"HOW'S FREE? DOES FREE WORK FOR YOU?"
INDUSTRY BATTLES FOR MARKET CONTROL MISS THE CONSUMER'S "LIBERATION" OF DISTRIBUTION

The communications industry continues to obsess over the latest technology, competitors' moves and market-share battles. These obsessions have distracted them from consumer practices, at least one of which – personal distribution networks – should get their full attention.

Consumers are using new software and the Internet to develop their own ways of delivering content to whoever may be interested, and each of their efforts eats away at either audience or financing of mainstream media. Consumers have developed free-ad networks, free-call systems, podcasting, freenets, peercasting and even a "Darknet."

These developments have resulted in several industry effects and actions: Security as Quaint, Death by a Thousand Cuts, (Price) Tending to Zero, and Zero Plus Something (at least gets their attention). Overall, distribution channels are proliferating, and as in any industry with a proliferation of suppliers, price pressures are mounting. The fact that these latest "competitors" (e.g., personal distribution networks) are not on the industry's radar screen does not mean that they could be any less impactful down the road.

The Industry's Obsessive Focus

At the recent 2005 International Consumer Electronics Show in Las Vegas, the show's usual superstar, hardware, made room for content and its delivery. "This year's event," crowed one industry publication, "was less about unveiling the next great gadget and more about sharing digitized content among disparate entertainment peripherals." Or as Ted Cohen, EMI Music's senior vice president explained, "Everything about this show is about interconnectivity and interoperability." (*Billboard*, 1/22/05)

The odd thing about this new market-hot topic of content and interconnectivity is that **consumers started down that path years ago,** when the industry

was aflutter with "convergence" hardware (see "Consumer Wants Versus Industry Offerings: The Communications Industry Hits Another Inflection Point," **IF 2419**, 7/24/03).

While the electronics connectivity crowd regrouped in Las Vegas, content representatives were well into another blitzkrieg of legal briefs. The Recording Industry Association of America (RIAA) sent 85 colleges John Doe subpoenas ordering them to stop students from using high-speed campus networks to download copyrighted music. The group then filed another 717 suits against individuals. Meanwhile, the Motion Picture Association of America (MPAA) launched an "education" campaign to halt the rapidly rising practice of file-sharing motion pictures. The MPAA said it would soon file lawsuits against the most egregious illegal file sharers. Like the RIAA, the MPAA sees colleges as the source of most of their problems, and they started sending e-mails to college officers probing what they know and putting them on notice that the industry would get more aggressive in the months ahead. (*Chronicle of Higher Education*, 1/14/05; *Reuters*, 6/15/04 and 1/27/05)

While content and interoperability ruled the glorious desert days of the Consumer Electronics Show and while representatives of content turned increasingly to the scorched-earth policy of litigation, the practice that could well affect profitability for many of the companies involved in these events was steadily spreading among consumers: personal distribution networks.

Changes? We've Got Changes

The whole entertainment industry, from content providers to distributors to hardware manufacturers, has become obsessed with the latest technology, the competition's latest offering, and battles for market share. Consequently, they might be excused for missing something so far removed from their obsession as individual distribution networks. Although they might be excused for reasons of distance, they might not be excused from the eventual impact of this seemingly distant development. Here are a few of the things that keep industry players so distracted.

Faster, Cheaper, More – Netflix and TiVo announced plans to start a service that delivers films digitally to the home black box for viewing whenever it is convenient. Not only are these companies accelerating delivery, they are lowering prices. Meanwhile, store-based delivery systems are countering the online delivery offer by changing policies to permit "unlimited" borrowing rights with "no late fees." (*Newsweek*, 9/13/04; *Tech-living.com*, 9/04)

Verizon is converting its network to packet switching. A single 100-centimeter-by-60-centimeter packet switch can handle the same number of lines as a 10-meter row of digital circuit switches. These switches are enabling Verizon to provide "optical network terminals" sending up to four telephone lines, television service and 30 megabits per second of data into homes in Keller (TX), Tampa (FL) and Huntington Beach (CA). In 9 states, Verizon is offering fiber-based Internet access with speeds up to 30

