

# Music on the Internet

## A Topographic Tour of the Online Music World

*This document contains excerpts of research report authored by Michael Tchong, editor of the ICONOCAST Internet marketing mail list (<http://www.iconocast.com>)  
The original document is [available in PDF format](#).*

## Market Dimensions

More than one million publicly-visible sites dot the World Wide Web today, according to Netcraft (see chart, right) from just 50 in January 1993, less than five years ago. This spectacular growth is matched by the 51-million plus North Americans who now roam the Internet according to Nielsen Media Research.

**Media Migration.** Energized by the very broad range of content these one million-plus sites provide, it's not surprising that the Internet is quickly elbowing its ways to the front ranks of popular media.

The May 1997 GVU7 Web user survey reports that 35 percent of respondents say they use the Web instead of watching TV on a daily basis. A recent Nielsen survey found the same to be true among America Online households who watch 15 percent less television per week than the national average.

While the TV-watching is still considerably higher than Internet and online usage, the sheer speed at which the Web is making inroads is having a profound impact on other media. According to a Young & Rubicam, San Francisco research report, the Internet will likely displace magazines as the fifth most popular medium by the year 2001 (see table, left). Source: July 1997 Netcraft Ltd. (<http://www.netcraft.co.uk/Survey>)

**Market Forecast.** As content providers respond to the market's enthusiasm, the Web is fueled by a propitious cycle of increasing content driving ever more usage and vice versa.

According to Jupiter Communications, 67 million households will be online worldwide by the year 2000 (see table, right), a veritable bonanza for cyberspace marketers. Online users tend to be better educated and better-off than other consumers, and can be efficiently reached via the Internet medium itself. As a result, an estimated \$267 million worth of Web advertising was placed in 1996 according to the Internet Advertising Bureau (<http://www.iab.net>). This is expected to soar to \$2.5 billion by 2000 says Simba. By then, advertisers will be able to reach as many as 340 million eyeballs (170 million Internet users) glued to Web tube estimates International Data Corp. (IDC).

If current growth rates continue, year 2000 surfers will have a choice of more than 4 million sites spanning the globe. The instantaneous, cross-cultural nature of the Internet will be an irresistible proving ground for all kinds of music. On any given day, at the beginning of the next decade, more than 80 million consumers will be cruising the Web, a ready target audience for the next big thing in music.

**Electronic Commerce.** More important to the budding Web music distribution industry is the fact that 15 percent of Internet users have recently used the Web to purchase a product or service (according to both IntelliQuest and Nielsen Media Research).

There is no question that the Web will revolutionize the music business and create captivating new opportunities in distribution, listener marketing, music fan research and CD sales. Before that can happen, a few short-term obstacles must be overcome. For one, 79 percent still use 28.8-Kbps modems. But as technology has demonstrated over and over again, speed issues are merely a matter of time. The Web's instantaneous, interactive and global nature has already recast the music business, as the following pages will vividly show. Source: 1996 A.C. Nielsen Worldwide Consumer Panel Services  
Nielsen Media Research reports that, among online buyers, 2% (or 148,500) bought music products the last time they shopped online.

## **The Music Business**

### **Changing Standards**

The appearance of the 10-inch 78, named after its rotational speed of 78 RPM, in 1901 marked a major turning point in modern music history. For the first time, music could be enjoyed, on demand, in the privacy of one's own home. But it wasn't until 1938 when Al Jolson recorded his first talkie, that modern music began its meteoric rise. Jolson's recording of Swanee vaulted the RCA Victrola into the imagination of the common American household.

### **Long-playing Records.**

A second milestone, was CBS Records' 1948 release of the first stereo-capable long-playing record (dubbed LP, 33 or "album"). That marked the beginning of the high-fidelity (Hi-Fi) era that lasted well into the sixties. In 1964, Philips of the Netherlands introduced the audio cassette, a format that together with the LP would dominate the music scene until the mid-eighties. Sales of record albums peaked in 1978 and began a gradual decline that accelerated once compact discs were introduced in the early 80s. Spurred by car stereo sales, the cassette became the delivery mechanism of choice by 1983 and sales peaked in 1988, with 473 million units shipped in the U.S.

