

# NGN Services Pricing and the Virtues of Simplicity

Andrew Odlyzko

Director, Digital Technology Center

UNIVERSITY OF MINNESOTA

[odlyzko@umn.edu](mailto:odlyzko@umn.edu)

[www.dtc.umn.edu/~odlyzko](http://www.dtc.umn.edu/~odlyzko)



If the question is:

How does one make money from  
usage-based billing and  
quality-differentiated services?

The answer is:

One doesn't.

**Revenues and profits will come from  
edge-services (outsourcing, etc.)**

# Arguments supporting this view:

1. Technological (internet pushes intelligence but also costs and complexity to the edges.)
2. Analogies with other industries (PCs, magnetic storage, ...)
3. Historical Trends (main focus of this presentation)

# Historical record of communication services:

- Quality Rises
- Costs Decrease
- Usage Increases
- Total Spending Increases
- Prices Become Simpler

Long historical record of denigration of flat-rate prices and utter incomprehension of their advantages, as illustrated by two quotes, a century apart:

Although flat-rate continues to be the predominant form in which Internet access is sold, that form of pricing is unviable. Flat-rate pricing encourages waste and requires 20 percent of users who account for 80 percent of the traffic to be subsidized by other users and other forms of revenue. Furthermore, flat-rate pricing is incompatible with quality-differentiated services.

Pravin Varaiya, abstract of  
INFOCOM '99 keynote lecture

...that, so far as large cities are concerned, unlimited service is unjust to small users, favors large users unduly, impedes expansion of the telephone business, tends to inefficient service, and that, as a financial proposition, is unsound.

1905 NYC study

# International comparison of telephone industry revenues and usage in 1998

Country	Revenues as fraction of GDP	Minutes of phone calls per person per day
Finland	2.88%	17.8
France	2.00	10.9
Sweden	2.06	20.7
Switzerland	2.83	14.1
U.K.	2.87	12.7
U.S.	3.05	36.6



# U.S. Postal Service rates for first class mail

Year		Price
1799	Single Letters	
	≤ 40 miles	\$0.08
	41-90 miles	0.10
	91-150 miles	0.125
	151-300 miles	0.17
	301-500 miles	0.20
	Over 500 miles	0.25

Year		Price
1845	Single Letters	
	≤ 300 miles	0.05
	Over 300 miles	0.10
1863	First half-ounce	0.03
1885	First ounce	0.02
1999	First ounce	0.33

# CompuServe Pricing with Internet Access in the U.S. Feb. 1995

Monthly membership fee and on-line charges	\$9.95/month: \$4.80/hour for extended services
Free hours included in on-line pricing	Unlimited access to 120 basic services
Electronic mail	90 three page messages were included; extra charge for internet mail
Internet access	3 free hours; \$2.50 for each additional hour

First defense of flat rate pricing in conventional economic terms (as a form of bundling, which serves to reduce consumer surplus):

Fixed fee versus unit pricing for information goods: competition, equilibria, and price wars, P.C. Fishburn, A.M. Odlyzko, and R.C. Siders, *First Monday* 2(7) (July 1997).

Also references to Bell System studies of non-economic reasons for public preference for flat rate.

“What was the biggest complaint of AOL users? Not the widely mocked and irritating blue bar that appeared when members downloaded information. Not the frequent unsolicited junk e-mail. Not dropped connections.

Their overwhelming gripe: the ticking clock. Users didn't want to pay by the hour anymore.”

“Case had heard from one AOL member who insisted that she was being cheated by AOL's hourly rate pricing. When he checked her average monthly usage, he found that she would be paying AOL more under the flat-rate price of \$19.95. When Case informed the user of that fact, her reaction was immediate.

‘I don't care,’ she told an incredulous Case. ‘I am being cheated by you.’ ”

From “aol.com: How Steve Case Beat Bill Gates, Nailed the Netheads, and Made Millions in the War for the Web,” Kara Swisher, 1998.

## Planning the Digital Smorgasbord

For This Media Conglomerate, the Future Is All-You-Can-Eat

By SETH SCHIESEL

Gerald M. Levin, the chief executive of AOL Time Warner, is not an effusive man. To begin a recent interview at the company's Manhattan headquarters, he was asked about his company's vision.

"Subscriptions," he said. Full stop.

Asked, gingerly, about the sorts of subscriptions he had in mind, he responded simply.

"Everything," he said, still sounding a bit bored. "Anything you want to name."

