



INTERNET: reboot

The bad news: the Internet is almost dead
The good news: another one is coming

A new Internet is coming, and you can be part of bringing it to the world.

BRIDGE is a public benefit corporation that is introducing a new generation of high-speed wireless connectivity and, along with it, a whole new immersive media experience. This new connected reality won't be brought to you by the cellular operators but instead by the crowd, fueled by the demand for new rich media connectivity experiences that are faster, more reliable with no buffering or throttling. And oh, by the way...this new reality will be free for end-users.

An Internet on Life Support

The Internet as we currently know it is in really bad shape. With the sad state of security and the bogging down of overloaded networks, the superhighway to the digital promised land – the Internet – is coming to a screeching halt.

Massive security breaches are bizarrely common now. We have learned that the recently revealed Equifax personal data breach, that we were originally told affected 143 million Americans, has actually affected all Americans and more people in Canada and the UK. [1] How could security breaches like this be allowed to happen? How can they go unchecked?

It's no wonder. The Department of Homeland Security's US-CERT released a warning on October

16th that all devices using WiFi are prone to security attack, saying: "...it's likely attackers will be able to eavesdrop on nearby Wi-Fi traffic as it passes between computers and access points." [2]

And each day our smart phones are getting slower and slower. When we try to play even a short video, our phones lock up due to overloaded cellular networks. To try to cope, the cellular operators are throttling our usage and putting us on monthly data limits. They try to sell us 'unlimited' connectivity, but we all know their trick. After we reach our usage limit, they just drop us to a frustratingly slow speed. We can pay for more data, but what's the point?

But there is hope on the near horizon. New high-speed connectivity is coming, and it's not anything like your father's Internet – get ready!

A New Day, A New Internet

Way beyond smart phones, BRIDGE is moving us on to a completely new connectivity experience. Immersive communications like 3D media are going to bring life-like conversations into reality that most of us just cannot even fully imagine yet.

Immersive media like virtual and augmented reality are already here in limited forms. You can play virtual reality games on a console device with a headset. But when it comes to using this immersive media over networks, it's a no-go. Today's immersive media creates a level of demand that cannot be sustained by current networks.

In its pilot systems, BRIDGE is introducing a completely new connectivity direction that provides much higher connectivity speeds, greater security, and more reliable connections. These capabilities are exactly what is needed to support rich media like Remote Reality. This will allow us to have, for the first time, truly natural human communications experiences over a whole new class of devices that can completely replace our smartphones.

Under the mantra of **One Connected World**, BRIDGE passionately believes that this next generation of connectivity should be put into the hands of regular people, in what BRIDGE calls the **open-source connectivity movement**.

This new open-connectivity movement converges, supports and further evolves the incredible transformation that has been underway with the open-source blockchain movement. [3] Open-source

connectivity further improves upon the blockchain movement by providing high-speed transactions which can slash blockchain processing time. It also provides important new degrees of transaction security. These attributes are essential to keeping the blockchain movement growing and evolving.

Immersive communications like 3D media are going to bring life-like conversations into reality that most of us just cannot even fully imagine yet.

Who is BRIDGE?

BRIDGE is a public benefit corporation meant to champion and inspire open-source connectivity. BRIDGE aims to break down the barriers to a new future of connectivity that the world deserves.

To this end, Bridge's purpose is to:

- **Close the digital divide**
- **Deliver connected freedom**
- **Rein in a new experiential era**

Closing the digital divide - 4 billion people in the world have no high-speed connectivity. Getting this disconnected half of the world up to speed is vitally important. Not only does open-source connectivity keep countries from falling competitively behind, but it also fosters growth of the connected industry and

education. Open-source connectivity can close the global digital divide.

Delivering connected freedom – BRIDGE is determined to get everyone involved in deploying open-source connectivity. All of the employees from all the cellular operators in the world together cannot come close to how fast regular people – the world – can deploy open-source connectivity.

The crowd is a much larger, more powerful and more efficient path to global deployment for this new connectivity. The crowd can power and control the most influential human network ever created and not be beholden to a few powerful operators and their narrowly-focused business exploits.

Reining in a new experiential era – Today we suffer with really poor communications experiences like low-quality cellular phone calls and interrupted video streaming. Open-source connectivity can carry us into a whole new world of Remote Reality communications with limitless potential for new immersive rich-media applications.

Culture - BRIDGE'S mission is not focused on the business sector, the technology sector, or the existing oligarch service providers. BRIDGE's sole mission is to make sure the next Internet is one built for the people, by the people and of the people – to put the world in charge of connecting itself.

BRIDGE's mission is more important than it's bottom line. We stand by this, and we are asking the crowd to stand with us.