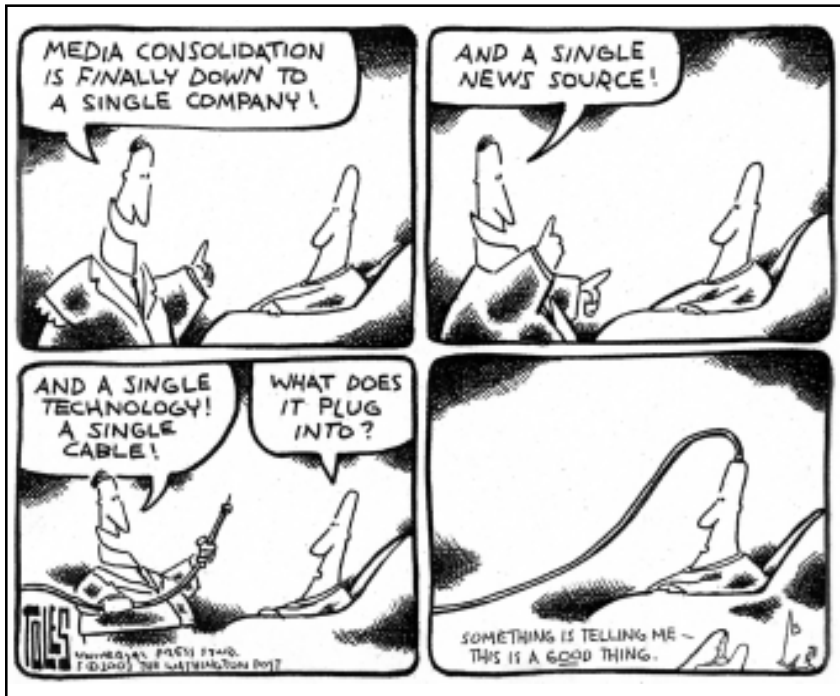*"The big news around here is that Ned's gone all digital."*

megabits per second (digital subscriber lines (DSLs) move less than 3 megabytes per second). Verizon hopes to expand the fiber offering to more than 2 million customers by year's end. (*International Herald Tribune*, 2/1/05; *Technology Review*, 12/04; *Builder*, 1/05)

SBC Communications and BellSouth, as well as Verizon, plan to accelerate deployment of fiber to

the home, a technology that would greatly enhance their ability to deliver video over telephone lines. SBC said it has already started testing such systems in three unnamed communities. (*Multichannel News*, 12/24/04; *Atlanta Journal & Constitution,* 10/23/04)

Industry Horse Races – For the first nine months of 2004, cable systems lost 300,000 basic consumers, and direct-broadcast satellite gained 1.45 million customers. (*Multichannel News*, 11/1/04)

Sirius Satellite Radio said subscriptions to its advertisement-free network of broadcasting surpassed the 1 million mark, while competitor XM Satellite Radio Holdings said its subscription base had passed 3.1 million. XM radio, which delivers 68 music channels and 33 sports, talk and entertainment channels, announced that it had completed broadcasting deals with National Public Radio and Major League Baseball (for all games).

Sirius, which provides 65 music channels and 46 sports, talk and entertainment channels, said it had signed contracts with Howard Stern and the National Football League (for all games). (*Associated Press*, 12/27/04; *Dallas Morning News*, 12/15/04)

