
Guerrilla Telecom versus Gorilla Telecom

Large incumbent carriers face attacks from next generation voice service providers

Abstract

Despite lingering predictions of its impending demise, voice service has remained the leading revenue generator for telecom networks. In the wake of the failed generation of competitive local exchange carriers (CLECs), a new generation of “guerilla” service providers is emerging, characterized by companies such as Vonage, threatening to capture substantial voice service revenues, without incurring many of the costs associated with building or leasing local access facilities.

Facilities-based high-speed internet access companies can no longer wait until voice over IP is perfect before launching their own IP-based services. Voice over Internet Protocol (VOIP) has already come to “prime time,” thanks to widespread availability of high-speed internet, coupled with tolerance of minor quality flaws in calls, helped by people being accustomed to imperfections in mobile calling.

Continuing to delay product launches until “carrier quality” VOIP¹ can be achieved, could leave the gorillas of the telecom world, the incumbent phone and cable companies, in the position of providing raw utility capacity to the guerilla VOIP carriers, leaving the gorillas to incur the costs of carrying voice, without receiving any of the associated retail revenues.

Introduction

Guerilla: diminutive of the Spanish word guerra, war, and means petty war, that is, war carried on by detached parties; generally in the mountains; one who carries on, or assists in carrying on, irregular warfare; especially, a member of an independent band engaged in predatory excursions in war time;² a member of an irregular armed force that fights a stronger force by sabotage and harassment.³

In this paper, we use the term “Guerilla Carriers” to refer to the new generation of telephone companies that exploit existing high speed internet connectivity to provide voice service to customers. The term is fitting. The guerilla carriers are offering an irregular service, using unconventional technology to fight the stronger force of the incumbent carriers. The first generation of competitive local carriers attempted to battle the much larger and better funded gorillas by fighting with the same weapons: standard telephone equipment, the same services, the same quality, but lower prices. These first generation competitors have largely disappeared. Funding dried up as the new companies spread themselves too thinly against a larger, well entrenched opponent.

¹ VOIP: Voice over Internet Protocol – coding voice signals into an internet data stream and then decoding the signal at the other end, enabling the call to be routed over a public or private internet protocol data network.

² *Webster's Revised Unabridged Dictionary*, © 1996

³ *WordNet* © 1.6, © 1997 Princeton University

Changing customer expectations

Conventional telephone companies have focused on competition in “carrier-quality” services. New entrants committed to build networks just as good as that provided by the incumbent gorillas.

Guerilla carriers have learned that many customers are willing to accept “good enough” quality, when providing value in the form of cost benefits, additional services or other types of value. Sometimes, “good enough” is just that – all things considered. Customers’ perception of telecom quality has changed, such that traditional indicators (audio characteristics, central office power, network availability) may not be as important to users today. New features (such as phone numbers from multiple locations or distant location emulation, flat rate long distance pricing, unified messaging with voice-to-email conversion, web feature activation, etc.) provide compelling reasons to switch.

When voice service is dependent on available commercial electric power, the telephone may not work when the lights go out. In an era of near ubiquitous mobile service, people often have a second carrier available. The mobile service can provide emergency backup for an internet based service. Such an alternative on those rare occasions of power failure is “good enough” for most consumers.

Mobile services have served to condition users to prioritize their values in telecom services; mobility as a feature was more important than perfect call quality. For VOIP, voice quality may sometimes be compromised, if the local access IP network is congested. However, expectations of the public have been compromised in an era of mobile and international calls experiencing clipping or dropping. VOIP service may not be everything people came to expect from their phone company, but the phone company has not always provided the emerging capabilities that people can expect to see.

Guerilla companies are innovating with new services, such as allowing customers to pick phone numbers in distant locations yet have the phone ring wherever they plug-in their VOIP adapter. Features for these services are instantly added and changed by visiting an easily navigated website. Unified messaging means that voicemails and faxes arrive by email attachment and can be heard or viewed from any internet connected computer. And new features will continue to be added, fueled by virtually limitless creative minds developing niche applications for micro-markets – one of the few true lessons of the internet economy.

In the not-so-distant future, guerilla services providers will need to innovate in order to have significant market impact. We do not expect these providers to attract substantial revenues by simply replicating conventional telephony at lower prices. One of the lessons learned from long-distance wars is that gorilla-sized incumbents can crush smaller competitors with price slashing and are better able to sustain losses, if a price war erupts. New feature innovations, in many cases targeted at micro-markets and specialized applications, may be the key to guerilla operators securing widespread VOIP adoption. Such an approach will enable a VOIP service provider to build its market presence from the fringe toward the mainstream.

