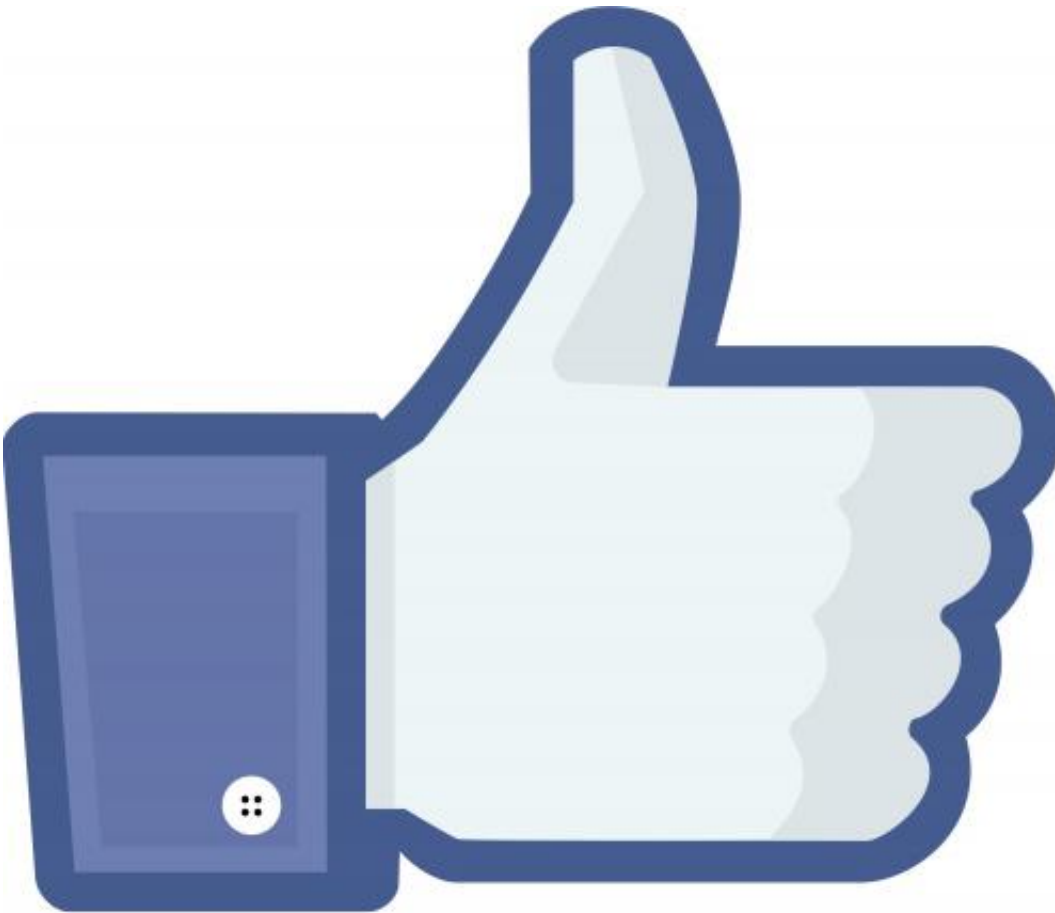


# Facebook engineer tells why he gives Open/R platform huge likes

May 12 2016, by Nancy Owano

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Facebook is talking about an extensible distributed network application platform, and the benefits attached to such a platform.

The Facebook team who are engineering the concept are making news with their interesting take on a platform for networking, according to reports this week.

Petr Lapukhov, Facebook network engineer, let the world know, through his posting, about the new modular [routing](#) platform, Open/R.

Simon Sharwood in *The Register* was one of a number of tech watchers commenting on Facebook's routing platform.

So what is Open/R? It is described as an extensible distributed network application platform. Russell Brandom in *The Verge* delivered an exceptionally clear take on Open/R. "The platform serves as a foundation for all the software running on Terragraph's various hardware units, and gives [developers](#) crucial flexibility in changing that software on the fly. Open/R can't solve Terragraph's complex routing problems by itself, but it offers a framework for testing out new routing programs faster and more effectively."

Open/R had its beginnings as routing software for Terragraph. It was designed as a shortest-path routing system to power the Terragraph network. The latter is a multi-node wireless network designed for high-speed Internet connectivity in dense urban areas, via short-hop transmission between small nodes.

Dave Gershgorn of *Popular Science* talked about Terragraph:

"A few weeks ago Facebook revealed its vision for the future of connected cities: a lattice of millimeter [wave](#) transmitters, working together to blanket dense urban populations with high speed internet. The project is called Terragraph, and it's a part of the company's larger ambition to connect the world by open sourcing technologies—which in turn creates more users for itself."

Open/R has evolved. It now allows Facebook to rapidly prototype and deploy new applications in the network.

As Sharwood remarked, "the more it played with the code, the more it became apparent it was fit for general purpose [networking](#)."

Specifically, Lapukhov said Facebook got interested in the idea of building their own routing [system](#) while trying to solve "fast-recovery" challenges for the Terragraph network.

"Looking at existing open source projects, we found they were hard to extend quickly and in a supportable fashion. Virtually all of them were written in C for performance reasons and lacked higher-level abstractions and good testing frameworks. Given this, we decided to build our own system. We kept it simple by reusing as much [open source](#) code as possible."

A summary of key reason Facebook is marching along with Open/R:

1 - Open/R software enables rapid prototyping and deployment of new applications to the network more frequently than the industry's standard development process, often lengthy because of code built independently by multiple vendors and slowly deployed to customer networks.

2-With Open/R, Facebook's network is in their full control. They don't need to support every known legacy feature.

3- Speed does not in this instance pose a threat to reliability. Lapukhov said "we work on rapid failure detection and mitigation." So far they have been able to scale to networks with multiple thousands of nodes, he added, while maintaining stable system behavior.

"Using both centralized and distributed control throughout different

domains in our network, often in a hybrid fashion, ultimately helps make the [network](#) more reliable and easier to manage," he stated.

**More information:** [code.facebook.com/posts/114211...ar-routing-platform/](https://code.facebook.com/posts/114211...ar-routing-platform/)

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