Spaceway, a project within DirecTV to deliver broadband via satellite to the home, has shuttered operations. In March, EchoStar will offer video-on-demand to its satellite customers and then add an interactive shopping channel, a horse racing channel (complete with betting), and a karaoke channel. In the second quarter of last year, Comcast added 549,000 new high-speed-data customers, and it added 341,000 digital-cable subscribers. Cox set a new record for itself by adding 184,000 new high-speed-data customers in the same time period.
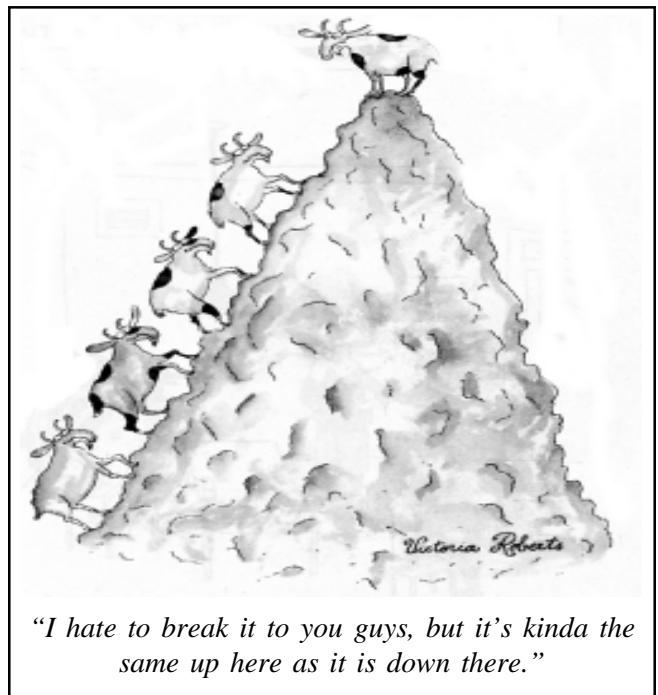
Meanwhile, the U.S. Federal Communications Commission (FCC) adopted a rule change that will allow electrical companies to provide broadband service through their grids. Establishing such a service would cost energy companies roughly $120 per home, compared with nearly $1,000 for cable and DSL. Already Cinergy,

"I hate to break it to you guys, but it's kinda the same up here as it is down there."

an American power company, is offering broadband through its electrical grid in Cincinnati for a price between $30 and $50 per month. (*Multichannel News*, 11/1/04 and 1/10/05; *Fortune*, 11/15/04; *International Herald Tribune*, 10/3/04)

New Offerings – In early 2004, the FCC ruled that companies providing computer-to-computer telephone connections can operate under a different set of rules than standard phone companies. So-called voice over Internet protocol (VoIP) allows customers to use their computers with a broadband connection to access the standard telephone network and reach any phone in the world, at prices related to Internet bulk charges. Long-distance service providers (*e.g.,* Sprint, Verizon, Qwest, and AT&T) have added VoIP services and are partnering with cable companies (*e.g.,* Adelphia, Cablevision, Comcast, Cox, Charter and Time Warner) to offer complete phone services to their customers. Individual customers can link to VoIP-service providers, such as Vonage, to lower monthly phone bills from $140 to $25, as one customer, Jagger Kaye, did in Edison (NJ). "The most important thing," Kaye noted, "was price. That's what got my attention, and that's what's keeping me." (*New York Times,* 2/13/04; *Multichannel News*, 9/6/04; *U.S. News & World Report*, 2/2/04)

U.S. wireless providers are finally launching their much-discussed third-generation (3G) technology. Verizon's Vcast, its 3G system, will soon start beaming segments from programs on the Comedy Channel, VH1, CMT and Nickelodeon to its wireless subscribers. In the third quarter of last year, a broadband-to-cellphone service generated $300 million in business for Verizon Wireless, roughly 4.7 percent of its overall sales, while at Sprint, data transmission capabilities doubled in that time period, generating 8 percent of that company's typical customer bill. (*Newsweek*, 4/26/04; *Multichannel News*, 1/10/05; *International Herald Tribune*, 12/13/04)

Wireless local area networks (WLANs), such as wireless fidelity (Wi-Fi), have expanded the range of connections to the Internet, with companies like Starbucks and McDonald's providing wireless Internet connections for their customers, typically for a fee. But Wi-Fi facilities can relay signals only several hundred feet, necessitating additional strategically placed transmitters. Wi-Max, on the other hand, beams a similar signal up to 30 miles at a rate of nearly 70 megabits per second,

enabling a single tower to deliver broadband connections to entire towns. Among other conveniences, Wi-Max leapfrogs "last mile" problems that telephone systems encounter and delivers "big pipe" capacity straight to the home. Philadelphia will soon construct a Wi-Max network that will for a small fee provide broadband access to everyone in the city. Wi-Max technology should be readily available by year's end, and Intel is embedding the technology into its new chips. (*Popular Mechanics*, 12/04)

"At this point maybe we're just not ready to commit to a Wi-Fi enabled Linux-based pasta machine."