### **Compact Discs.**

The most dramatic change in music delivery was the 1983 introduction of the compact disc (CD) player. Its digital recording technique, using 0 and 1 data bits, virtually eliminated the pesky quality-control problems of vinyl records, which were frequently plagued by annoying pops, clicks, hiss, and turntable wow and flutter.

While early compact disc protagonists, Philips and Sony, struggled at first due to a lack of software, it took the CD only five years to overtake album sales (see chart, left). In the mid 90s, album sales are making a very slight comeback, thanks mainly to "golden-ear" stereophiles who, to this day, consider the sound of CDs "too shrill." But the clearly discernable improvement offered by CDs set in motion a wholesale conversion of record collections, that energized the entire music business well into the 90s.

### **Music Videos.**

While MTV is often credited with pioneering music video, it was the USA Network that made the first video foray when it introduced Night Flight, a weekend program featuring music videos in June 1981. Two months later, Warner Amex Satellite Entertainment Company launched Music Television, or MTV,

the world's first 24-hour music video channel.

MTV clearly patterned itself after Top-40 radio, applying the same nonlinear, "short take" format that attracts teenagers and young adults. Its on-air announcers, dubbed "VJs," (video jockeys), hyped elaborate contests and promotions and developed playlists that showed great ingenuity in the manipulation of audience mood. MTV soon was recognized as an effective way to promote record sales and as a powerful medium for exposing new artists, such new artists as Duran Duran, Cyndi Lauper, Madonna and Men At Work. Source: June 1997 RIAA A Comparison of CD and Album Unit Sales Growth

## Music Market Growth

In 1996 , the U.S. music business recorded \$12.5 billion in annual sales, up less than 2 percent over 1995's \$12.3 billion (see chart, left). According to the IFPI, the International Federation of the Phonographic Industry, the global music business was worth about \$40 billion in 1995. This suggests that the U.S., with a population of roughly 267 million, accounts for 30 percent of the world's total music volume.

In contrast, between 1986 and 1994, recording industry sales more than doubled, from \$4.6 billion to \$12.1 billion according to the Recording Industry Association of America (RIAA). This made the sudden leveling in 1995 seem all the more pronounced. Some industry watchers blame the decline on the waning popularity of alternative rock, which fueled a good deal of the industry's growth at the beginning of this decade. The answer, however, may be more complex. It's more likely that sales are flat due to a combination of factors:

1. **Conversion Complete** The compact disc's 1983 appearance, fueled a CD replacement boom. Once consumers finished converting their LP collections to CD, growth declined.
2. **Aging Boomers** The 67 million baby boomers are reaching middle age. While this generation stubbornly clings to its Grateful Dead bootlegs and Calvin Klein jeans, the fact is that 64 percent of all music in the U.S. is purchased by people under age 35.
3. **Lack of Innovation** The all-time best-sellers list clearly shows the strong influence of aging baby boomers (see table, right), with seven out of 10 positions occupied by such 70s and 80s stalwarts as Michael Jackson, The Eagles, Fleetwood Mac, Led Zeppelin, Boston and Bruce Springsteen.
4. **The Web** The Internet has become an important pastime for the core music-buying demographic. This sudden phenomenon became extremely popular at the same time the music business began its decline. Coincidence? Perhaps, but there's no denying that the disposable income of the primary music-buying segment is under attack from this new diversion.

The RIAA provides additional evidence supporting these theories with a report that, while there were 14 percent more gold records (constituting sales of more than 500,000) awarded in 1996 than in 1995, platinum records (one million) were down 17 percent. And multi-platinum titles were down 20 percent. Source: February 1996 RIAA Growth of CD Sales and Other Recorded Music

## Traditional Distribution

The U.S. Department of Labor reports that 252,000 people are employed in the music industry. By comparison, an estimated 62 million amateurs practice music in the U.S. alone. Once a budding artist has convinced an A&R (artist and repertoire) executive or record producer to create a CD, the recording

begins its long journey to the consumer.

