

# It's A Stretch To Believe In High Price Elasticity

Michael Weingarten and Bart Stuck

**New service providers hope to slash prices and make it up in volume. That won't work indefinitely.**

“Elasticity of demand” is one of those economics terms that sounds dry but actually translates fairly simply into a set of compelling business issues. More specifically, the assumptions that service providers make about demand elasticity—and how valid those assumptions really are—will directly affect what telecom services we get and how much we pay for them.

For those of you who never took Economics 101, elasticity of demand is the degree to which a percentage change in price leads to a corresponding percentage change in market demand. For example, if market price declines 3 percent and market volume increases 3 percent, demand elasticity is  $.03/.03=1.00$ . If market volume increases 9 percent while market price declines 3 percent, elasticity is 3.00. Conversely, if volume increases 1 percent while prices decline 3 percent, elasticity is  $.33$ .

Thus, for service providers, the higher the elasticity the better. As seen in Table 1, if I have a network with 25 percent variable cost as a percentage of sales and 60 percent fixed cost, I generate a pretax profit of 15 percent (index 100). If I cut prices 3 percent and I have 3.00 elasticity, the resulting 9 percent growth in demand boosts my net profit by 23 percent.

Conversely, if I cut prices 3 percent and I have  $.50$  elasticity, demand only grows by 1.5 percent and my profit therefore declines by 13 percent. Interestingly, in a business with fixed overheads to cover, a 1.00 elasticity does not get me to breakeven—cutting prices 3 percent in a 1.00 elasticity environment results in a profit reduction of 6 percent. In fact, I need a 1.39 elasticity to break even.

## Past Trends

Now let's take this abstract, hypothetical discussion into the real world of telecommunications services. At the recent BCR/McQuillan Next Generation Networks conference, a senior executive from a leading telecom service provider asserted that telecom demand elasticity (as illustrated by U.S. domestic long distance data) is 3.00.

This is big news. If we believe it, the task as telecom marketers is simple—cut prices, and more than make it up in volume. There are two problems with this scenario, however:

■ If long-distance elasticity is so high, why are AT&T and WorldCom in such trouble? Why aren't they raking in record profits?

■ How come everyone who ever looked at the U.S. long distance market says that elasticity is under 1.00? Six years ago, the co-author of this article (Michael Weingarten) wrote a detailed white paper on U.S. telecom demand elasticity (a copy can be found in the Publications section of our website, [www.signallake.com](http://www.signallake.com)). The conclusion was that the elasticities for U.S. long distance, intraLATA toll and local service were 0.75, 0.40 and 0.15, respectively—not nearly enough to justify price cuts.

Looking at the service provider data from NGN (replicated here in Table 2), we do not believe that it supports a 3.00 elasticity finding. For one thing, there are problems with the reported data—the volume increases are substantially higher than those reported by the FCC (7.3-9.2 percent per year versus the service provider's 12.9 percent). This results in overly high elasticity numbers. Even if this were not the case, a correct

Michael Weingarten ([mikew@signallake.com](mailto:mikew@signallake.com)) and Bart Stuck ([barts@signallake.com](mailto:barts@signallake.com)) are managing directors of Signal Lake Venture Fund (Westport, CT and Boston). Weingarten also is managing director of Telecom Advisory Services at Monitor Group (Cambridge, MA), a leading international strategy consulting firm, while Stuck is president of Business Strategies LLC, a network computing and telecommunications consultancy.

TABLE 1: Different Elasticity Scenarios

	Base Case	Elasticity 3.0 3% price decline	Elasticity 1.0 3% price decline	Elasticity 1.39 3% price decline	Elasticity .5 3% price decline
Elasticity		3.00	1.00	1.39	0.50
\$Per Unit	\$1.00	\$0.97	\$0.97	\$0.97	\$0.97
Units	100	109	103	104.17	101.50
Total \$ Revenues	\$100	\$105.73	\$99.91	\$101.04	\$ 98.46
Variable Cost Per Unit	\$0.25	\$0.25	\$0.25	\$0.25	\$0.25
Total Variable Cost	\$25.00	\$27.25	\$25.75	\$26.04	\$ 25.38
Gross Margin	\$75.00	\$78.48	\$74.16	\$75.00	\$ 73.08
Fixed Costs	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00
Pretax Profit	\$15.00	\$18.48	\$14.16	\$15.00	\$ 13.08
Profit Index	100	123	94	100.02	87

Source: Signal Lake Pro Formas

**Cutting high prices stimulates demand; cutting low prices probably doesn't**

calculation of elasticity needs to take into account trendline growth; i.e., growth that would have occurred in any case. As near as we have been able to determine, this was not done by the service provider.

