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Community input will drive new era of innovation in open networks

Last week's Open Networking Summit began with an eponymous appeal -- an opening day panel challenged the networking industry to become more open. The future of networking, panelists argued, is open systems, open source and open communities.

"Open source and open communities will play a big role in SDN and networking in general," said Guru Parulkar, chairman of the Open Networking Summit and executive director of the Open Networking Research Center at Stanford University, and who moderated the panel, *How Open Will Shape the Future of Networking*.

In the few years since the emergence of SDN, a constellation of consortiums and foundations have formed to push the networking industry toward a more community-oriented, open model.

The [Open Networking Foundation](#) (ONF) launched to develop and standardize the OpenFlow protocol. [Facebook's Open Compute Project](#) started an initiative to create open hardware designs for bare-metal data center switches. Most of the world's leading IT vendors and a plethora of SDN startups joined with the Linux Foundation to launch the [OpenDaylight Project](#), which is developing a modular, open source SDN software stack.

Networking needs open source input

Community is a prevailing characteristic of all these initiatives. To some extent, each organization brings together developers and engineers from multiple vendors and other organizations to build standards, software and hardware.

"Every open source company, every open company, every software company, should have a community," said panelist [Jono Bacon, Ubuntu Community Manager for Canonical](#). "Ten thousand developers from 1,000 companies contribute to Linux. The value we get is not just monetary, but the value of people working together."

Each day developers add 10,000 lines of code to Linux and subtract more than 5,000 lines of outdated code, said panelist [Jim Zemlin, executive director of the Linux Foundation](#). Countless companies rely on the scale of that Linux community for a solid product foundation. Rather than building a software kernel from scratch for every new product, a company can draw on Linux. In a sense, those thousands of Linux contributors are supporting every startup that builds upon the Linux kernel. No one can compete with that.

Networking vendors will find themselves in the same situation soon, panelists said. With closed systems, an IT organization is "only getting the brain power of a specific company, rather than the 10,000 developers [contributing to an open source community]," said panelist [Najam Ahmad, director of technical operations at Facebook](#). "If you try to control what you have and just incrementally grow, then the pace of innovation is really slow. It's about distributing what work needs to get done in different ways and then creating a new value proposition [on top of that.]"

Networking has always been open to some extent, according to Andre Kindness, principal analyst at

Cambridge, Mass.-based Forrester Research Inc. Open standards allow switches and routers from different vendors to communicate. Also, most router and switch software is built on top of a Linux kernel, he added.

Open networks push incumbent vendors out of comfort zone

Still, there is a difference between speaking the same protocol and sharing a technology foundation on top of which vendors can accelerate innovation and discover new ways to differentiate.

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"Open source intrinsically gets people out of their comfort zone," Bacon said. "When people are in a comfort zone, you get suboptimal content."

Incumbent networking vendors may scoff at the notion of becoming more open, but it has already started to happen. Dell became the first major OEM switching vendor to disaggregate hardware from its software by allowing customers to run [third-party operating systems on its bare-metal switches](#). These are not commodity switches from Dell's PowerConnect days, but the big-iron boxes from its Force10 Networks acquisition. Dell will initially support a [Linux-based network operating system from new partner Cumulus Networks](#) on those boxes, and the company has hinted that it will support other operating systems in the future. By embracing bare metal, Dell also embraced open source and open communities, giving customers access to innovation from not just Cumulus, but from those thousands of Linux contributors, as well.

Open network consortiums must remain transparent

While more and more members of the networking industry appear to be embracing open source and open communities, champions of these causes will have to remain vigilant. When [OpenDaylight first launched](#), skeptics viewed the project as a sock puppet for Cisco and some other founding companies. A year later, the project has drawn much broader community interest, thanks in part to a [commitment to an open, merit-based development process](#). But the project will have to continue demonstrating its commitment to openness, since [critics will always remain skeptical](#).

"There should be a transparent development process" for open source projects, Zemlin said. People "want to see the code being made. And it should be based on merit. There should be a well-balanced governance model. It should be available under an open source license and then all of the community should be building on top of that. When you have those core ingredients, it really works."

Time will tell if all the open communities and consortiums emerging in the networking space will follow those words of advice. The ONF, for instance, remains a relatively closed community of members who pay \$30,000 annually. The ONF does offer free membership to select academics and recently created a \$1,000 membership

category for [startups launched in the last two years](#), but the development of OpenFlow and other work by ONF remains closed to the public. Once a project is done, the ONF releases its code and other work to the networking community, but [many engineers and developers](#) are frustrated that they can't see the code being made.

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