Issue No. 12
October 2005

# *The Perspective from BlueLake©*

## "The Implosion of Voice"

Reader,

This is the twelfth edition of BlueLake Partners' Newsletter – ***The Perspective from BlueLake***. The Newsletter is published periodically and focuses on and analyzes trends in the technology industry.
We hope you find it informative and thought provoking, and we welcome any suggestions or thoughts you might have on the content. Please feel free to pass it along to others that you think might find it interesting.

Sincerely,

**BlueLake Partners, LLC**

**Straight to the Point**

- VOIP is causing a revolution in the communications industry;
- The cost of voice transport is going to zero;
- The new economics of voice communication is spawning major innovation that will be exploited through acquisition, new ventures and product development;
- Voice will become a feature, rather than a product, in this New World
- eBay's Skype acquisition is the first of many businesses enhancing their product with voice communication.

### STRANGER THAN FICTION

What's wrong with this picture?

• A 130 year old stalwart, an icon of American business, twenty years ago the epitome of American business might, a company that has invested hundreds of billions of dollars in developing its market, a company known at American, Telephone, and Telegraph is purchased by one of its children, a so-called Baby Bell, for $16 billion.

• A few months later, the enfant terrible of the telephone business, a company that pioneered, and litigated to achieve, the deregulation of U.S. long distance, a company that acquired its way to scale, a company called MCI, is purchased by another, Baby Bell, for $8.4 billion.

• A few months later, a start-up that was anything but a household name, a company with $60 million in revenue, a company called Skype, is purchased by an auction house for $2.6 billion. If Skype meets its targets, the total purchase price balloons to $4.1 billion.

What's going on here? Are we living in the twilight zone? Are Boards smoking something funny?

No. What is going on here is a massive shift in the economics of voice communications. Legacy carriers are finding themselves in pricing quicksand, as the fundamental economics of the business are being undermined by disruptive competitors and the value shifts from the providers of the underlying network to third parties.

## COLLAPSE OF TRANSPORT PRICING

The price of transport—moving voice (or data) from one phone to another—has collapsed and only the low cost producers with massive economies of scale will survive. Transport is cheap and ubiquitous; providing it is no longer a differentiator. Concurrent with this, and because of some technological advances, value-added services can be layered on top of transport. It is these value-added services and their integration into applications—such as live auctions—that is driving value. More spectacularly, the new value added services are being delivered by third parties who have nothing to do with transport. Value is migrating from transport carriers to ancillary third parties sitting at the edge of the network. Unencumbered by a century of tradition, these third parties have two key advantages: they lack the burdensome cost structure of the carriers, and they innovate like crazy.

Is voice really imploding? Actually, voice is exploding as measured by the industry's most common metric: Minutes of Use (MOU)—the cumulative number of minutes in use on a phone network. The growth is driven mostly by the eruption of wireless, the deregulation of voice services in most countries, and the proliferation of telephony—particularly wireless—in the developing world. Voice itself is not imploding. It is the ***pricing*** of voice that is imploding.

For the past century, legacy carriers have had the benefit—and now the curse—of competing in highly regulated markets, where pricing inefficiencies escaped the scrutiny of unfettered competition. Now that pricing has become subject to the acid bath of the free market, the pricing of all transport has collapsed. Where it has not completely collapsed, it will disintegrate over the next few years.

Does this mean Verizon, SBC, BT, NTT, and France Telecom should liquidate and go home? Hardly, but we will get to that later.

## A LOOK BACK

In the U.S., the pricing of *long distance* voice has been declining for twenty years, as a result of a 1984 judicial ruling called the Modified Final Judgement (MFJ). In this ruling, long distance phone service was simultaneously deregulated and separated from local service. In 1984, AT&T, a regulated monopoly for decades, was granted the right to compete freely in many markets. The Regional Bell Operating Companies (RBOCs), the so-called Baby Bells, continued under regulation and were prohibited from competing in long distance. The country was gerrymandered into a large number of regions called Local Access Transport Areas (LATAs), which effectively defined the difference between local and long distance service. The MFJ was the starting gun that led to the growth of MCI, Sprint, and many other long distance competitors. More importantly, the MFJ legitimized the model of free competition in the communications business.

