

THE ORIGIN OF METRO ETHERNET

NanoSpace and Yipes

In 1998 Frank Robles proposed running business communications over city fiber with Ethernet equipment. That idea became the metro Ethernet carrier model, and a national carrier was built on it.

1998	36,000	600+	\$291M
Metro Ethernet carrier model originated	Miles of metro fiber Ethernet	Points of presence in the top 20 US metros	Raised, including a \$200 million round in 2001

THE IDEA

Frank co-founded NanoSpace in Palo Alto in 1995 and led it as CEO for five years, through its renaming as Yipes Communications. It began self-funded, carried by consulting work, as a regional Internet service provider with fourteen Bay Area points of presence, and ran for years before it sold a single fiber circuit, with brand-name customers including Amazon and Google.

Then Frank learned that the City of Palo Alto had installed excess fiber. His proposal was to deliver metro communications services over that fiber using Ethernet equipment, the same technology businesses already ran inside their own offices.

NanoSpace licensed 28 route-miles of dark fiber from the City of Palo Alto. Within the year its first business customers were live on Ethernet over fiber.

WHAT IT BECAME

- **A national carrier.** Over 36,000 miles of metro fiber Ethernet across the top 20 US metro areas, over 600 points of presence and 165 data centers.
- **A company built to his plan.** Frank hired about 200 employees and contractors to his own deployment plan and financial model. The company reached roughly 384 people and \$50 million in revenue.
- **Fiber other people had already paid for.** He negotiated agreements with metro utility companies to use fiber they had already deployed.
- **A move to San Francisco** and the new name, Yipes Communications, in February 2000.
- **Interop 2000:** Most Innovative CLEC.

CAPITAL, RUN LIKE A TREASURY

The company raised \$291 million, including a \$200 million round in early 2001 that was among the largest raised by any single company that year. Frank acted as treasurer and CFO. After the major funding he ran all operations and finance until a CFO joined shortly before he left in 2001.

He managed the invested funds himself and built an investment strategy that returned 8.5 to 10.5 percent on reserves. When he left he was managing over \$165 million. A carrier burns cash on construction long before revenue arrives, and the reserves are what keep the build going when a round takes longer than planned.

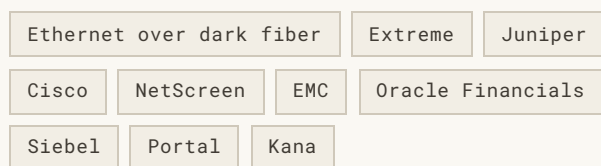
WHY IT MATTERS TO A BUYER NOW

Frank has designed a network, a financial model and a hiring plan for the same company at the same time, and then run all three as one company at national scale.

HOW THE NETWORK WAS BUILT

Ethernet over metro fiber, starting on dark fiber licensed from a city. Frank chose the network equipment and put in the back-office systems a carrier needs to run at scale: financials, customer management, billing and customer service.

He led the company's migrations to Oracle Financials, Siebel, Portal and Kana, and the selection of Extreme, Juniper, Cisco, NetScreen and EMC for the network. Titles held along the way: CEO, VP Corporate Development, VP Network Operations, President, and board secretary of all subsidiaries.



MAKING THE CATEGORY

A new kind of carrier needs a market that understands what it is buying. Frank helped establish and sponsor the Metro Ethernet Forum, the first public standards body for metro Ethernet.

He promoted the model at conferences across the United States and Japan, including keynotes in Tokyo and Oita in February 1999. Standards gave customers and equipment makers a common definition to buy and build against, which is what turns one company's idea into an industry.

WHAT HAPPENED AFTER

Frank left in 2001. Yipes was later acquired by Reliance Communications for \$300 million, in July 2007, six years after his departure. Beyond the operating roles, he served as director and secretary of NanoSpace, Yipes and seven subsidiaries.

WHAT A BUYER GETS FROM THIS TODAY

- **Network and data center architecture** from someone who has built at metro and national scale, and who knows which design decisions get expensive five years later.
- **Carrier-grade operations.** Network operations, financials, customer management and billing built to run as one business rather than as separate projects.
- **Fundraising readiness.** A financial model and deployment plan that stood up to \$291 million of investor diligence, and a treasury discipline for the money once it arrives.
- **Infrastructure partnerships.** Experience negotiating access to assets a city or utility already owns, instead of building from scratch.

WHAT WE CAN START ON

Network and data center architecture for a build or an expansion. A carrier-grade operations review of a network you already run. Or fundraising readiness: the deployment plan, the financial model and the answers an investor will ask for.

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