

EXCHANGE IS GOOD

How bandwidth exchanges can help telcos control costs

The Nasdaq 5000 exists so that each member can enter into transactions with any of the 4,999 others using standardized terms and conditions. Now, consider telecoms. In 1996 there were 367 international communications carriers; today there are more than 2,200. Yet the manual negotiation process by which carriers buy, sell, and deliver traffic across their networks has changed little since the days when carriers were government monopolies. Alex Mashinsky, the founder and vice chairman of Arbinet-theexchange, explains how a new wave of bandwidth exchanges can replace the communications industry's cumbersome one-to-one trading processes and help telcos curb costs.

Left: Alex Mashinsky

by Alex Mashinsky

Since the Industrial Revolution nearly 200 years ago, manufacturing processes have been continuously modernized, standardized, and commoditized, allowing goods to be made ever more quickly, on a huge scale, and at low cost. The efficiencies permitted by the Internet hold the same kind of promise as companies tackle their sales, general, and administrative (SG&A) costs. Today U.S. corporations are estimated to spend 16% of revenues on SG&A; some experts say automation and standardization could eliminate as much as 50% of those costs.

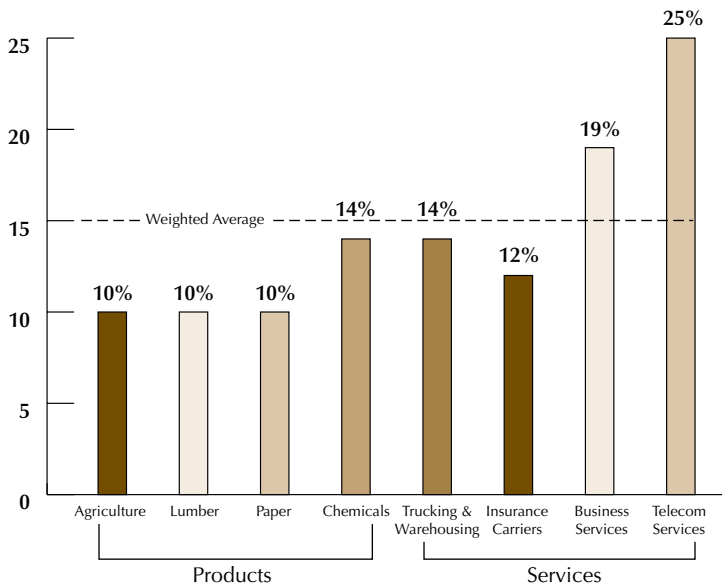
But in the communications industry, SG&A expenses make up 25% of revenues, a full 900 basis points higher than the U.S. corporate average (Figure 1). Bernie Ebbers, CEO of WorldCom, estimates that in three years,

60% of his company’s costs will be SG&A, up from 22% today, as infrastructure and operations costs decline as a percentage of revenues and as the costs of acquiring and serving customers continues to rise.

As an industry, telecom faces what seems at first a paradox. We’re dealing with ones and zeros. We don’t have the problems involved in, say, shipping a roll of steel. We can move our commodity anywhere in the world, within a split second, at essentially zero cost for the transaction. Yet the industry still has one of the highest levels of SG&A costs in the economy.

It is possible to attack rising SG&A expenses and bring them down to or below the levels that other industries enjoy—by learning to stop fearing commoditization and by eliminating the incredibly costly and time-consuming processes forged in this industry over the years.

Figure 1: SG&A PERCENTAGE OF REVENUE IN U.S. INDUSTRIES



SOURCE: CFO MAGAZINE AND ARTHUR ANDERSEN LLP, 1999

Figure 2: SG&A ACROSS THE TELECOM INDUSTRY

Tier 1		Tier 2		Tier 3	
GTE	16%	Pacific Gateway Exchange	10%	World Access	11%
AT&T	21%	Broadwing	23%	STAR Telecom	14%
WorldCom	22%	Williams Communications	29%	IDT	18%
British Telecom	22%	Qwest	30%	Startec Global Comm	20%
Sprint	23%	Global Crossing	38%	eGlobe	70%
Cable & Wireless	25%	Level 3	92%	WorldPort Comm	136%

SOURCE: PUBLIC COMPANY INFORMATION

Breaking it down

A good way to grasp the problem is to look at SG&A in three industry tiers. Figure 2 shows the SG&A expenses of several public companies. Tier 1 includes those market makers that do not have to sell on the basis of price and whose large volumes reduce SG&A as a percentage of revenues. Tier 2 includes companies that are known in the market but which spend heavily to expand market share and facilities, and which have lower volumes that further increase SG&A as a percentage of revenues. Tier 3 is made up of entry-level carriers that spend heavily to break into the market, whose low prices contribute further to SG&A as a percentage of revenue.

By looking at the industry in these tiers, we get a better idea of the impact of SG&A on company valuation and the differences between companies of different sizes and at different stages of development. Some companies can squeeze costs and reengineer infrastructure more easily than others. New entrants enjoy modern facilities and lower staffing levels than the big incumbents, but they typically don't have comparable rev-

enue bases, and many have not yet reached profitability.

