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## **-Google Broadband: Is There an Enterprise Angle?**

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Topeka, Kansas, wanted to rename itself *Sergeyville* but opted for *Google*, Kansas instead. Google's early 2010 announcement about a high-speed Internet service surprised some Google watchers. Telecommunications companies pointed to TiSP, (<http://www.google.com/tisp/press.html>) a 2007 test of free in-home wireless broadband service, as a harbinger of free, high-speed service for cities.

Google, despite its mounting legal woes, has not lost its knack for surprising, disruptive action. The Google announcement kick started some city managers into action. Will Topeka become a guinea pig? Greensboro, North Carolina, Grand Rapids, Michigan, and Tallahassee, Florida, want Google to pick them as well.

Many questions must be answered about this brilliant marketing play. Google, continuing its multi-pronged effort to force telecommunications companies to move or get out of the way, sees gigabit speed connectivity as necessary for more sophisticated online services. For consumers, the chief advantage of a fast connection is rich media, including digital video. For Google, high-speed connectivity lubricates Google's bandwidth-intensive applications. These range from geospatial to medical information systems to interactive applications like online games.

Google has the cash, the technical know how, and the desire to put pressure on television, cable companies, and any other company that it perceives as blocking its progress. In the present economic environment, targets of Google pressure will have to respond. A public relations battle is beginning and the lawyers are buttoning their vests.

But is the high-speed play relevant to Google's enterprise business? The short answer is, "Maybe." With media coverage of Topeka becoming Google, Kansas, in high gear, Google has some other technology that could be used to disrupt high-speed Internet services in organizations of almost any size.

Google has its own home-grown telecommunications technology. From an early quality of service invention to the raft of Google content delivery patent documents, Google has some impressive capabilities in its labs or idling in the firm's data centers. In November 2009, Google said it would support the idea of the high-speed wireless technology, WiMax. But Google has at least one interesting investment that might provide a glimpse of how Google will penetrate the enterprise with high-speed connectivity.

Have you heard about Meraki, a start-up company founded in 2007 and based in San Francisco? Probably not. Google does not make it easy to locate information about some of its more interesting investments.

The firm has been funded by Sequoia Capital, DAG Ventures, and Google. The firm's technology enables low-cost, high-speed networking systems to organizations of any size. You can get more information about Meraki at <http://meraki.com/solutions/industries/industrial/>

Meraki's unique cloud-hosted controller architecture provides centralized management and security through an intuitive Web interface. The approach eliminates the costs associated with traditional network management methods in use at most cable companies and broadband vendors. An organization needs some network devices that cost about one-third what a more traditional high-speed wireless device from Cisco or another major network vendor charges. The small boxes connect to the organization's network. Then the Meraki magic kicks in.

An organization with several locations can manage the high-speed wireless networks from a single browser window. The Meraki technology eliminates the need for individual configuration, provisioning, and administration of wireless networks. This reduces costs by shifting the administration of different, geographically-distributed networks to the cloud. Meraki has focused on improving the efficiency of high-speed network management. Reports and security can be administered by one person ensuring more consistency, better uptime, and quicker response to problems at different locations.

Let me give you an example of how a small company with three locations can benefit from the Meraki approach to high-speed, organization-wide wireless. Let's assume that you operate a business with a corporate headquarters in a mid-sized city, one warehouse and distribution center, and a smaller sales and support office in suburban office park.

You want employees to have wireless access in each facility. In the distribution center, the orders are managed with a third-party bar code scanners that connect wirelessly to the company's inventory management system. In other offices, wireless connectivity has replaced more traditional hard wire cabling. Employees have access to email and Web browsing to access Intranet and Internet resources. Each location has a system administrator who babysits the systems. At headquarters, the company has a networking guru who steps in when the other system administrators run into a technical glitch with the firm's wireless system. Each administrator has been trained to use the proprietary devices from well-known vendors like Cisco, Lucent, or Juniper, among others.