Over the course of two decades, long distance pricing cracked. One seminal event occurred in the mid 1990s when MCI stunned the industry with five cents per minute pricing on nights and weekends, its “Friends and Family” promotion. MCI charged ten cents per minute during prime time, but cut that rate to five cents per minute nights and weekends for calls between MCI customers. This program was a harbinger for several reasons:

1. It was one of the first examples of “strategic pricing”, loss-leader pricing on the weekend to make money during the week. At the time, of the five cents per minute, one cent per minute of revenue (not profit) went to MCI. The other four cents went to reimburse local phone monopolies who transported the call from the caller’s home to the MCI network and from the far end of the MCI network to the call recipient. Long distance carrier networks spanned metropolitan areas, but generally did not go directly to the home or business. This “last mile” was provided by the RBOC. Because MCI’s networks were running well under capacity on nights and weekend, and because of the economics of the long distance business (large fixed costs, near zero marginal costs), the one cent per minute that MCI accrued was almost entirely marginal profit.

2. MCI created an affinity program among communities of interest. Since this pricing was only between MCI subscribers, existing customers were motivated to get their friends and family onto the program. Affinity programs and connectivity between communities of interest are key in the new model of telephony.

3. It was one of the first examples of the tail wagging the dog, a case where a billing system was the driver of pricing, rather than the other way around. Much of the impetus of Friends and Family was that AT&T could not replicate the program because of limitations in its billing system. The concept of billing driving pricing is key because as marginal (e.g. per minute) pricing declines to zero, it

becomes uneconomic to track each and every call—ultimately leading to flat rate pricing.

The fundamental driver of U.S. long distance pricing decline is that the marginal cost of carrying a call across the long distance network is only a few hundredths of a cent per minute. Over time, these *costs* drop asymptotically to zero roughly following Moore's law. In a regulated market, the *pricing* stays artificially high, but as the market is deregulated, the marginal pricing also goes to zero. This phenomenon is why AT&T and MCI were sold for mere pittances: it's hard to compete having a huge fixed cost base and marginal pricing of zero.

The deregulation of U.S. long distance legitimized pricing deregulation in many communications markets and niches worldwide. Today, in the U.S. everything in communications is subject to the brutal inquisition of the free market. The fat pockets of profit are evaporating before our very eyes.

We will continue to see a pricing striptease, as markets deregulate around the world, and carriers clamor to add users and minutes of use without increasing their fixed costs.. International long distance has been under attack for a decade by services such as prepaid phone cards that use Voice Over the Internet Protocol (VOIP). Local pricing is currently being assailed by broadband phone services such as Vonage, who offer flat rate pricing, $24.99 per month, regardless of the number, or length, of calls.

And then there is Skype.

Skype was not the first, but popularized, free-calling over the internet. Skype is able to offer phone service between Skype users for no per minute charge, because it incurs no per-minute costs—there is no last mile because a call between Skype users never touches the RBOCs *voice* network. The service runs over a user's existing broadband connection, which is purchased independently of the Skype service. Because Skype was built to exploit, and not protect against, price declines, it has turned the traditional business model on its head. In Skype's world, transport is free, or close to it, and the cheaper the transport the better. Skype is able to make money from end users (or end applications) without charging for transport. This business model is a radical departure from legacy models and is the basis for the revolution in communications pricing.

## WHAT HAS HAPPENED WITH VOICE?

The hegemony has been broken. Not only has cronyism between the regulators and the regulated been largely swept to oblivion, but much more importantly the access monopoly has been broken. The deregulation and collapse of long distance is a prologue to a much larger story.