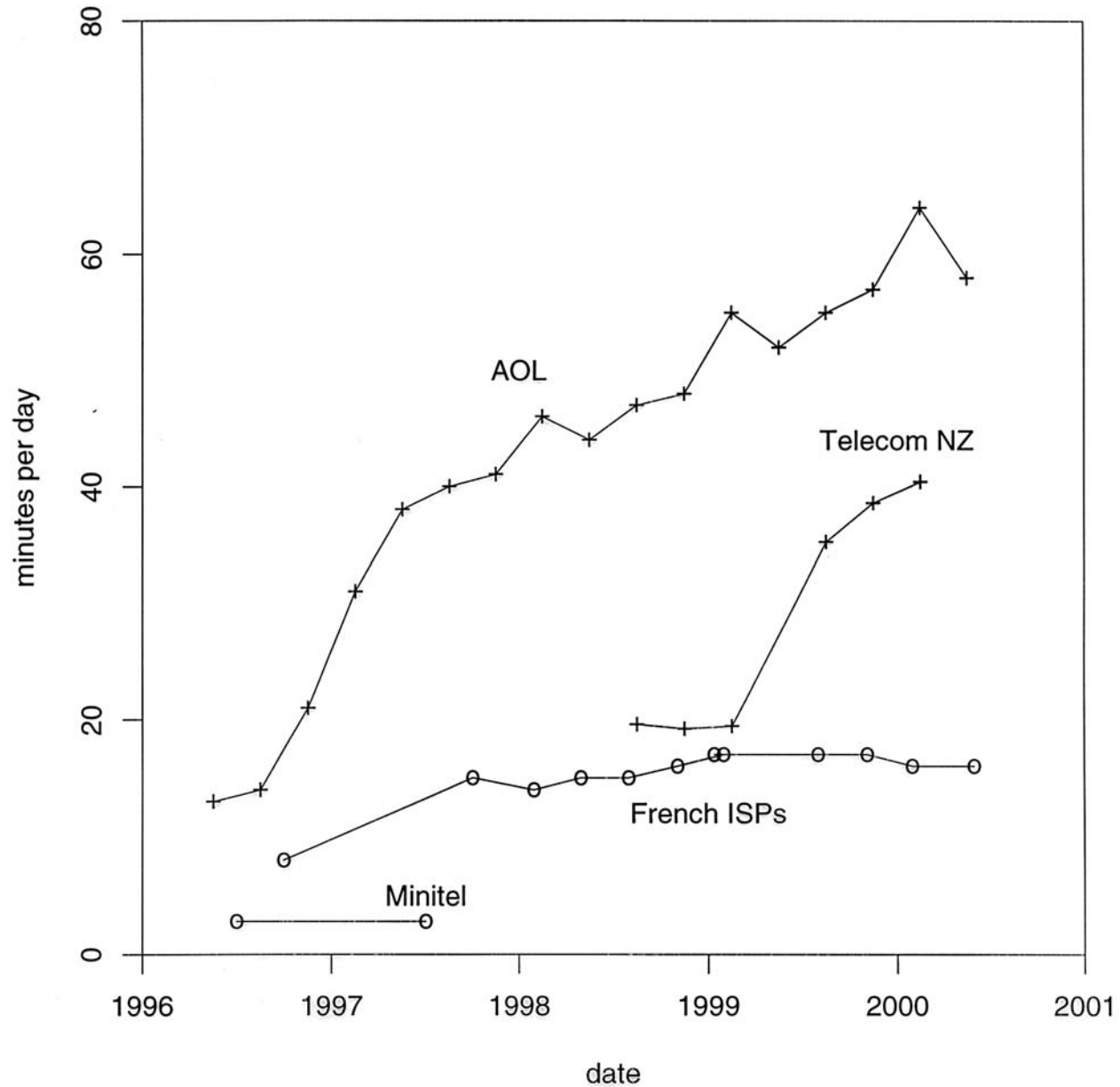
A few minutes later, though, his ennui faded as he began describing a new project, one meant to be a harbinger of his company's future. It is a future in which the union of America Online, which helped pioneer "all you can eat" Internet access, and Time Warner, which lives on magazine renewals and cable subscribers, delivers a media smorgasbord to every home in the nation.

[Elsevier's] goal is to give people access to as much information as possible on a flat fee, unlimited use basis. [Elsevier's] experience has been that as soon as the usage is metered on a per-article basis, there is an inhibition on use or a concern about exceeding some budget allocation.

K. Hunter of Elsevier, 2000



# Subscriber time online as function of pricing



#1 imperative when technology is increasing bandwidth:

*Induce Customers to Increase Usage*

Flat-rate pricing is the most effective tool known for stimulating usage.



For further information and greater details, see the selection of papers found at:

[www.dtc.umn.edu/~odlyzko](http://www.dtc.umn.edu/~odlyzko)



For further information and greater details, see the selection of papers found at:

[www.dtc.umn.edu/~odlyzko](http://www.dtc.umn.edu/~odlyzko)