These actions highlight the intense competition under way, and they explain the industry's obsession with trying to stay ahead of known competitors. One company discovers a new technology and pushes ahead, only to be caught and passed by another competitor with another new technology. Yet, most are blind to changes outside their immediate area of concern.

In addition to obsessive searches for new technology, several segments of the industry are confronting heretofore unknown competitors. For instance, the traditional contest between cable and satellite services for video distribution now has a new and formidable competitor in electricity companies. Also, long-distance and standard telephone services must now compete with Internet-based phone services. In addition, the ongoing battle between cable and telephone companies to provide broadband service must now open another front to combat the deployment

of Wi-Max by wireless service providers. As if the cellular phone industry needed another competitor, European discount airlines, such as RyanAir and Virgin, are taking their business model and applying it to the cell-phone business. Another new arena of competition, VoIP over Wi-Fi – a wireless cell-phone protocol that connects phones to the Internet – could soon put immense pricing pressure on cell-phone service providers. (*International Herald Tribune*, 2/5/05)

These are significant changes in each industry's competitive picture, and they have captured the attention of industry players. For example, at the conference of the Society of Cable Telecommunications Engineers (SCTE), speakers warned attendees that regional Bells are advancing from the rear with fiber optics and new interactive-television technology. One speaker spoke of the advances in Wi-Max and why that could pry customers loose from cable attachments. "The shift to personal broadband is what's next," intoned another speaker. (*Cable Digital News*, 2/1/05)

"Next" is the industry's perspective. "Already happening" is from the consumer's perspective. All the industry concern expressed at the SCTE conference and all the intriguing devices featured at the Consumer Electronics Show still miss what is happening at the consumer level. The long-term change that has the potential to have the largest industry impact is taking place away from the attention of MPAA lawyers, SCTE engineers and most industry executives. What we have called the New Industrial Revolution, in which power

has first migrated from the producer to the distributor and eventually from the distributor to the consumer, has granted tremendous leverage to the end user. Based on recent observations, the end user is exploiting that leverage in distribution technologies.

Open-Source Distribution

While the industry frets over new competition and tries to deploy the latest in technology, more and more consumers are entertaining themselves by becoming their own distribution networks. Technologies have appeared to assist them in their quest, and they seem quite comfortable developing alternative networks that can distribute content, whether that content is conversations, essays, music, radio or television programs, software, games or classified ads. A closer look at the range of examples – listed here from the simplest to the most complex – might clarify how advanced these alternative networks are.

Free-Ad Network – The Internet site Craigslist enables users to publish classified ads for free. Avid followers post everything from apartment listings to job searches, and others search the sites for the availability of those items. A local assessment determined that the site, which started in San Francisco 10 years ago, is costing newspapers in the Bay Area alone between $50 and $65 million annually in lost revenue from employment ads alone. The network of local listings has spread across the U.S. and has now reached Europe, with sites in London and Paris. New sites have appeared in Amsterdam, Dublin, São Paolo and Bangalore. (*International Herald Tribune*, 1/17/05)

Free-Call System – VoIP allows individuals to make telephone calls via the Internet. Skype software enables them to make those calls for free. Skype Technologies makes the software available at no charge on the Internet, and with just a computer and a microphone, users can call other Skype users worldwide for nothing. If the user feels especially wealthy, he or she can use SkypeOut software to call any phone (landline, wireless or computer) in the world for 2 cents per minute. According to Skype, 10 million users in 212 countries have availed themselves of the system, with 600,000 of them using it at any given moment. (*Business Week*, 11/8/04; *New York Times*, 9/5/04)