Although long distance carriers have hacked away at long distance pricing since the 1984 Modified Final Judgement, their freedom of action was severely restricted because of technical and regulatory constraints: all of their calls had to traverse a regulated RBOC network over the last mile. To protect RBOC revenues, the MFJ created an elaborate system of subsidies requiring long distance carriers to reimburse local carriers for transporting the call over the first and last miles.

The Baby Bells clamored for reimbursement for carrying long distance calls traversing their networks in the form of per minute access and termination fees. These fees were extremely contentious before the issuance of the MFJ, and have been subject to endless regulatory jousting and litigation in the twenty years hence.

The rationale for these reimbursements was two-fold, and both arguments were based on the supposed marginal costs. The first argument was to pay for the distribution network, the gaggle of wires owned by the RBOC from its central office to the home. Because the customer paid his long distance bill directly to the long distance carrier, the RBOC had no way of getting paid by the customer. The marginal cost of carrying the calls was a real cost and the RBOC had to get reimbursed for use of his network—or so went the argument. Thus, the long distance carrier had to share a portion of the long distance revenues with both originating and terminating carriers.

In point of fact, on the access side the customer did pay the RBOC a monthly service fee for dial tone. This fee was used to pay for the distribution network, but never mind: why interfere with a free lunch? The terminating RBOC admittedly had no billing relationship with the customer. The MFJ mandated the long distance carriers reimburse the RBOCs for minutes used on the network.

Secondly, the phone business has a long tradition of charging by the minute, because many decades ago the actual cost of delivering the service was tied to the length of the call. Prior to 1951, operators had to manually connect long distance calls. These hourly workers, represented real incremental costs, thus leading to per minute pricing. The reality is that that by the 1970s, automated switching technology eliminated incremental operator costs, and largely diminished all time-sensitive costs for phone services.

The heritage of per minute pricing was a cozy—and very profitable—arrangement, and one that was allowed to continue even though it could no longer be justified by costs. As long as the local monopolies controlled access, they retained considerable pricing power—and could and did create pockets of economic inefficiencies. Posture, scream, rant, and snipe all they might, long distance carriers still had to rely on a local monopoly to deliver service to their customers.

The U.S. Congress passed and President Clinton signed into law the Telecommunications Act of 1996 (often called the Telecom Reform Act or TRA) which sought to break the local monopoly to the home and the office. Paradoxically, the monopoly was not broken by the TRA, but by free competition from wireless services, the ubiquity of mobile phones and the pervasiveness of broadband to the home and office.

According to a March 2005 study by the Federal Communications Commission, six percent (7.5 million households) have abandoned wired service completely. Some industry analysts predict that this will increase to fifteen percent by 2009. In 2003, forty percent of all U.S. calls originate or terminate on a mobile phone, bypassing the carrier's regulated last mile and attendant RBOCs' gravy train.

Remember "strategic pricing" of MCI's Friends and Family program? It's déjà vu all over again. In an effort to gain incremental customers, as part of their rate plans, mobile phone carriers have provided "free nights and weekends" and "free long distance". It is the combination of these plans that has led to the demise of U.S. long distance carriers. If your competitor is offering a service for free, you cannot compete on price. If you have no other basis to compete, you have no business. This is the first of many examples of business models that are being destroyed by new pricing paradigms.

And what has been the affect of broadband? The internet has been built on the technical concept of layers. A broadband provider delivers connectivity to the home. Others, such as AOL or Google, offer services that run on top of this connectivity. The ability of third parties to provide services independently, on top of connectivity, is called disintermediation, and is a key cognitive shift in how services will be delivered—and who will deliver them.

Twenty years ago, new capabilities, such as caller ID, had to be purchased from the connectivity provider, the local RBOC. Today, disintermediation has broken this hammerlock, allowing third parties unaffiliated with the transport provider to deliver new services.

