The Open Grid Manifesto

A global reimagining of the internet

www.opengridalliance.org

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We like to think of the internet as being everywhere, but it's not. Today's internet begins at the core and the farther you are from the core, the less internet you get.

Most of what we consume on the internet today originates in a handful of massive data centers located, often, where land and power have been cheap. The applications housed in these data centers rely first on public and private backbones, and then the last mile networks, to carry their logic and data to the fringes, to the edge, where most of us exist and where they can deliver value.

This is the internet we have today. It evolved from the core out, growing naturally like a tree, spawning new limbs as its trunk got thicker and its branches reached farther.

Today, all the innovation is happening at the edge. We are moving from an era of humans talking to machines at the core into an era of machines talking to machines at the edge. We need a next-generation internet, built from the edge in.

The internet we built is not the internet we need

Imagine a factory filled with sensors and robotics running 24/7. It's conceivable that this factory could generate data at a rate faster than can be shipped over the internet. A week's worth of data might require an entire month to transfer to a centralized data center where it can be ingested, processed, and analyzed at scale to deliver actionable insights back to the owner of the factory.

While it might take a full month to deliver the data to the core, it could only take a fraction of a second to instantiate the application at the edge—provided we build an Open Grid, a universal mechanism for culling resources, on demand, where they're needed. With the Open Grid in place, every workload can be placed in a preferred location, optimized for its expressed needs, where those needs can be attributes like latency, resilience, security, cost

Or, how about the stadium of the future where the venue owner has installed a variety of game-day digital enhancements? Rich, immersive stadium experiences can be deployed, but best of these require tremendous amounts of computing power and network bandwidth—although, only for the hours when fans are in the stadium. With the Open Grid in place, the stadium applications and services can request compute, storage, and network resources from the Open Grid, and specify SLAs for those resources, so everything is guaranteed to run precisely on the days and times, and in the places, for which they are needed—and only pay for what is consumed.

The bottom line: The internet must evolve, and the Open Grid is the future of the internet. Billions of devices generating petabytes of data are pulling the internet's center of gravity to the edge. Machine-to-machine communication, which measures latencies in milliseconds and microseconds, is creating demand for new network routes at lower cost and with fewer hops.

Interconnection and peering, which is today relegated to regional data centers and carrier hotels, will need to be everywhere.

The inevitable evolution

The Open Grid is the inevitable evolution of the internet. Our legacy internet with its massively scaled data centers and its core-centric network topologies will no longer provide for our needs; we must redesign our systems starting at the edge, augmenting today's internet with new architectures that enable the rapid deployment of workloads and services to the right locations, for the right reasons, ensuring appropriate levels of latency, security, and resilience—and delivered at the right price, preferably at global scale.

Like the power grid, from which it gathers its metaphorical inspiration, the Open Grid will be a software-defined system that stretches across the globe to support multi-cloud, hybrid cloud, near-prem and on-prem services via fungible resources that are employed, when and where they are needed, on demand, and with guarantees and SLAs.

The Open Grid combines all the necessary components to support the next generation of applications. It is the purposeful integration of hardware, software, networking, and infrastructure technologies to support the next generation of emerging applications.

The Open Grid Alliance

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

The Open Grid needs an organizing body that encourages collaboration and shares learnings. This organization must be vendor-neutral, as the Open Grid is too big, too complex, and too important for any single company to own. It must be delivered by an ecosystem of companies and organizations. It must define open interfaces that prescribe interoperability, but which also allow for commercial differentiation and proprietary implementations.

The Open Grid Alliance (OGA) seeks to be this organization. It will include leaders from multiple industries and disciplines, leveraging domain expertise that spans the entire stack, encompassing the physical infrastructure as well as the software-driven networking, virtualization, automation, and application layers.

The Open Grid Alliance will define the Open Grid principles and identify interoperable technologies that can be used to implement them. The organization will also serve as an educational resource and knowledge hub for future grid technologies and innovations. It will also define and document their impact on cloud, developers, technology providers, communication service providers (CSPs), internet service providers (ISPs), as well as on end users, enterprise customers, and mobile subscribers, among others. The OGA will promote deep collaboration

and open architectures that will enable the dynamic and geo-distribution of workloads, evolving the internet to service the billions of devices and applications coming online.

The Open Grid is the future of the internet. Join us on this journey.