Podcasting – Personal logs published on the Internet (called Web logs or blogs) have created an opportunity for would-be journalists to publish their thoughts for free. Now ipodder.net and podcast.net offer free software for would-be radio broadcasters to beam programming over the Internet. So-called podcasting, which is essentially an audio web log, gives the amateur programmer the tools to download programming from the Internet (*e.g.,* National Public Radio's "This American Life" is available for podcasting, as are BBC programs), or upload music, speeches, poems or anything else the individual podcaster wishes to write, read, perform or play. Podcasters intentionally appeal to niche or unique categories of listeners, filling the Internet with an endless array of programming choices, each of which may potentially distract the listener from a mainstream feed. (*Christian Science Monitor*, 12/10/04)

Freenets – Strategically deploying Wi-Fi technology, individuals can share their DSL or other broadband connection with an entire neighborhood. The process is simple: Wires link any single broadband feed to rooftop Wi-Fi transmitters, which send a signal across space to receivers on neighboring buildings. There, transmitters grab the signal and launch a local Wi-Fi network for that building. The system can handle 200 individual users at once, and entire neighborhoods can share Internet access, all virtually free. The entire Golden Hill neighborhood in San Diego uses such a network. A group of enterprising youth in New York City established a "guerrilla network," taking the original signal from one cable modem and spreading it throughout their apartment building. "It makes perfect economic

"Tonight on the Crime Station we present the top ten crimes of the year, as selected by you, the viewers."

sense," said one user. Recently, local governments have launched free-access Wi-Fi networks in places like airports (*e.g.,* Raleigh-Durham, Las Vegas). (*Newark Star-Ledger*, 9/20/04; *International Herald Tribune*, 9/1/04 and 1/10/05; *Information Week*, 1/10/05)

Peercasting – BitTorrent is one of the most popular peer-to-peer (P2P) networks ever. More than 20 million people have downloaded the software, and according to CacheLogic, an Internet-traffic-analysis company, fully **one-third** of all data sent across the Internet travels via BitTorrent. The software's appeal comes from its speed. It solves the problem of other P2P networks: offering fast downloads countered by slow uploads. All P2P interactivity slows to the speed of the slowest upload, thereby diminishing the usefulness of fast downloading capabilities. BitTorrent breaks a file into discrete packages and disperses them separately to many different computers. Thus, when asked to produce a particular file, it uploads the necessary pieces from many different computers at once and reassembles them in the destination computer, thereby matching in upload speeds the high-volume pace of downloads. First introduced in 2002, BitTorrent originally served software code writers who wanted to share large Linux programs online. It soon migrated to the game companies, who needed a great deal of volume and speed to exchange code-heavy games. BitTorrent eventually found its way to downloaders of movies and music, thereby enabling what has become next-generation broadcasting.

Essentially, BitTorrent turns the Internet into a huge TiVo that enables individual users to capture specific pieces of movies, songs or programs and reshape them as they see fit. Then these would-be consumer broadcasters can "stream" (transmitting in real time) that reworked or personalized program on the Internet, as if they were professionals. The "peer" part of the broadcasting results when many different users linked by BitTorrent allow their computers to house some small piece of a larger whole, whether that whole is a movie or a song. The greater the number of peers participating in the peercasting system, the faster the sharing takes place because the more computers BitTorrent can access to upload a piece of the whole, the quicker the access, assembly and eventual download can take place. When Jon Stewart, the television comedian and host of the Comedy Channel's "The Daily Show," appeared on

CNN's "Crossfire" and essentially called the hosts "hacks," delighted BitTorrent fans grabbed the program piece off a TiVo and, using the new software, beamed the segment over the Internet to roughly 4,000 servers. Within a few days, Internet viewers who had downloaded the "Crossfire" segment exceeded the number of viewers who watched the original CNN broadcast (2.3 million viewers on the Internet to 867,000 viewers on cable). (*Wired*, 1/05)

"That thing you just said – I'd like to option it for a movie."