A decade ago my colleagues used to joke that it took Bell Atlantic fifteen years to deliver call waiting. Compare this glacial evolution to the warp speed innovation of Google—which did not exist ten years ago—and one can see the power of internet innovation. Broadband to the home and office is enabling the power of internet innovation to take over the phone. The transport of voice, the bread and butter of legacy carriers, is being subsumed by applications for which voice is a convenient enabler. This is why eBay bought Skype: eBay realizes the Skype service can be an enabler for more eBay auctions.

Over time, disintermediation will have several affects. First, it will drive the value out of the network: transport pricing will move towards, but never get to, zero. Secondly, the value will migrate to services and applications that sit on the broader network. These new services will be delivered by third parties and not by the carrier who provides the transport.

Finally, the rate of innovation will explode. Since anyone can innovate, everyone will innovate—or at least many new organizations will. Slow moving carriers will not stand a chance against their more nimble competitors, who are unencumbered by established thinking, unburdened by high cost models, and unconcerned about protecting current revenue streams.

## WHERE IS VOICE GOING?

Absent the shelter of regulation, voice pricing is being subjected to the bitter winds of the free market. With the bundling of long distance into mobile phone services, U.S. domestic long distance itself has become worthless. Next on the guillotine is international long distance pricing, which has already been slashed by pre-paid phone cards. It will be under further attack from services such as Skype. As is classic with disruptive markets, incumbents will retreat to islands of profitability, only to have those islands eroded by hurricanes of disruptive players with fundamentally lower cost structures and a bevy of innovative services.

New business models are emerging, and are corroding traditional business models. Going, but not yet gone, is usage-based billing, which accounts for each call, and the length of each call. For years, carriers captured huge amounts of incremental revenue, with no underlying costs. Now that the market is gravitating toward perfect competition, the per minute pricing model is going the way of carbon paper. Rate plans are gravitating towards flat rate pricing. As one example, a U.S. company called Vonage offers flat-rate local and long distance pricing for $24.99 per month. Voice services will be priced more like software, with upfront costs and periodic maintenance costs.

Another driver towards flat rate pricing comes from the realization that the cost of *accounting* for a call often exceeds the cost of the call itself. An interim alternative to flat-rate pricing is bucket pricing. Mobile plans are an example of this, where users sign up for a standard number of minutes per month.

For now, one of the great sources of profits in the mobile phone business comes from mismatches between rate plans and usage. Customers who have plans far above their actual usage are a huge source of profit, as are customers who greatly exceed their rate plans and pay for expensive extra minutes.

Given the shifting sands of pricing and business models, does this mean that Verizon, SBC, and their ilk should close up shop? These companies have scope and scale not easily supplanted, even by pesky upstarts such as Skype.

To be somewhat simplistic RBOCs need to focus their business in three areas:

• Wireless voice. Verizon has been the most visible in using its brand and marketing muscle to build its wireless voice business. As quickly as its wireline legacy business atrophies, Verizon is growing its unregulated mobile business.

• Broadband to the home. This is another boon to the Baby Bells, a huge source of incremental revenue.

• Granny Service. Wireline service for luddites who refuse to move to the new paradigm and want the security of a phone wired to the wall: think of your grandmother who continued to pay $3 per month rental for her black telephone that was a heavy as a brick, even though she could buy a phone at Walmart for $10.

## LEGACY CARRIERS GAME PLAN FOR SURVIVAL

Given the attack of disruptive competitors with lower cost structures and fewer capital requirements, what do legacy carriers do to survive the onslaught? To a large extent they have begun doing it:

• Consolidation. The seven original Baby Bells have consolidated into four today. Included in these four are additional local carriers, such as GTE (now part of Verizon), outside of the pre-1984 AT&T.

• Ruthless Cost Cutting. RBOCs might do well to fire half their work force. The merciless economics of the business, the presence of unfettered competition, and the entry of more nimble competitors will force increased efficiencies in the business. SG&A expenses must drop to stay competitive.