Now, given the numerous pressures on telecom pricing, it won't be long before we see minutes bundled into packages that make them seem essentially free to the consumer.

However, carriers will continue to incur costs to operate their networks. Wholesale transactions between carriers will continue to occur whenever a call passes from one network to another. In 1999 the average cost per minute for international service for a large pure-play carrier's carrier was about 24¢. Such a carrier incurred wholesale SG&A costs of 10% of revenues, or 2.4¢ per minute. The carrier's own cost for minutes was 87% of revenues, so that its gross margin was about 3%. As the price per minute declines, this carrier will very quickly incur expenses greater than its revenue unless SG&A expense and its purchase cost for minutes can be reduced faster than prices fall.

Industry exchange: old model, new possibilities

The exchange model can provide the means to get SG&A under control, and a global exchange for telecommunications seems

inevitable. The differentiators that once separated companies and their products are gone. Transport is standardized, and companies carry the same types of traffic using the same protocols over similar networks. Basic communications services have become commodities whether we like to think so or not. To remain competitive, companies will have to shift resources away from standardized products and toward high-margin value-added services.

The concept of a mutually beneficial electronic exchange is not new. This model has proven itself in some of the most efficient and successful industries. The global electronic exchange, for example, allows companies and individuals to move any currency anywhere around the world, instantly. The financial markets began migration toward an exchange model 90 years ago. The early stock market and commodity markets, with their unstandardized contracts, relationships, and products, had huge SG&A costs. Over the years, they moved toward commoditization of the basic product, and standardization has led to enormous increases in the volume of trade and in returns on that volume.

The exchange model that offers the most value for telecommunications is a full-service exchange that integrates the transactions, the delivery of traffic, and the clearing and settlement of payments. Telecommunications deals with a physical layer that the financial markets do not have. When a share of IBM is traded, nothing really happens on the back end—no runner travels from one place to another to deliver the certificate. In telecommunications trades, though, the ones and zeros must actually flow through the pipe from the buyer to the seller. Since 1996, Arbinet has been working

on the physical layer and implementation and on questions of intellectual property that must be addressed to make a telecommunications exchange possible.

One example illustrates the costs currently associated with trades in the telecommunications industry. Arbinet-theexchange recently ran a trading conference in New York City, with about 140 participants. Fifty percent of the attendees came over from Wall Street because they were interested in helping customers hedge risk and manage long-term positions. Many telecom industry representatives, on the other hand, were more reserved and somewhat skeptical.

During one panel session, we asked a currency trader and a telecom sales manager similar questions. The currency trader was asked, “How long does it take and how much does it cost to move \$1 million worth of currency from Japan to New York?” The answer was simple and direct: “About 15 seconds. I make a phone call or look at my screen, then place the trade. It costs me about 3¢ for \$1 million worth of currency.”

Then the telecommunications sales manager was asked, “How long does it take and how much does it cost to move \$1 million worth of capacity?” The answer was complicated: “Well, you know, I have my legal department; I need 15 signatures. I have to play a round of golf with the people involved. Then maybe a dinner or two, and I have to negotiate certain terms and conditions. Then I go back to my legal department to make sure the changes to the contracts are fine. When I’m done, it’s taken anywhere from four to eight weeks, depending on how long it took me actually to give those orders and put them into the system so somebody can provi-

sion them and implement them. The orders usually go to the top of the pile, but someone has to go there once or twice to make sure that they actually get done. It all costs between \$50,000 and \$60,000.”

The centralized online telecom exchange solution integrates automated physical delivery, dynamic routing, and centralized settlement with a neutral and anonymous trading environment. With these innovations, telcos can reap tremendous benefits. Without them, they are essentially throwing away capacity. Carriers have invested in networks that are depreciating rapidly because of technical innovation. A 40-gigabit circuit generates 40 gigabits every second and depreciates to zero every second. If it is filled only to 20% or 30%, the rest of the capacity vanishes. If it isn’t monetized, it’s simply not there anymore.

I do not know of any telco that has even two relationships with the same contract. If a company has 50 or 100 relationships, each

requires separate negotiation and unique conditions, settlements, and legal amendments. The 5,000 Nasdaq members, on the other hand, have agreed to join a “club” in which terms and conditions are standardized. The result is that they can buy or sell anything in an instant.