The hardware is expensive. The administrators need special training. The maintenance activities have to be performed on site and then coordinated among the team responsible for the wireless network and its security.

Enter Meraki. A customer plugs in the Meraki devices at each facility and connects them to the company's network. A single administrator can manage the wireless connectivity at the three locations. The staff can be redeployed or terminated. Security is handled from a single console.

The core technology of Meraki is an Enterprise Cloud Controller. Meraki combines multiple networks into one virtual network. A single administrator can handle device management, provisioning, security, and status monitoring. When the distribution company opens an office in a city half way across the United States, Meraki's administrative tools allow the newly acquired company to be integrated into the corporate network in a day or two, sometimes less. Using locally managed resources, the integration can take weeks, sometimes months. The savings are not measured in reduced hardware costs. The savings result from elimination of staff, engineering services, and expensive troubleshooting which may require the networking guru to visit the remote location and fix the problem. No special training is required to administer a Meraki network via a browser.

Meraki can deliver high speed connectivity to the organization's employees without towers. A Meraki device is required. The device connects to the Internet, and the company's cloud - based control system takes over. Instant high speed wireless Internet.

The company asserts that it offers wireless performance that "exceeds many wired networks with single and multi-radio 802.11n access points for indoor, rugged, hard-to-wire and challenging environment where wireless signals can be problematic. The Meraki networks are secure with 802.1x authentication, and the ability to create multiple virtual LANs on a single physical wireless network: one for employees, one for guests, and additional virtual networks for specialized applications such as government contracts' connectivity requirements or financial transactions." Strong stuff.

Meraki implements a zero-configuration solution. High-speed wireless becomes available when the devices are plugged in and connected to a high-speed network like the one Google proposes to test. The Meraki gizmos discover the network and perform automatic configuration in a way that is similar to Apple computers handle network connectivity. Once connected, the Meraki device then hooks into the Cloud Controller. Meraki strikes me as a pain reliever for network configuration migraines.

There are no on-site controllers. Support and maintenance are included in the Meraki license fee. No certification is required which for some large firms can be as expensive as the support and maintenance contracts for the proprietary hardware controllers.

In December 2009, Meraki announced a lifetime warranty for Meraki indoor Enterprise wireless local area network (LAN) access points. In effect, a dead Meraki device is replaced without cost. The free replacement complements the included support and maintenance provided by Meraki. No special certification is required; Meraki networks are designed to be deployed and managed with basic IT skills. If true, I can begin to believe this statement: "Meraki brings all the benefits of wireless, and leaves behind the complexity."

What are the downsides of Meraki's technology? First, the approach is quite different from standard high-speed wireless operating procedures. Second, Meraki is based on open source with Meraki magic in its hardware and network management systems. Some organizations

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are not yet comfortable with open source approaches. Third, the Meraki hardware is what electrical engineers call a "black box." Traditional hardware from Cisco and Lucent require that a technical professional log into the device, configure it, update the firmware, and sometimes edit scripts written in a manufacturer's proprietary language, which is typical of traditional enterprise devices. Each of these steps consumes time and money. With multiple locations, the process is repeated for each significant change or fix.

Let's think about a hypothetical situation. Assume that Google bundles its high-speed broadband service with the Meraki technology or an equivalent. In addition, Google includes Google Maps and Google Apps? In my opinion, this hypothetical bundle might appeal to organizations looking to reduce hardware, software, and information technology costs in my opinion.

If Google does offer high-speed wireless connectivity with bundled applications at a competitive price, a number of incumbents would be put under considerable pressure. The appeal of a lower-cost, single vendor, cloud solution might be high in some market segments. With Google pricing a "black art," my hunch is that the company would offer more for less in order to disrupt incumbents.

Another likely impact is that telecommunications companies, network equipment vendors, and enterprise software vendors like Microsoft, Oracle, and their partners will have to respond. Increased competition is often a benefit, setting off even more innovation. Bottom-line: Google, Kansas, may only be the tip of a large, virtual iceberg floating in the cloud drifting toward the enterprise.

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