As individuals use capabilities such as Apple's iMovie and other production systems, these peercasting systems will have more and more content to put through their systems, and like podcasting, each line of communication takes another set of eyes away from mainstream media. The software and any resulting peercaster's program are free.

Darknet – The so-called "Darknet" has several layers of activity: insiders, who access an original file; release groups or packagers, who ready the file for distribution; topsites, which disperse files to many different computers; user pyramids, which massively reproduce and distribute the film; and P2P networks, which make the final version widely available. This underground system of movie, software, game, music and television program distribution moves millions of files each day. Estimates among Internet watchers suggest that the Darknet "distributes" more than 500,000 movies every day. That makes it **the largest "broadcast" system in existence**, fairly surprising since most people do not know it exists, a reality that pleases most of those who do use it.

What happened to "The Hulk" can explain how the Darknet works. Universal Pictures delivered a workprint of the film to its New York publicist, and an insider sent a copy to a group called SMF, which is a piracy "release group" assigned to package movies for distribution to the underground network. SMF compressed the film from 9 gigabytes, which is too large for rapid online distribution, to 700 megabytes, which fits on a single compact disc. SMF passed the compressed version to a topsite – one of many connected to the SMF release group. Within an hour, word had spread that "The Hulk" had reached a topsite, and from there, widespread copying started, with those associated with the topsite reproducing and dispersing files. Once the network had dispersed pieces of "The Hulk" across the vast array of connected computers, the topsite opened access to the files for the "dumps," the peak of a pyramid of copiers and transmitters. The dumps, with their huge networks of users who copy and transmit, sent "The Hulk" files tumbling down a pyramid of copiers and transmitters, picking up speed and spreading as it went. Within 24 hours, the single version of the film that landed on SMF's computer had become 50,000 copies. Within 72 hours, the film had landed in several P2P networks, and several hundred thousand copies had become available to students in colleges – and to anyone anywhere. (*Wired*, 1/05)

The New Reality and Some Implications

In November of last year, Bram Cohen, the mild-mannered creator of BitTorrent, spoke at a conference sponsored by the music industry's trade magazine *Billboard*. He told a session on file-sharing that the cost of bandwidth is going to zero and that the size of hard drives is reaching such volume that an entire library can be stored on a single hard drive. What struck Cohen was how unprepared the industry leaders were to hear what he had to say. "Content people," he noted, including movie industry leaders, "have no clue. I mean, no clue." (*Wired*, 1/05)

The same can probably be said of distributors. Many industry members still see their primary concerns revolving around already identified competitors, rather than recognizing a larger reality of unanticipated competitors rising around them, including free consumer-based distribution systems that can eat away at markets. The following effects and actions offer a "clue" as to what is actually taking place.

Security as Quaint – Hollywood has recently touted a new encryption system, renewable security (*aka* self-protecting digital content), that changes codes with each movie and stays "one step ahead" of hackers by communicating with a digital video display (DVD) player before loading and playing the DVD. (*Forbes*, 1/31/05)

The massive Darknet system has few hackers, if any. Nearly all of the system's supply comes from insiders – studio workers, projectionists, disc-stamping plant workers and others in the industry's enterprise. Darknet has "release groups" – those looking to secure clean copies – for movies, music, video games, software and television programming. Security for all of these, especially given the system's underground sources, may be futile.

Death by a Thousand Cuts – Enough small wounds to a company's market can cause serious financial troubles. The small but growing number of alternative distribution systems could provide just such torture. Not only are the podcasters, bloggers and peercasters themselves not watching or using mainstream media, they are also luring others away from mainstream media. Given the leverage and the expanse of the Internet, these alternative distribution systems represent serious alternatives, not because of their individual, minuscule numbers but because of their aggregate impact.

