid>) and demonstrated a real-time video conferencing system over 5G CBRS using Open Grid technologies.

Call for Actions

The Open Grid can only come about through deep collaboration and open architectures. While many Open Grid technologies are being implemented today, it will be a decades-long journey of innovation that will touch all levels of the stack.

For hardware providers, the Open Grid provides close proximity distributed datacenter locations with last mile connectivity to reach the end customer. For service providers, the Open Grid enables your service to be pre-integrated into an end-to-end solution for the enterprise customer. For data center operators, being part of the Open Grid increases your ability to reach end customer sites and help the end customer finish their digital transformation by moving the last workloads offsite. For last mile service providers, being part of the Open Grid enhances your product offering and increases your revenue stream with pre-integrated solutions offered through the Open Grid. The OGA invites you to [join our efforts](#) to make this vision of evolving the Internet for a better future for everyone across the globe!