



<http://www.eweek.com/innovation/ethernet-invention-revealed-the-origins-of-innovation/>

## Ethernet Invention Revealed the Origins of Innovation

Posted 2013-05-26



**NEWS ANALYSIS: Ethernet's invention 40 years ago showed that innovation can happen when smart people are given time to think and to work together.**

PALO ALTO, Calif.—There in front of me were the first boxy Ethernet transceivers that Dave Boggs built by hand 40 years ago when he and Bob Metcalfe invented Ethernet.

One of them was attached to a length of RG-8 coaxial cable using a vampire tap, a type of connector that pierced the insulation on the side of the cable. This was [the original Ethernet](#), displayed in front of an enlarged drawing of Bob Metcalfe's original drawing of this ground-breaking innovation.

But there in a small room with many other objects invented at the [Palo Alto Research Center](#) was what many of the attendees at the [Ethernet Innovation Summit](#) referred to as a shrine to Ethernet, perhaps one of the most significant advances in communications in history.

In the same room were the Alto computer, which had the first mouse, the first graphical display and the first GUI. From PARC came inventions as diverse as the laser printer and a water-filtration system with no moving parts.

But earlier in the day I found the real insight into innovation when I enjoyed lunch and a long conversation with Radia Perlman, who made internetworking possible when she invented Spanning Tree, and later in a long conversation with Metcalfe and Boggs that ranged from ham radio to the future of networking. Finally Glenn Ricart, founder and CTO of [US Ignite](#), sat down at my table to talk about how his organization fosters innovation.

Even though our discussions were wide-ranging, they always circled around the atmosphere of innovation. While talking about what each inventor did and what they expected to see happen, I also learned a little about what it takes to allow innovation to happen. What I found was remarkable.

Innovation, despite what you hear about PARC or the Massachusetts Institute of Technology or other centers for innovation, doesn't require a center. What it requires is time and support and the pressure to make something happen. But like the pressure that ultimately creates a diamond, it doesn't need to be specific; it just needs to be there.

Many, perhaps most of the inventors and innovators I've spoken with didn't necessarily set out to invent the device they are known for. Dave Boggs, for example, was at PARC for an unrelated

project when Bob Metcalfe found him and asked him to help build the Ethernet transceiver when he had a chance. Boggs, working from notes, an out-of-date schematic and a set of parameters, proceeded [to help invent Ethernet](#) while also working on the project he was at PARC to accomplish.