The music distribution channel has grown considerably more complex since its inception in the 30s (see chart, below). The emergence of consumer electronics chains (Best Buys, Circuit City, etc.), discount clubs (Costco/Priceclub, etc.) and mass merchandisers (Target, Walmart, etc.) has added a unique buying system for each channel, typically managed by a chainstore buying service. At the top of the food chain are:

- **Record Manufacturers.** Six major record labels, Bertelsmann Music Group, EMI-Capitol Music Group North America, MCA Music Entertainment, PolyGram Holding Inc., Sony Music Entertainment and Warner Music Group control 85 percent of the market. Besides manufacturing plants, these major labels also own distribution companies. Labels work with independent record producers who are responsible for managing costs, talent and recordings.
- **Record Distributors.** Next are record distributors, such as Valley Record Distributors, who work behind the scenes to fill music store shelves.
- **Record Clubs.** Nearly 17 million Americans belong to a record club. These clubs generate \$1.5 billion worth of sales annually, 80 percent of which is directly related to music. According to a recent survey by Strategic Record Research, 3 percent of consumers buy their music exclusively from record clubs. Another 14 percent buy from record clubs and stores. After a seven-year growth streak, record clubs saw their sales share decline to 15 percent in 1996 from 17 percent in 1995, according to RIAA data. The two largest outfits are Columbia House (8.5 million members), jointly owned by Sony Music Entertainment and Warner Music Group and BMG Music Service (8 million members), owned by Bertelsmann.
- **Record Retail Outlets.** "Active buyers" (those who have purchased at least three albums in the past six months) buy 45 percent of their recorded music from retailers, including Musicland, Tower Records, Virgin Records and Warehouse. Flat music sales led Minneapolis-based Musicland Group to lose \$194 million, while Dallas-based Blockbuster Entertainment is quietly converting most of its CD outlets to video-rental stores.

## Music Meets The Web

In short order, more than 32,000 Web sites devoted to music in one way or another have sprung up, making music one of the Web's most popular pastimes. A mind-boggling 24,517 artist sites alone compete vigorously to attract surfers with tour info, sweet, or acid, music sound clips and other artist minutiae.

Whether cyber citizens are interested in world music (97 sites), karaoke (18 sites) or girl bands (19 sites), there is a music site to fit their musical fancy.

It all started in Fall 1993, when a Santa Cruz, Calif.-based outfit, Internet Underground Music Archive, or IUMA, created an FTP site where people from all over the world could download music files via the Internet. To reduce audio files to a manageable size, IUMA compressed them with MPEG and made a free decoder available for downloading.

IUMA's lofty goal was to revolutionize the music business with digital delivery that circumvented traditional pressing plants, distribution networks, shipping and record stores. And because a listing on IUMA was free, content poured in from all over the world. Their music trailblazing landed IUMA on the pages of the San Jose Mercury News in November 1993 and even a gig on CNN.

The Mosaic browser allowed IUMA to spruce up its venue with graphics and quickly made the site one of the first destination points for music fans. Today, the seven-person company grosses nearly \$1 million annually and features more than 1,000 bands. Sony was one of the first Internet music destinations as seen here in 1995. IUMA's positioning tag line sums it up nicely: "The Net's first, free hi-fi music archive. Based on the growth in Yahoo music listings, 31 music Web sites are added daily, or about 930 new Web sites each month.

## Digital Performance Rights

In April 1995, BMI and On Ramp Inc., an Internet content provider and marketing outfit, reached an agreement for a music performance license covering the transmission of BMI music content in On Ramp's Internet programming. In the announcement, BMI said it believed that the On Ramp agreement was the first to cover musical performing rights on the Internet and the first to recognize that online transmission of music constitutes a public performance under the U.S. Copyright Law.

The BMI agreement granted On Ramp a blanket license, which covered unlimited access to the more than three million compositions in BMI's repertoire at the time, encompassing the work of more than 160,000 songwriters, composers and music publishers. The license was said to cover a variety of planned uses, including browsing, listening and transmission to consumers in the home. BMI claims to have executed more than 50 such Internet licenses (no data is available for the other services).