When a telco joins Arbinet-theexchange, it gains the opportunity to enter into transactions with multiple members using standardized terms. We plug our members’ networks into a central, liquid market in which the activity controls the price, routing, and settlement of traffic across the member’s networks. When members need to terminate additional capacity, it flows onto the networks of the other members according to the dictates of the market. When a member’s network is underutilized, it can go to the trading screen and price its minutes in a way that allows excess capacity from other members’ networks to fill up this potential. We also find that quality, service, and other issues in

Figure 3: TRADITIONAL SG&A COSTS VS. TRADING SG&A COSTS

A Wholesale Pure-Play Seller	1999 revenues—\$604,591,000 1999 SG&A expense—\$62,865,000 (10.4%)
1999 Results	Incremental revenue—\$138,300,000 Incremental minutes—\$829,718,000 Incremental SG&A—\$26,074,000
1999 New Business Costs	SG&A/new minute—\$0.035 SG&A % of new revenue—18.85%
Comparable Trading Costs	Fees/new minute—\$0.003 Fees % of new revenue—1.8%

SOURCE: HISTORICAL COSTS; 1999 10K; TRADING ESTIMATES; ARBINET-THEEXCHANGE

This table shows the 1999 SG&A costs of a wholesale telecom service provider and comparable costs of running the same transactions through the Arbinet exchange.

the industry are standardized on an exchange, and this allows members to focus on tradeoffs between price and quality when making buy or sell decisions.

To assess the potential effects of an exchange solution, we can look again at a pure-play carrier's carrier (Figure 3), whose wholesale revenues for 1999 were about \$600 million, with SG&A of about 10%. By driving year-to-year incremental revenues and SG&A down to the per-minute level, it's possible to derive the SG&A cost per minute of doing new business. In this case, the SG&A cost per new minute is \$.035, or 18.85% of revenue. We compared this with the costs of running the same transactions through our network, where fees account for \$.003 per new minute, or 1.8% of revenue. [Note that Arbinet-the exchange's pricing model had changed at press time; however, the example is still illustrative.] Buying and selling the old way, then, is 10 times more expensive than using an exchange solution.

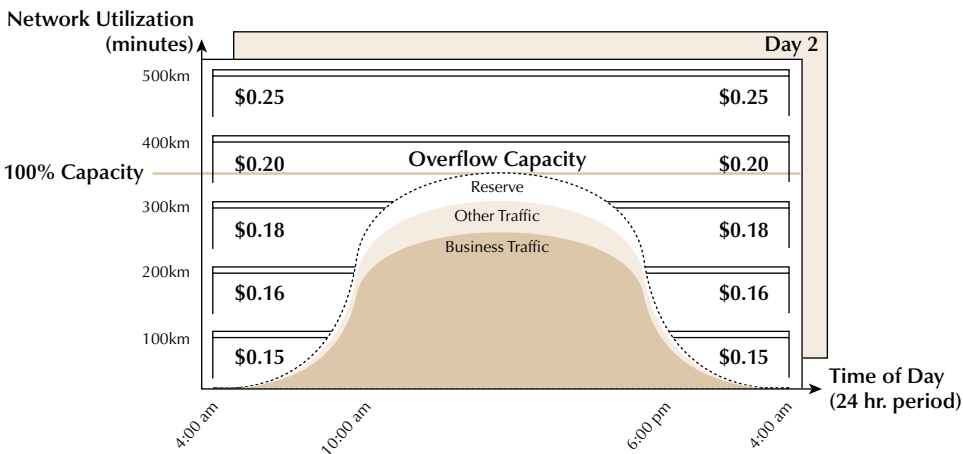
Conclusion

Telecom exchanges will bring efficiencies to communications carriers that will rival the sweeping changes that have come about with deregulation. And remember that we're only in the infancy of Internet technology.

Chances are good that five years from now White House press staff will be talking, not about the effects of oil prices, but about how the price of bandwidth has changed the consumer price index or influenced inflation. In an increasingly service-oriented economy, bandwidth will become a crucial component in the cost of goods and services produced around the world.

Trading bandwidth on an exchange produces benefits beyond efficient pricing. An average transaction in the telecommunications industry today takes about eight weeks. At our exchange, the entire process, including provisioning, settlement, and clearing risk, takes no more than one hour. Using an exchange, companies can provision capacity on their networks on demand and build to a more efficient level.

Figure 4: INCREMENTAL REVENUE OPPORTUNITIES



Underutilized network capacity can be much more efficiently monetized, with little incremental cost, in an electronic trading environment.

Utilization will spell success or failure in the telecommunications industry. A recent MIT study reported that the world's communications networks are 20% utilized at any given time. Other capital-intensive industries, such as the airline industry, could not long tolerate a 20% utilization rate. The invention of the Sabre airline reservation tracking system pushed utilization in that industry to a steady 70% to 75%. Communications network capacity that sits underutilized today can be much more efficiently monetized in an electronic trading environment, with little incremental cost (Figure 4). This additional revenue drops straight to a carrier's bottom line.

The carriers that will win in this rapidly approaching world of electronic capacity trading will be those that stop dreading commoditization of basic transport and who gain efficiency through online trading. These carriers will focus their resources on their transactions with end users, not their wholesale transactions within the industry. Thousands of startups out there are creating bandwidth-hungry applications; connected individuals and enterprises will consume ever-increasing amounts of this capacity. Revenues and profits will follow for those who learn to control the flow of this traffic onto and off their networks more efficiently.

Alex Mashinsky is the founder and vice chairman of Arbinet-thexchange. He can be reached via e-mail at amashinsky@thexchange.com.