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CommuniCast: Developing a Community-Programmed Webcasting Service

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**COMMUNICAST:
DEVELOPING A COMMUNITY-PROGRAMMED WEBCASTING SERVICE**

Plan and Samples Submitted for Internet Law Colloquium, Harvard Law School
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1. Introduction

In the early 90s I heard a new band, Uncle Tupelo, on the local college radio station. After purchasing their record and going to see their show when they came through Philadelphia, I was hooked by the band's ability to fuse punk and indie rock with traditional country and roots influences in a way that actually worked. Thrilled by my discovery, I went to the 'Net and searched (in my new Mosaic browser!) for more information about the band. I made several discoveries. The first was a number of pages discussing the band in depth – it turned out the record I bought was their fourth, and there were devoted fans around the country. Second, these pages discussed a bunch of other bands I'd never heard of, all members of a burgeoning movement known as "alternative country" or "Americana" springing up in the South and Midwest. Third, and most important, I discovered an email listserv called "Postcard" named after an Uncle Tupelo song and devoted to the genre. I subscribed immediately.

My experience with Postcard (now morphed into a listserv known simply as P2) was a revelation. The list was comprised of several hundred musicians, disc jockeys, critics, record-shop workers, indie-label staffers, and regular old music fans. The discussion each day, although ostensibly devoted to Uncle Tupelo and the alt-country genre, was wide ranging, with list members reporting on new bands they'd discovered and upcoming concert dates, discussing their favorite records, offering advice to "newbies" on the must-haves in the genre, and even debating the interpretation of a particular song, the politics of a performer, or the economics of the music business (to give just a couple examples). Always combative and extremely talkative (to the tune of 40 or 50 messages a day), the participants on P2 were at the same time remarkably respectful, intelligent, and friendly for a group who had never met in person and had no "real" relationships with one another except through daily emails.

But that (the "real" part, not the respect part) would change. Band members from nearby cities began using the list and the relationships they developed there to arrange for shared gigs. Friendships were struck up, and list members began to meet up at shows. Several especially devoted list members put together a three-day festival in St. Louis featuring P2 bands. Amazingly, over a hundred list members flew in to join the fun. Twangfest, now in its seventh year, routinely attracts the best bands in the genre and glowing press coverage from mainstream and alternative outlets alike. (Full disclosure/plug: my band, Buck Diaz, played Twangfest 5 in 2000).

Why do I begin with this story? To cynical friends who weren't a part of it, my descriptions of Postcard have always sounded a little weird, if not cultish. Who are these

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people, they ask? And what, exactly, is “alt-country”? Indeed, I myself have always been skeptical of utopian claims made about the Internet and its community-building potential. However, I share the story because P2 sold me on the idea it represented – an amazing example of what the Net has to offer to musicians and music fans, particularly those of genres that don’t enjoy the largess of major-label record deals or the exposure of mainstream radio. As the prototypical struggling musician myself, I relied on P2 for several years as a crucial source of community, support, friendship, and opportunities to share our music with people around the country (not to mention Australia, Sweden, Germany, and other countries represented by members on the list) – people who would never had known we existed were it not for the Net.

More to the point, it demonstrated the possibility, as of yet unmet, for a music delivery service that works hand in hand with and engenders the kind of community created on P2 and similar communities devoted to other genres. I always wished that P2 had an affiliated listening service (P2 Radio, if you will) to complement the amazing discussion that went on every day – a webcast, perhaps, where list members could post, listen to and sample all the great music being discussed. Although the listserv was populated by DJs, some of whom streamed their shows online on various websites, P2 members were by-and-large relegated to whatever broadcasts they could dial in at home or track down on the far reaches of the Net. Although list members were amazing at discovering new music, describing it for fellow list members, and comparing it to previous releases – year-end top-ten lists being a particular favorite for the Nick Hornby types – it was often hard for all but the DJs and record weasels on the list to obtain the music discussed, much of which was independently released and unavailable at local stores, without mail ordering and waiting days or weeks for it to arrive.

Online services proved just as frustrating – while various webcasting services offered a few alt-country stations, they seemed out of touch and generic in the worst sense of the word, especially when compared to the depth of expertise present on list. These webcasts rarely featured the variety of music discussed in the P2 forum (which had expanded to encompass traditional roots music and bluegrass on the country side, and roots rock and indie-rock the like on the rock side). Finding music by many of the artists required a separate search or a visit to their websites (when they existed).

