COS Systems and Nokia Bring Automated Open-Access Networks To the US Market

Automated open-access networks enable any number of independent service providers to lease capacity, so customers can choose different services at competitive prices.

By Marianne Cotter / *Broadband Communities*

Today's open-access networks are benefitting from a new generation of software that supports multiple service providers on a single network, providing choice for consumers. Already in use in much of Europe and other parts of the world, the software automates the selection and provisioning of different services from different providers for consumers, allowing consumers to create self-made bundles billed from a single source, usually the network owner. This model separates network ownership from ISP services.

Having multiple service providers is common to all open-access networks, but the automatic software provisioning ultimately makes the model successful in other parts of the world.

Auto-provisioning software compatible with widely used GPON optical network terminals (ONTs) has not been available in the U.S. market until now. This spring, COS Systems is introducing the COS Business Engine, the same platform it uses in its native Sweden to automate the country's open-access networks.

In the United States, COS Systems is known for its popular demand-aggregation tool, COS Service Zones, which made its mark creating fiberhoods to presell fiber services to neighborhoods based on demand. In Sweden, however, the company is best known for COS Business Engine, the technology solution it developed to manage and operate many of the open-access networks that account for 60 percent of the country's internet networks. (See: "Municipal Fiber in Sweden," January/February 2020.) The product is also deployed and serves more than 200,000 locations on open-access networks in Europe, Africa and Asia.

In the new automated model, once the fiber network is built, any number of independent service providers can lease capacity on the network to offer services, including internet, TV, phone, telehealth and home security.

For customers, the result is a choice of many providers offering different services at competitive prices. Consumers may get internet service from one provider, TV service from another and phone or telehealth services from yet another – creating their own bundles based on price and service options. They shop on an online marketplace provided by the network owner or operator, and the shopping experience – provided by COS Business Engine – is completely automated. It's similar to any other online consumer shopping experience, except activation happens instantly. In most cases, no truck rolls or proprietary equipment are necessary.

PARTNERING WITH NOKIA

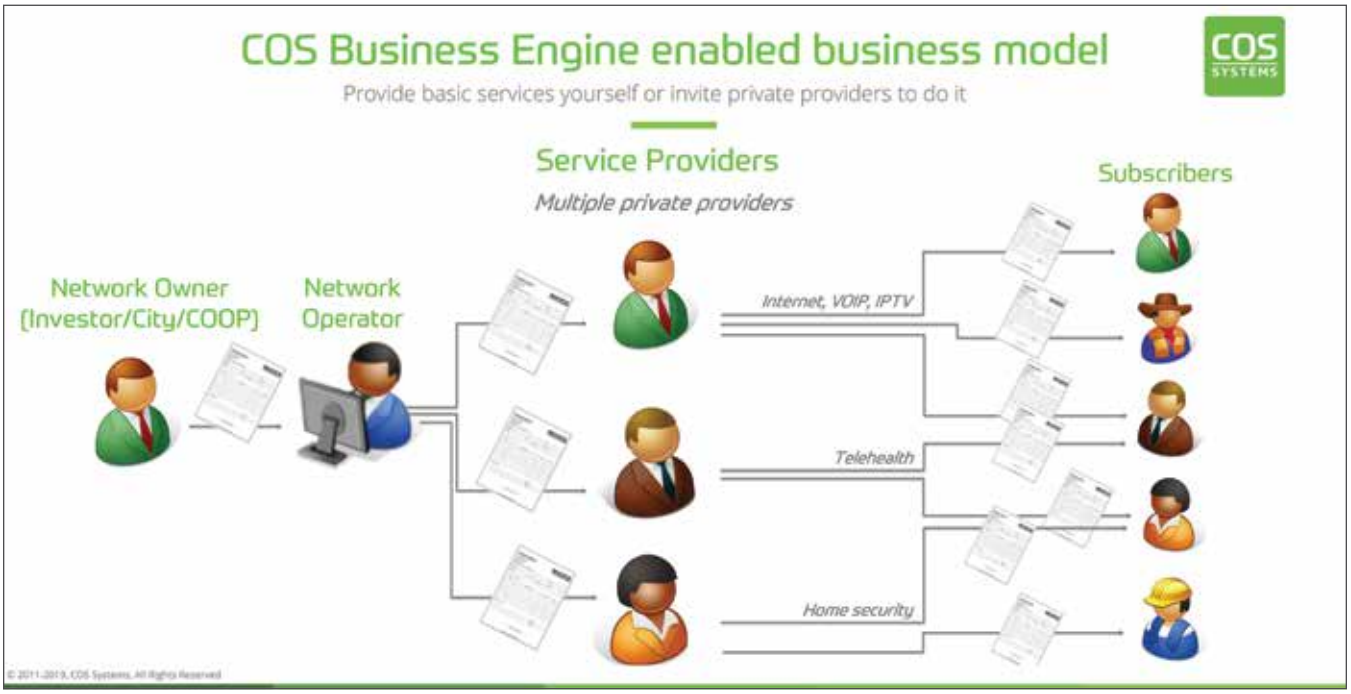
To strengthen its offering in the United States, COS Systems has developed an integration to