(Price) Tending to Zero – Newspaper subscriptions are declining, revenues from subscription ads are dwindling and new Internet-based competitors are faster and cheaper. Microsoft has reluctantly had to recognize the growing popularity of Firefox, a free Web browser that now has 17 million users. The whole mindset behind the appeal of Linux – that Internet use and computing systems should be free and everyone should be involved – is spreading to more and more distribution channels. "Metro" newspapers, recently offered in several cities, have followed that price trend line forward and provide their smaller, briefer and user-friendly newspapers for free. Such a giveaway marketing plan puts inordinate pressure on the distributor to find funding from sources other than end users, but it is, nonetheless, a signal that some competitors have sensed what is happening and are trying to respond. (*Dallas Morning News*, 11/2/04; *Newsweek,* 1/24/05; *International Herald Tribune*, 1/13/05; *Media Outlook*, 9/27/04)

So quickly has the free tabloid market developed that venerable old-culture newspapers such as *The Washington Post* and *Chicago Tribune* have launched their own versions. *The New York Times* recently bought 49 percent of the *Boston Metro*, a free paper that was eating away at the market share of *The Boston Globe*, which the New York paper owns. *The Washington Examiner*, a free newspaper that plans to compete directly with *The Washington Post*, has started appearing in driveways and mailboxes of 260,000 metropolitan households. Typically, free papers are given away at subway or bus stops, but the direct-to-home model threatens the last advantage held by traditional subscription-based journals. If this direct assault on mainstream media works, the *Examiner*'s owner, Philip Anschutz, plans to replicate it in as many as 68 metropolitan areas. (*Christian Science Monitor*, 2/3/05)

Zero Plus Something – Sony BMG recently broke with its industry and inked a joint venture a Grokster, the file-sharing network that has wreaked havoc on the music business, to allow free music sampling with paid downloads. The venture, called Mashboxx, will allow file searchers to download authorized sections of songs for sampling or whole copies of specific versions, which might include an advertisement at the end. (*Dallas Morning News*, 10/30/04)

Working with file sharers still sounds wrong to many content providers. So they might consider rethinking how they approach pricing. For example, the music industry has learned that the proper price for a song – say, 99 cents from iTunes – can result in a huge upswing in sales. Together, Apple's iTunes and Sony's Connect downloaded more than 200 million tracks in Europe and the U.S. last year, a ten fold increase over 2003. Thus, companies who rethink pricing might slow the pace of the pricing spiral to zero. (*International Herald Tribune*, 1/20/05)

The overriding implications of these phenomena are: First, advertisers have leverage, even as the power and reach of mass media continue to shrink. Nonetheless, with a proliferation of outlets seeking to attract sponsors, pricing pivots in the advertiser's favor. Second, expanding distribution channels, no matter how small each one is, put more pressure on mainstream distributors. Not only do they have unanticipated competitors, they have value-sensitive advertisers who want to pay less. They will need to devise effective strategies to resolve the twin pressures or find themselves in a situation of steadily shrinking margins.

Everybody's Doin' It

The proliferation of distribution channels has reached advertising itself. Charter Communications launched iWantMore! This channel will offer long-form advertising 24 hours per day for video-on-demand customers. Meanwhile, Cox Communciations started FreeZone, another video-on-demand platform for extended-length advertisements. Using ads from Coca-Cola, BMV, Volvo and Best Buy, FreeZone's test in San Diego proved successful, and Cox will expand coverage to more of its markets this year. (*Multichannel News*, 1/24/05)

Even though these are mainstream companies offering line extensions for advertisers, the message should come back to them:

"It's an experimental medicine. We're trying some at $14 and some at $49."

Distribution channels are proliferating, thereby dissipating the value of existing business propositions. More important, that proliferation now extends to individual consumers, who are becoming broadcasters using the Internet for distribution. When this small but growing free network of broadcasters reaches public awareness, mainstream distributors are going to have trouble sustaining their current business model. The industry's recent spate of mergers and acquisitions suggests the business model already has problems. Overall, distributors may need to think about the consequences of industry changes now and consider revising their model. Because if the question becomes "How's free?" the answer will be obvious.

"I'm going to put you on hold until I think of a good excuse to hang up."