P2 is just one of thousands of similar online communities organized and populated by dedicated fans of particular genres. Although P2 began as an email listserv, many of these communities now find a home on forums like YahooGroups, which use web-based bulletin-board setups to allow members to log in and conduct their discussions at their leisure and without having their email inboxes flooded with dozens of daily messages. Thus the opportunity arises: Is it possible to create an online service that unites these discussion communities with music delivery options that are directed by members of the communities themselves – that is, where the play lists are generated, not by professional programmers, or volunteer DJs, or by individuals, but by the shared effort of the community of listeners? Where the music selection grows organically as a product of the community and corresponds to what they’re talking about and their input?

To step back from specific example (which I hope has given a flavor that a more abstract description would not), imagine a webcasting service that:

- combines the best elements of P2-like community discussion forums with an integrated webcasting service directed and actually programmed by the members of the forum;
- is centralized, yet collaborative and non-hierarchical;
- is unmediated in the traditional sense – that is, not programmed by experts “from above”;
- implements a distributed “peer-production” model to handle the rating and reviewing and programming of music on the webcast, thus fulfilling the necessary intermediary function and allowing top scorers to rise to the top of play list;
- takes advantage of network effects to combine the small contributions and expertise of a large group to create an end-product no one service could produce on its own;
- incorporates a “reputational” rating system and meta-moderation developed in other contexts to ensure quality control and prevent ballot-stuffing, all without undue editorial intervention;
- recognizes that fans are skeptical of centralized, corporate, edited, money-making services.

It is this idea – what I’ve tentatively called “CommuniCast” -- that is developed in detail below and in the accompanying web-page mockups.

2. Industry Justification: Background

a. Music delivery revolutionized

Perhaps no industry (apart from the, ahem, “adult” industry) has been as affected by the rise of the Web as the music industry – certainly none has seen its traditional business model threatened in the way that the Web has confronted the hegemony of the dominant music labels. The revolution has proceeded on two fronts. The first, which has grabbed the lion’s share of the headlines and hand-wringing, is the advent of peer-to-peer file-sharing services like Napster and Kazaa. The second, which works hand-in-hand with the advent of digital technology more generally, is the dramatically expanded opportunity for artists to produce, market and distribute their music independently, inexpensively, and directly to listeners without the need for a record-company intermediary. While it is clearly the former development that most concerns the music industry establishment, it is the second matter which provides the service opportunity developed here. Musicians, music fans and critics alike have all celebrated the potential of the Net to allow artists to market their wares directly to listeners without the meddlesome and artistically questionable input of record labels.

The story, albeit somewhat stylized, goes something like this: In the bad old days, musicians who wished to make it in the music business were (with few exceptions) at the mercy of the labels who dominated the scene. The problem began with the massive costs of recording itself. Production of a professional quality recording required the use of costly studio facilities that an independent musician simply could not afford. Even if a musician were able to fund an independently produced album, record companies dominated distribution channels (primarily rack space in record stores) and, importantly, marketing channels (radio airplay and press coverage). A band’s only hope in this scenario was to get discovered and sign a contract with a label that would fund the production, distribution, and marketing of the record, as well as the costs of a tour to promote it. While various alternative, underground scenes existed, helped along by devoted fanzines and word-of-mouth publicity, the only realistic opportunity for making it in the music business was by running the major-label gantlet.

Moreover, few of those musicians fortunate enough to score a label deal really made any money from the effort; given the economics of the industry and the generally one-sided nature of deals between powerful record companies and desperate artists, only the biggest stars really ever sold enough records to recoup their contract advances and make a living from their artistic efforts. What was worse, especially for hard-core fans, was the aesthetic bargain implicit in such a regime: needing hits to drive enough record sales to cover the costs of all the acts who signed but never made a dime, labels inevitably focused on bland, saccharine, unimaginative fare that would appeal to the broadest demographic and offend no one.

Enter the Internet. With the popularization of the Net and the World Wide Web (coming shortly on the heels of the alternative/indie movement that crested in the late 80s and early 90s), musicians and music fans alike discovered a tantalizing new possibility – namely, that musicians now had at their disposal a direct route to music fans unimpeded by record-label intermediaries. The discovery was made possible initially by a somewhat older

trend: the continued development and democratization of digital recording technology, which made it possible for artists to record professional-quality product at a fraction of the previous costs. (Nirvana, for example, reportedly recorded *Bleach* for \$600.) As cheap recording technology solved the production problem, the Internet would solve the distribution and marketing problem.