Changing investment strategies

Until the bubble burst, investors saw infrastructure companies as the best way to profit from the explosive growth in demand for internet bandwidth and services. Rather than sorting winners and losers among the myriad of applications, considerable amounts of investment capital flowed into companies that built fibre optic backbones and internet data centres and to the manufacturers of equipment used by such construction. The theory behind this investment approach was that infrastructure was a tangible asset. Investment in telecom infrastructure was a way to hedge the inherent technology risk: derive New Economy yields out of Old Economy values – real estate and other tangible capital asset based companies.

Unfortunately, too much money was available with too little attention paid to realistic ability to derive a reasonable return on the capital investment. Corporate restructurings saw valuations on the assets frequently cut by more than 90%. Telecom infrastructure became so plentiful that its strategic value has diminished. Long haul networks are still being acquired from bankrupt network operators for pennies on the dollar of original investment.

In the past, carriers created competitive advantages for themselves associated with differentiation in products, routes and capacity. Condominium fibre routes, nearly infinite capacity driven by optical multiplexing technology and fire-sale asset acquisitions have made low cost ubiquitous networks available to all comers. Long haul capacity has become table stakes – no longer providing a competitive discriminator between carriers.

Still, there remains limited choice in local access. Most major centres have at best two communications pipes entering most homes: the incumbent telephone company and the cable company. Both compete for providing high speed internet service to users. Both have tended to dabble in providing services that compete with each other's core business, in order to deliver the "triple play": voice, TV and internet. In some cases, mobile services, both cellular and Wi-Fi data, are added to the mix. Competition, while limited, has enabled consumers to choose between at least two different suppliers for high speed internet. In Canada, almost a third of all households have broadband service from the incumbent cable or telephone company, creating a platform for guerilla attacks on voice revenues.

While voice calls only require a fraction of the bandwidth capacity of a high speed connection, voice is an especially demanding application. Unlike most internet sessions, voice connections have symmetric resources demands: both sides of the call generate balanced loads. In addition, voice traffic has a sustained level over a long period of time. A single side of a conversation can keep traffic flowing through the entire time that the people are speaking. Contrast this to a web browser request for a multi-media page. The multi-media may need more bits to be transmitted, but the server fills this single request as fast as the network will carry the traffic. The network is then available to serve any of the thousands of other clients. Voice transmissions on IP networks threaten to change the traffic engineering characteristics of existing broadband access infrastructures. As a result, guerilla carriers could drive increased costs for incumbent high speed service providers, as networks need reinforcement to meet end user demands.

Some cable companies have delayed introducing voice services because of concerns about network readiness. Telephone companies have hesitated to introduce voice over their own broadband plant, because of concerns in respect of revenue cannibalization. Ironically, both may find their networks being used for such purposes and those revenues are being gained by guerilla operators.

Conclusion

VOIP services will increasingly appear across cable and telephone company high speed networks, whether or not the incumbent service provider cooperates. In many ways, VOIP is another instance of peer-to-peer networking. Like it or not, broadband service providers will have to engineer their networks to accommodate the traffic associated with voice, just as carriers have to accommodate multi-media music, video and gaming applications. Broadband internet service is marketed as an enabler of capacity-intensive applications. Yet, some providers of high speed services, whether DSL from the local telephone companies or cable modem service from broadcast distribution companies, view VOIP as an annoying consumer of resources. When congestion occurs in the network, some operations departments of high-speed internet providers seem to discourage users that avail themselves of the capacity and capabilities promoted in the high-speed services sales pitch!

Such a perspective, discouraging a continuing increase in demand, is dangerous and contrary to a customer-focused business philosophy. Rather than being viewed as a capacity-hog, VOIP must be embraced as an important application. VOIP drives: improved customer loyalty (thereby reducing churn) for broadband service; increased penetration of high speed services (helping to migrate customers from dial-up and high speed "lite" products); and, differentiated service capabilities, such as unified messaging and geographic independence for numbers.

For more than 100 years, voice service has provided the revenue streams that funded network evolutions of worldwide telecom networks. The gorillas of telecom, the giant local phone and cable companies, must prepare for guerilla attacks by next generation carriers. Alternatively, the gorillas will be left to incur the costs of carrying voice, while foregoing the lucrative retail revenues.