These agreements may be ground-breaking with respect to cyberspace, but they are business as usual in terms of collection methodology. The major performing rights organizations favor blanket licenses for Internet transmissions. The reason is simple: A reliable statistical surveying process of upward of 30,000 Internet music sites is well-nigh impossible. While surveying may be difficult, the Internet promises to force a complete re-evaluation of public performance payments. Technology is moving at lightning speed and, as later sections will show, it may be quite feasible in the near future to create a fairer metering system that measures actual usage and provides a more accurate gauge of royalty payments. The National Music Publisher's Assoc., and its licensing subsidiary, the Harry Fox Agency are mounting a legal campaign against Internet exchanges for tablatures, or "tabs," which are essentially song "blueprints" that use no notes, but graphically depict how the song should be played. In February 1997, the NMPA succeeded in shutting down Tab USA, a site hosted at Frostburg State University in western Maryland.

## Internet Music Delivery, Unplugged

There are two ways to deliver music via the Web:

1. **Streaming** Akin to "broadcasting" on the Internet, streaming plays music in real-time. This technology is closely identified with Progressive Networks who introduced RealAudio, a server and player solution in 1995.
2. **Download** Under this scheme, consumers download a music file for later playback. Unlike realtime play, downloading is not constrained by bandwidth, only available time, so files can be larger and audio fidelity greater.

Both systems rely in varying degrees on the following delivery mechanisms:

1. **Player** To listen to streaming audio, or to play any digital file that resides on a hard disk,

consumers need a player. The player deciphers delivered music files, which are compressed using a "codec (see below and player, right)."

2. **Plug-in** To enable instant playback using a browser, a plug-in is usually required. Each codec requires a different plug-in, which can complicate listening to music on the Web.
3. **Server** To enable the rapid delivery of music files, most delivery systems require a file server that is dedicated to serving audio files.
4. **Copy Prevention** To discourage consumers from liberally copying music, music delivery systems must offer "digital watermarking," a process that adds an inaudible "tag" to each file, to enable copy tracking.
5. **Codec** Because music files can be large, file size is reduced by using a compression algorithm. Also called "codecs" (COder/DECoder), these algorithms can compress files by as much as 11 times, greatly reducing transmission time. The trade-off is that as files are made smaller, sound quality suffers. The table at right shows the impact compression can have on file transmission.

With an estimated 10 million users, Progressive Networks has the most popular audio and video players on the market today.

Echoing Amazon.com, CDnow and N2K have both announced commission-style programs that reward sites for selling CDs.

Los Angeles-based Intersect offers a new monitoring service, MusicReport, which is designed to search for and report on the use of audio and video on the Internet.

MusicReport uses a proprietary technology, dubbed Audio Video Scan (AVS), that searches the Internet for MPEG (motion picture experts group) Audio Layer 3 (MP3), RealAudio and other file formats commonly used to deliver audio and video.

According to Intersect, more the 2,600 sites are currently involved in the distribution of pirated audio CDs. Illegal music downloads occur deprive artists and publishers of royalties paid on sales of copyrighted materials.

Intersect provides customizable reports, which identify file source, Internet service provider, domain name, plus a list of audio and video files offered by the site for downloading.

## Music Delivery Systems

Three companies offer music delivery systems:

1. **Cerberus** U.K.-based Cerebrus sells music from its Digital Jukebox site and recently released Virtual Pressing Plant (VPP), a stand-alone client/server package for music delivery.
2. **Eurodat** France-based Eurodat offers secure audio file transfer across the Internet and prevents unauthorized duplication via an anti-piracy mechanism that ensures that downloaded music can only be played from the server it was encoded on.
3. **Liquid Audio** Liquid Audio's end-to-end music delivery system includes an enhanced version of Dolby Laboratory's digital compression technology, digital watermarking, exceptional sound quality and royalty management. The software is also able to supply consumers with liner notes and cover graphics. With a 28.8-Kpbs modem, Liquid Audio can transfer a CD-quality, three-minute song in approximately 12 minutes. In addition, the player is capable of streaming a low-bandwidth version for music previews. A commerce package serves copy-protected files, logs

downloads and tracks royalty [payments].

## Digital Watermarking

One major hurdle record companies face in using the Internet as a distribution medium is the ease with which copies can be made of digital originals. To counter outright piracy, a number of solutions have been proposed, foremost of which is "digital watermarking." This technology is now offered by such companies as ARIS Technologies (MusicCode), Solana Technology Development Corp. (Electronic DNA).