As discussed in some detail in the 1994 white paper, there are two trendline factors that drive telecom growth. The first is population, growing approximately 1 percent per year. If you have more people, they make more phone calls.

The second factor is increasing GDP per capita (rising around 4.6 percent nominal per year). Richer people have more money to spend on telecom, and they spend it. Indeed, richer countries spend more on telecom as a percentage of GDP. Net-net, if we simply consider nominal GDP growth and increasing telecom/GDP trends, it's likely that 7 percent annual growth can be attributed to secular macroeconomic trends alone—*not* price reductions.

So, what is the "true" price elasticity? If we accept the service provider data at face value, the average price decrease was 5.7 percent and the average volume increase was 12.8 percent (for an elasticity of 2.27). If I subtract seven points of this as coming from trendline growth, the price-related volume increase drops to 5.7 percent, and the price elasticity drops to  $5.7/5.7 = 1.00$ . As demonstrated in our opening section, this elasticity figure falls below volume breakeven, consistent with historical trends: You need an elasticity of 1.39 to make up for the added marginal cost of the additional volume.

### Future Trends

How much relevance does this issue have for future telecom services? After all, most next-generation service providers aren't making elasticity arguments to justify new long distance plays. Rather, they're talking about next generation networks. On this note, Michael Kleeman, the CTO of Aerie Networks, which is building a new fiber-based national network, indicated at NGN that the elasticity of demand for intercity bandwidth appears to be in the 1.05–4.00 range. This is the basis for Aerie's stated intention of dynamiting the current price structure in the transport market: Whatever they discount, they insist they'll make it up in volume.

The rationale for high next-generation telecom elasticities? Arguably, in a new market with high initial prices, price elasticity should be fairly high, for two reasons:

**Table 2 Reported Domestic LD Data (From NGN)**

	Volume Percent Change	Price Percent Change	Elasticity
1985	15	4.5	3.33
1986	15	9	1.67
1987	14.5	12.5	1.16
1988	12	4.5	2.67
1989	15.5	7	2.21
1990	10.8	1.25	
1991	7	2	3.50
1992	9	1.5	6.00
1993	8	2.5	3.20
1994	14	4	3.50
1995	15	4.5	3.33
1996	16	5	3.20
1997	22	12	1.83
1998	7	2.5	2.80
<b>Average</b>	<b>12.86</b>	<b>5.68</b>	<b>2.26</b>

Source: Signal Lake extrapolation from Service Provider data

■ As any marketer will tell you, to get new users to try a product, you need to stimulate potential buyers. Price discounts are a way to get people to try a new service.

■ In the early period of a new technology, when prices are high, price discounting could represent a significant savings for most consumers. Take DSL service. At \$200 per month for SDSL, you won't get all that many takers. Cut the price to \$90–100 and

you start to get lots of SOHO users. Cut the price to \$50 and you get lots of consumer users. Cut the price to \$20 and you rationally should replace most switched dialup ISP accounts.

This having been acknowledged, there are some important reasons why a cut price/add volume strategy might *not* be valid for the long term. First, in a market that has multiple players, each with equivalent plants and very low marginal costs, an aggressive price discounting strategy might simply result in prices dropping to marginal costs. At marginal cost prices, incremental volume doesn't help the bottom line.

Even without destructive competitive discounting wars, there are reasons to believe that high short-term elasticities won't last forever. To illustrate this, let's keep going with our DSL progression. If we go from \$20 to \$10 for service, this represents a 50 percent decline, the same as a drop from \$200 to \$100. However, can anyone seriously argue that the percent volume increase should be the same for a \$10 discount per month versus a \$100 discount?

Looking back at domestic long distance-telephony elasticity, we think that's exactly what happened. When the price of domestic long-distance service goes to 5 cents per minute, dropping it to 4 cents won't seriously change anyone's dialing behavior.

### Conclusion

There may well be some short to medium-term high elasticity of demand for advanced new services. However, its effect probably isn't sustainable long term; pricing based on demand elasticity is a short-term tool. If marketers want to create a business with sustainable advantage, they'll need to do it on some other basis □

#### Companies Mentioned In This Article

Aerie Networks [www.aerienetworks.com](http://www.aerienetworks.com)  
 AT&T [www.att.com](http://www.att.com)  
 Worldcom [www.wcom.com](http://www.wcom.com)