Graphic 1: In a single-provider model (left), an ISP owns the fiber and delivers only its proprietary service options. In an open-access model (right), multiple providers offer services on the same fiber strand, allowing customers to mix and match different services from different providers over a fiber network owned by a third party.

Nokia's element management system AMS, thereby offering an end-to-end solution to U.S. municipalities in markets too remote to attract investments from large incumbent providers. If the operator chooses Nokia's electronics platform, COS Business Engine delivers fully automated service activation directly from the marketplace. In the future, other electronics vendors may choose to integrate their element management systems with COS Business Engine in the same way.

In the incumbent model, in which the provider builds and owns the last mile, no other choice is available to consumers trying to find an affordable service provider. The COS Business Engine changes that: Consumers can choose from multiple service providers and have the ability to mix and match.

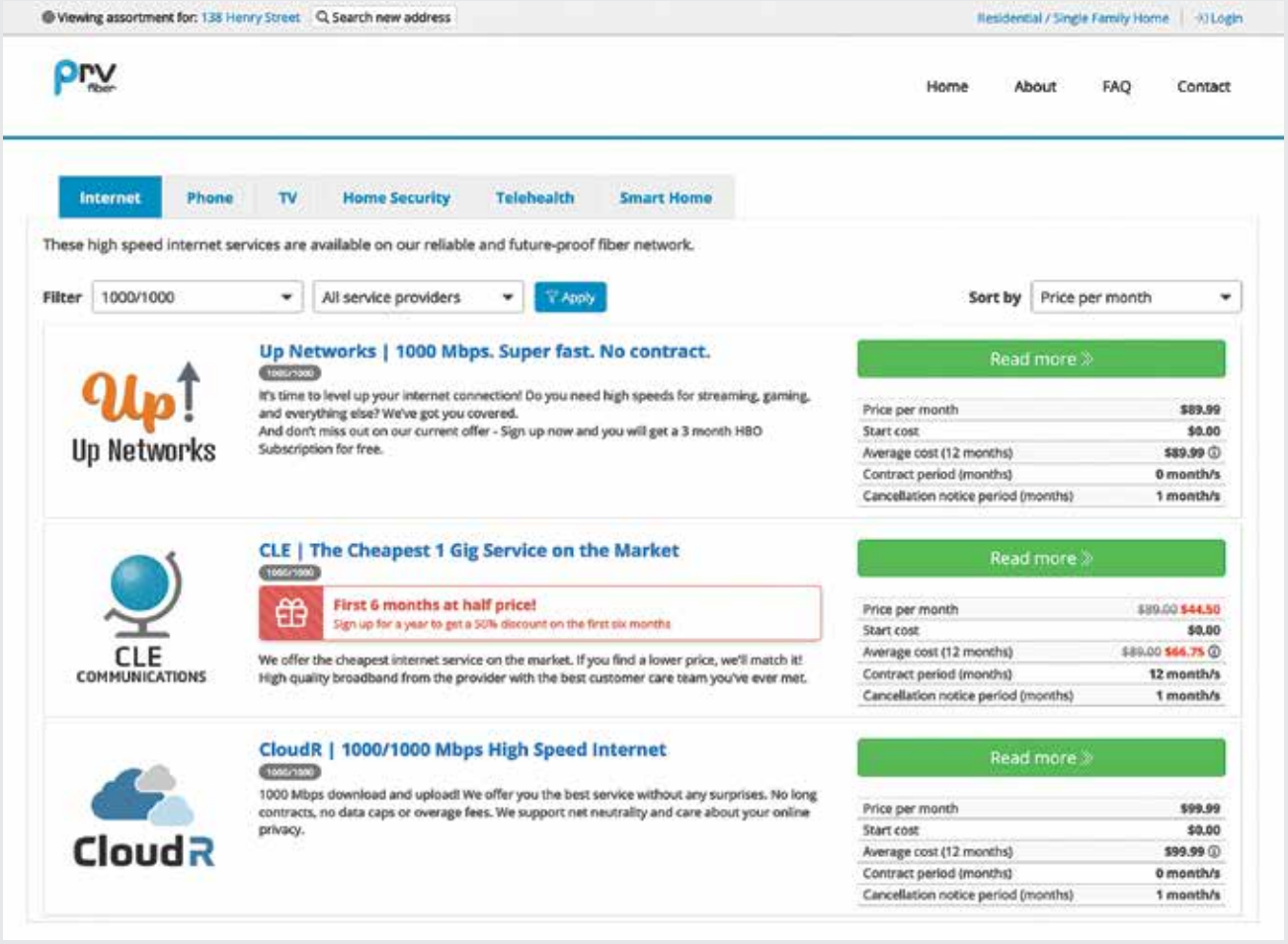
A vast underserved segment of the U.S. market is ripe for a model in which the municipality or some other entity builds fiber infrastructure as a utility, then leases fiber to service providers



Graphic 2: The COS Business Engine-enabled business model separates network ownership and operation from service providers, allowing multiple ISPs to offer services in an automated marketplace. The result is ease of choice and provisioning for consumers as they select different services from different providers.

AUTOMATED OPEN-ACCESS NETWORKS: THE CUSTOMER EXPERIENCE

- A customer initiates the experience by visiting the network marketplace and creating an account with a username and password. The software then identifies the customer's address.
- The marketplace opens and displays the assortment of services and providers available at a particular service location. Customers can use filters to find what they want; for example, they can filter by price, speed or service.
- The customer chooses a service starting with internet. A list of service providers appears with speeds, cost and sometimes special offers. The customer easily compares providers and makes a choice.
- The customer repeats the same process for each desired service.
- As soon as the customer makes a selection, the service is automatically provisioned, unless it requires some manual steps ahead of activation. This may happen, for example, if the service requires specific equipment to be sent to or installed in the customer's home, such as a TV box or a home alarm device.
- The customer receives email confirmation that the service has been activated.
- The customer receives a single bill from the operator regardless of how many service providers are involved.
- A customer who wants to change or cancel services returns to the marketplace to cancel unwanted services and select new ones. The change is provisioned instantly, and the billing is adjusted automatically.



Graphic 3: The consumer experience in an automated open-access network is similar to any other online shopping experience. Consumers select the service category they're looking for (in this case, internet) and a list of providers drops down with service details and price. Consumers make their selection and move on to the next product category.

whose offerings are listed on an online marketplace for consumers to choose from. Once a provider is selected, COS Business Engine immediately automates service activation. This maximizes customer satisfaction because there are no waiting times, and it minimizes the operations cost for the network operator.