A digital watermark consists of an inaudible piece of binary data that is randomly imbedded in an audio file. This watermark can contain a host of copyright information including an International Standard Recording Code (ISRC), user ID, acquisition and other royalty tracking information. When a copy of an original file is made, the watermark readily identifies it as a copy and provides information about original purchaser. This serves to deter wholesale copying of digital music, although it cannot prevent casual copying for personal use. Because watermarks are virtually impossible to remove without corrupting the original file, the system is virtually foolproof.

Liquid Audio, in concert with Solana Technology, have created a system that automatically adds digital watermarks to music purchased online (see illustrations, below). Liquid Audio's product suite provides all the tools needed for Internet music applications:

1. **Liquifier Pro** Liquifier is an Internet audio mastering tool that lets audio professionals edit, encode and publish Dolby Digital sound on the Internet.
2. **Liquid MusicServer** Internet sites use the Liquid MusicServer to store music prepared by Liquifier Pro and, in conjunction with a Web server, deliver music to consumers. It supports streaming (real-time delivery of music and associated media with no permanent storage for browsing) and download (music file transferred for permanent storage on a PC).
3. **Liquid MusicPlayer** Consumers use the Liquid MusicPlayer to preview (stream) and purchase (download) music from a Liquid MusicServer. The freely downloadable software displays text, such as lyrics and liner notes, and associated artwork, as music is played. It also enables music purchasers to write music permanently to a CD-Recordable player.

## The Future : Music on Demand

While downloading music can be accomplished fairly easily, what does the consumer do once music files have been received? There are two choices today, audio can be played back via the PC's sound system or, alternatively, music can be written to a CD-Recordable (CDR) disc in a standard audio format recognized by any consumer compact disc player.

The future for this music-on-demand market is virtually unlimited. The music retail channel is typified by "brick-and-mortar" outlets, which typically stock less than 30,000 CDs. A Virgin Megastore may carry as many as 100,000 titles. In cyberspace, CDnow offers 200,000 CDs. Still, labels have even larger back catalogs of out-of-print music that is simply unavailable.

Because retailers prefer to stock titles that will sell, music from independent record labels, obscure genres, International artists or older recordings stand little chance of being found in traditional music stores. Music on demand will radically change that scenario. By being able to choose from any artist at

any time, and customize CDs to their hearts' content, consumers will undoubtedly spark a music industry renaissance.

The critical ingredient for making music on demand a reality, an affordable CDR, is just around the corner. The price of CDRs has dropped below the \$300 mark and blank media is selling in the \$2 to \$4 range. The other constraint, bandwidth, is also making giant strides in the right direction. A 56-Kbps modem standard will greatly enhance surfing speed. This will be followed by a considerably faster technology, DSL, which will transform plain old copper telephone wire into a true high-speed, information highway.

Market research firm Jupiter Communications believes that the Internet will dramatically change the music industry over the next decade by giving merchants the opportunity to serve micro-markets, while permitting an unprecedented degree of relationship-building between audience and artists. Over time, says Jupiter, the Internet will render as artificial the distinctions between performance, broadcast and distribution. This will have dramatic implications for online sales of prerecorded music, causing it to soar from a minuscule amount today, to \$1.6 billion by 2002 predicts the market researcher.

What the music industry needs now is more informed marketers and better-educated consumers and that's what this Topographic Tour is all about.

Notes:

The table on page 21 shows that advances in codecs combined with faster modems will increase throughput some 1,326 times by 2003 compared to 1991. But even faster speeds are likely to be the norm by the millennium. According to the Gartner Group, 35 percent of all consumer Internet access by 2002 will occur at high speed, including ISDN (15 percent), cable modems (10 percent), xDSL (5 percent) and satellite (5 percent). This means that the 20 million consumers who will use a cable modem in 2002, will be able to download a CD-quality three-minute song in under 30 seconds. While even greater speeds are theoretically possible, it's very likely that richer music data files will largely offset gains achieved by the more sophisticated codecs of the near future.

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