The crowd is a much larger, more powerful and more efficient path to global deployment for this new connectivity.

The Open-Source Connectivity Movement

What is this new connectivity movement? The first step in appreciating it is to understand that BRIDGE open-source connectivity follows the principles of the *Open Source Way* [4]:

- **Open Exchange** - We can learn more from each other when information is open.
- **Participation** – Together, we can solve problems that one person cannot on their own.
- **Rapid Prototyping** – The freedom to experiment and look at problems in new ways.
- **Meritocracy** – The best ideas win.
- **Community** - Bring together diverse ideas to multiply efforts.

Under the guiding principles of the Open Source Way, we believe that the community, aka “the crowd,” will best guide the development and evolution of open-source connectivity.

BRIDGE is engaging the crowd to decide what, where and when open-source connectivity will be

built and deployed. BRIDGE will be launching key crowd initiatives that include:

- **100 Smartest Communities Contest**
- **The Creators Contest**
- **\$1 Million Developers Contest**
- **World Connectivity Tour**

With these initiatives, BRIDGE will be educating, incubating new applications, and deploying live pilot systems. These far-reaching initiatives are the spark and the fuel that can get the open-source connectivity movement spreading rapidly.

How Does Open-Source Connectivity Work?

BRIDGE's unique approach to high-speed connectivity comes from breakthroughs in the 'physical-layer' of communications systems. This new technology enables BRIDGE to develop micro-sized equipment called 'switches' that can be installed on telephone poles, light poles and on the sides of buildings to provide wireless gigabit-speed connections to everyone.

As a layperson, you can start to understand how BRIDGE connectivity works by thinking of it as something like WiFi, but only much more powerful. A BRIDGE wireless switch is about the same size as a WiFi router but, unlike WiFi, this new switch delivers some amazing new capability.

On a WiFi router, the total speed or 'bandwidth' is shared among however many users are in range of the signal. As the number of users changes, the speed for any single user changes wildly. It gets

even more complicated since the quality of signal changes for each user based on the distance they are from the router at any given moment.

Real-world tests show, and our own experience with WiFi at Starbucks tells us, that WiFi speeds don't reach what the router manufacturers tout as the 'peak' operating speeds. It turns out that connection speeds drop off a cliff as you move just thirty feet away from a WiFi router.

The situation is very different with BRIDGE equipment. With BRIDGE switches, each end-user has their own dedicated connection, and so the end-user's speed never changes. You could say that we have all been on a shared party-line up until now. BRIDGE is out to give everyone their own personal and private high-speed connection.

Beyond the benefits of greater connectivity speeds, BRIDGE is also introducing breakthroughs in coverage, system capacity, connection reliability and direly important network security.

Remote Reality

Most of us by now have heard about virtual reality and augmented reality. *Remote Reality* is BRIDGE's term for the marriage of these emerging immersive media types with open-source connectivity. Remote Reality marks the start of a new era of natural and human communications applications that can completely replace our smart phones.

BRIDGE is incubating Remote Reality applications in its **Smartest Communities Contest** by holding a

variety of content and applications contests. The winners of these contests will enjoy the privileges of unveiling and showcasing their winning creations on the first live open-source connectivity networks in the first 100 winning communities.

Imagine this: instead of seeing a flat image of a product on Amazon like we are accustomed to, Amazon could take a customer on a life-like 3D tour of that same product just as if it was there right in front of the customer! The impact of BRIDGE's Remote Reality crusade goes deep into not only e-commerce, but also entertainment (think Remote Reality concerts), automotive – everything.

The smartphone era has been big for sure. The open-source connectivity movement with Remote Reality can be even bigger, and for exactly that reason: because it's a whole new movement, not just a device or service. And most exciting, the growth with the movement can include the 4 billion others in the world who have been left behind.

To get to the level of a high-quality Remote Reality experience, faster wireless connectivity speeds are required, and they just don't exist today. In fact, cellular and WiFi companies are not even projecting wide availability of the kind of connectivity speeds that are needed to support Remote Reality.

This has not stopped the cellular operators from getting into full marketing swing. Many cellular operators are already hyping that new high-speeds are on the way with their "5G" technology. In July, Gartner added 5G to their Hype Cycle tracker,

already placing it half-way to "peak of inflated expectations" status. [5]

The smartphone era has been big for sure.

The open-source connectivity movement with Remote Reality can be even bigger.

The cellular operators are even staging performance demonstrations to point to their 5G progress. But communications engineers have observed, and even executives of the big cellular operators have since admitted publicly, that those demonstrations have been in carefully controlled environments. These operator demonstrations do not represent the kind of performance that we can expect from 5G anytime soon.