The separation of different services from different providers is what makes the combined COS Business Engine and Nokia solution unusual. In this model, the single fiber that feeds into a customer's house is not leased to only one provider. Instead, every service is provisioned separately, and service providers pay a wholesale fee for each service they sell. (See comparison in Graphic 1.) Using well-known hardware from one of the leading manufacturers, it's possible to accomplish a software-driven approach to automated service activations in open-access networks, with no restrictions in services sold or number or type of providers.

CURRENT U.S. OPEN-ACCESS MODELS

Backbone or middle-mile fiber rings are considered open access in many U.S. networks, but inevitably they limit customer choice. "Many open-access networks in the United States today are merely fiber rings or middle-mile networks in which any provider can lease capacity and connect to branch out with their own last-mile networks to customers' homes," says Isak Finer, chief marketing officer and VP North America at COS Systems. "For end customers, however, this is still a monopoly because they don't have any choice other than the provider who built the last-mile network to their home."

Another model is one in which the network is built all the way to customers' homes, but the service provider installs the electronics. In this case, the consumer still has to acquire all services from a single provider.

AUTOMATED OPEN-ACCESS NETWORKS

An open-access network is built independently, say by a municipality rather than by the service provider. Service providers then lease space and offer a variety of services. An automated open-access network is what COS Systems can now provide to any network, and those using Nokia's electronics will be ready right away.

Several types of open-access networks are already available in the United States, but most lack the automated provisioning the COS Business Engine offers. "Unlike the open-access networks in the United States, our solution will deliver fully automated open access because it gives the ultimate freedom of choice to the end customer," says Finer.

HOW DOES OPEN-ACCESS TECHNOLOGY WORK?

With Nokia's AMS software serving as the platform, the owner/operator delivers a single strand of fiber to each home and installs a single ONT. Then, using software, COS Business Engine aggregates any number of providers to share the network and deliver services to any location. The neutral operator of the network lights the services to the end customer's location on behalf of the service provider, but the delivery of the actual service is that of the provider. Simply put, the network operator sets up a private pipeline for the provider within the fiber.

"With the cooperation of Nokia, we enable full automation all the way from the common online marketplace, where the customer can view all available services and then make a selection," explains Finer. "That service is then *provisioned automatically without the involvement of anyone*. Not the operator and not the service provider." Nokia's AMS platform allows COS to deliver the automated service using either Ethernet or GPON technologies.

WHO FUNDS AND BUILDS THE OPEN-ACCESS NETWORK?

The builder/owner could be a private company that would reap the benefits of building an open infrastructure, a current provider or an investment group. But Finer advises that utilities – especially co-ops – should build their networks open, even if they choose to provide internet service themselves. "By being open, they can ensure their members will have access not only to great internet but also future services provided by other providers."

BENEFITS FOR A CO-OP

The co-op will also have additional wholesale revenue from its network, which will benefit its members. And, of course, the co-op needs a municipality in which to build the network.

"We are seeing the formation of companies/groups that want to build these types of municipal networks, and they are approaching municipalities with a solution," says Finer. "The entity buying and using our software and Nokia's equipment is not necessarily the municipality. It would be the operator of the network, and I don't think all municipalities are interested in doing their own operations. I'm sure there will soon be many specialized operators, managing multiple automated open-access networks."

A NETWORK MODEL FOR THE FUTURE

Given the pace of technological innovation, it should be noted that the value of the open-access model is not limited to municipal networks. Any forward-looking network owner would be wise to consider the open-access model.

"Owners should ask themselves if they believe there will be more services provisioned on these networks in the future," says Finer. "If the answer is yes, they should make sure they are able to effectively provision any number and any types of services on their networks."

Because the open-access model does not build on leasing the entire pipe to one provider to do whatever it wants, but provisions every service separately for a wholesale fee, open access is a way to maximize the revenue of that fiber asset.

Simply put, the same fiber can be sold to multiple providers. ❖

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