• Focus on Wireless Voice and Broadband Data. What legacy carriers do best is deliver bits reliably across networks. Traditionally, they have never been fleet of foot in developing and delivering new innovative services: recall the jibes about Call Waiting. RBOCs need to focus on delivering bits at the lowest possible cost. Focusing on other areas is nothing more than a fool's errand.

• Expand Internationally. Communications services are exploding internationally, especially in the developing world. These represent huge opportunities, which is what huge companies need in order to have viable growth plans. The RBOCs have the skills, scope, and scale to address these opportunities. The play for them is largely a local and intra-country plan. In unregulated markets, RBOCs will not have a prayer against the likes of Skpe in delivering international traffic cost effectively.

## START UP OPPORTUNITIES – THE WORLD OF INTERNET INNOVATION

Where are startups likely to succeed in this brave new world?

I wish I knew.

What is clear is that as transport collapses, value will move towards applications and services, and that most of these services will be provided by third parties.

The New Voice enables a world of internet innovation. Innovation has been stymied for many years by the arcane and proprietary nature of the phone system and a desire by the incumbents to exclude the upstarts. Now all of that changes.

In the new model, two things happen. First, voice gets integrated into, and then subsumed, by other services. Skype is such as example, particularly when it is combined with eBay. In this model, voice becomes an enabler for another service, live auctions, and the value of voice is subordinated to the value of the auction service. This paradigm is the model for the future, but probably not to the tune of $4.1 billion.

Secondly, voice becomes an extensible platform for plug-ins and add-on services. In this context, voice platforms, such as Skype unleash the world of internet innovation. Skype itself has created an open API, whereby third party vendors can add applications that plug into Skype. One such company is iSkoot, which has built a client that redirects Skype calls to the users' cell phones. More generally, Skype is in the process of creating its own ecosystem with open Application Programming Interfaces, as contrasted with legacy carriers who eschew such an idea. Embracing the frenetic world of extensible innovation will be the theme of the new voice.

Many third party services will emerge over the next decade. There are startups who plan to provide VOIP services for affiliated groups, such as interactive gaming users who want to add voice to their interactive over-the-net group game. There will be variations on this theme, from voice enabling promotional events (e.g. The Pepsi Challenge) to ephemeral activities such as voice blog discussions or conventions.

The New Voice is more akin to "voice chat" than traditional telephony. Legacy carriers will likely play a only a peripheral role in this new paradigm. Third party service providers, including ASPs and shadow hosting companies, will provide these services, most likely for a fixed fee, such as a one-time fee or per seat cost. Voice traffic will ride for free over the packet network.

**CONCLUSION**

While AT&T and MCI go the way of Penn Central Railroad and Bethlehem Steel, eBay's Skype acquisition is a shot into the future.

Swept to sea are anachronistic pricing models justified by cost structures that became extinct when Harry Truman left office, but which have been protected by the heavy hand of regulation. The world has changed. As value in the phone system is disintermediated, and the price of transport goes to zero, there will be an explosion in innovation. Legacy carriers will focus on moving bits. The real excitement and value will be added by third parties who deliver services that we cannot even fathom in 2005.

## About Chris Lamb

Chris Lamb is a management consultant who specializes in corporate development, the commercialization of technologies, and working with mature companies who need to disrupt their business culture to meet new market demands. Previously in his career, Mr. Lamb was the founding CEO of eDial an IP Telephony start-up, where he raised $32 million in venture financing. eDial was sold to Alcatel in 2004. Prior to eDial, Mr. Lamb was Director of Business Development for 3Com's $2 billion Enterprise Systems Division where he negotiated business alliances with Siemens AG, Newbridge Networks and Extreme Networks, among others. Mr. Lamb managed Chipcom's developer alliance program when it was acquired by 3Com. Mr. Lamb is a graduate of Swarthmore College. He can be reached at chris_lamb@msbx.net.

**About BlueLake Partners:** BlueLake Partners is a boutique investment bank focused on providing merger & acquisition advisory services, raising growth equity capital and providing other financial advisory services.

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