In his new book, *The 5G Myth*, Professor William Webb at Cambridge University argues that "5G is misaligned with the needs and wants of both people and society as a whole." He continues saying that "There is so much publicity and hype about 5G it has become something of an ingrained belief. The 5G stakeholders all benefit from the interest, funding and potential that 5G promises. The emperor has no clothes, but few are willing to say this out loud." [6]

These observations loom large over the cellular operators' exaggerated marketing speak: it took the cellular industry more than twenty years to even partially deliver on the promises of the connectivity we have right now on our cell phones.

Ok, So How Much?

How much is BRIDGE's new Remote Reality connectivity going to cost? The answer is an unusual kind of sticker shock.

All of the new capabilities that BRIDGE connectivity brings can be free for end-users – **'free' as in zero or no cost.**

How is this possible when we have all been paying telephone companies, cable companies and cellular operators monthly fees for decades? It's a matter of how open-source connectivity shifts the economics of connectivity.

To understand this, we need to first compare BRIDGE high-speed wireless connectivity to fiber, which is not a wireless technology, but is the only other high-speed connectivity alternative. Over the last decade, Google, Verizon, Comcast and other operators around the world have attempted to deliver fiber connectivity directly to homes. After finally admitting failure, these operators learned the hard way that fiber is clearly too expensive. [7]

From the cost benefits of its high-efficiency wireless deployment, BRIDGE high-speed connectivity delivers 60%-80% lower capital and operational expenses as compared to fiber. This dramatic cost benefit manifests itself in new, but yet familiar, ways

for Internet commerce.

To relate, first look at how Internet commerce already works. Amazon, for example, shares a small percentage of its revenues with independent website operators who advertise and pass customers who 'click through' to Amazon's website. Similarly, Google's main revenues come from the little advertisements it sells on its search engine and on its streaming YouTube video service. One can make a surprising amount of money from the advertising revenue Google shares with them for their viral cat video.

Amazon, Google and everyone else on the Internet can grow their businesses by giving their customers a new Remote Reality experience. To get it, they will be willing to share some of these new revenues with the open-source connectivity operators of the world. This is exactly what they already do with advertising content partners.

This represents an economic shift to monetizing content and traffic instead of monthly connectivity subscriptions. From this shift emerges a whole new field of independent operators who now have a direct vested interest in giving us all the fastest, most engaging and most reliable connectivity we can get – but now for free!

The World's Smartest Communities

The whole point is to get the world into a position of transforming global connectivity very rapidly and to show the world how it will do this itself.



To accomplish this, BRIDGE will soon be launching its **Smartest Communities Contest**. BRIDGE is inviting over 30,000 local communities to join in a nationwide competition to determine who will be the first 100 communities with BRIDGE high-speed connectivity and Remote Reality.

These first 100 communities will be first to use open-source connectivity publicly, understand how it works, and be the first to learn how to self-deploy switches.

The implications for the winning communities are huge. Of course, bragging rights come with being one of the first communities with open-source connectivity. And there is the economic impact for communities who are first.

As all eyes watch these first communities come online, they will no doubt be receiving some special attention. In fact, it is these communities BRIDGE intends to convert into the leaders that will be sharing their first deployment experiences and lessons. This is what will make these first 100 communities the world's smartest communities.

In subsequent efforts, this same cycle of community deployment competition can be repeated in other regions of the world. BRIDGE will empower regional leaders that best understand local deployment environments to organize their own competitions. ■

- [1] **Equifax Security Breach Is A Complete Disaster... And Will Almost Certainly Get Worse**
TechDirt September 8, 2017 [\[LINK\]](#)
- [2] **Wi-Fi Protected Access (WPA) handshake traffic can be manipulated**
U.S. Department of Homeland Security CERT Advisory, October 16, 2017 [\[LINK\]](#)
- [3] **The Truth About Blockchain**
Harvard Business Review, January-February 2017 Issue [\[LINK\]](#)
- [4] **The Open Source Way**
Opensourceway.org website [\[LINK\]](#)
- [5] **Gartner's Hype Cycle for Emerging Technologies, 2017 Adds 5G, Edge Computing For First Time**
Software Strategies Blog, September 3, 2017 [\[LINK\]](#)
- [6] **Why the vision for 5G is flawed**
IT Portal, December 1, 2016 [\[LINK\]](#)
- [7] **Larry Page snuffs out 'too expensive' Google Fiber project**
The Register, August 25, 2016 [\[LINK\]](#)



oneconnectedworld.org

© 2017 BRIDGE – One Connected World

All Rights Reserved

Information contained in this document is the ownership of BRIDGE and any form of reproduction, dissemination, copying, disclosure, modification, distribution and or publication of this material is strictly prohibited without written permission.