In the pre-Napster, pre-broadband era, music loving cyber-optimists envisioned the web primarily as a marketing tool for previously disenfranchised artists. With the aid of a website and some song clips giving listeners a sample of the full CD, an unsigned band – however unpalatable to a mass audience, and hence to record company execs – could market itself to a suddenly enlarged world of listeners heretofore unavailable to them. More savvy acts could solicit online orders and advertise upcoming shows, maybe even scrape together a little tour. While the thirty math-rock fans in a band's home town might show up for a gig every month or so, the thirty math-rock fans in every other town in America – now within reach thank to the Web – represented a new and untapped pool of record-buyers and concertgoers. Just as important to this dynamic, of course, was the fact that math-rock fans in towns across America (and wherever else it is that they listen to math pop) were no longer limited to the two like-minded bands in town (if they weren't in the bands themselves). At their disposal was a powerful new tool for searching out and discovering new music from thousands of bands that they would never have known existed in the pre-networked world. Even the most vigilant fanzine couldn't offer this kind of coverage. The stage was thus set, in the eyes of many observers, for a revolution in music delivery.

But it hasn't happened. While the Web presented artists with the ability to interact directly with the music listening public, a problem remained: how to get them to find you in the first place. It became clear that while new technologies might cure the major labels' stranglehold on production and distribution, they didn't necessarily solve the marketing puzzle. An artist website is no good if no one visits it, or knows it exists. For all the venom directed their way, record companies played the very important role of filtering through thousands of demos and submissions from sub-par acts and directing listener attention, with the help of massive marketing budgets, at those who were deemed worthy of a recording contract. While this model involved some obvious aesthetic compromises in terms of the acts selected, it did have the virtue of market clarity and focus.

In this respect, the decentralization of the Internet and the ease of access for every band with a demo and web connection worked to its disadvantage. Who but the most diligent, dedicated music fans had the time and energy to comb the Net, with its notoriously low signal to noise ratio, for music worth listening to? The majority of music listeners are perfectly happy with the record companies and radio stations telling them what to listen to, and the celebration highlighted in the previous account likely represents a small slice of the listening public – namely, those people actually interested and personally invested in seeking out non-mainstream music, those who self-identify and prides themselves (without delving too far into pop psychology) on being fans of alternative genres.

It's not surprising, then, that those artists who have tended to benefit the most from the Web were not unknown bands, but "second-tier" acts who, despite never achieving large scale pop success or MTV play, do have deals with smaller, independent labels and somewhat established fan bases -- the kinds of acts whose ability consistently to sell thirty or

forty thousand records might not grab the attention of the majors, but nonetheless allows them to survive quite nicely on touring and sales. For these artists, with devoted fans looking for them (Amy Mann being the poster-child for this phenomenon), the Web has indeed been something of the bonanza observers hoped for.

Another development – also not surprising – has been the rise of new net intermediaries to direct listeners to new music. These included not only the creation of networked communities of listeners devoted to particular genres who share the “filtering” task (like P2, described above), but also a raft of webcasters, online journals, specialty retailers, and fan sites. In consumer arena, Amazon has participated in this trend with its popular affinity mechanism (“If you like this, you might like this”/“Other people who bought this also bought this”). In the webcasting field, listeners enjoy a wide selection of specialty webcasts (and radio simulcasts) programmed by experts in particular genres, and personalized services like Launchcast and MusicMatch, which use complex algorithms to tailor webcasts to individual preferences. While these services have become extremely popular and log millions of listener-hours each week, the programming model offers a somewhat limited choice: listen to what the DJ or sub-channel programmers choose to broadcast, or listen to the artists you plug into the service’s preference algorithm. Neither is necessarily a bad option, and the personalized services are making major strides by including music (following the Amazon model) that other listeners with similar tastes have selected for their personalized webcasts. However, the possibility discussed in the previous section once again arises – the possibility of a “bottom-up” webcast programmed not by an expert, or by the listener himself, but by a collaborative community of listeners sharing their expertise with each other.

3. Theoretical Insights

While hundreds of Net intermediaries have stepped in to fill the void described above, it is worth taking a brief look at what theorists of the Net have to say in this regard. As it turns out, their work supports not only the description of the industry described above, but sheds light on possible technological solutions and roles that community-based web intermediaries might play.

Academics and other observers have paid a lot of attention to the subject of what Larry Lessig (among others) refers to as “reintermediation” – the process by which the Internet ostensibly dispenses with the need for old-world intermediaries (basically large media corporations), only to witness their reemergence – or replacement by new types of intermediaries – in the online space.¹ While celebrated for its democratic openness, the issue of reintermediation on the Internet, according to Lessig, reflects “the flip side of the point that everyone can publish” – namely, that “[p]ublishers are also editors, and editors make decisions about what to publish.”² In other words, Internet users now confront a vast wilderness of online material without the benefit of an online “accuracy” compass directing them towards safe and reliable media outposts.³ “How can we reestablish credibility in this space,” he asks, “so that it is not lost to the loons?”⁴

To demonstrate his point, Lessig takes as his case study, not the music industry, but the news business. “We might have thought that the *New York Times* sold newspapers,” he explains. “But cyberspace is teaching us that it sells editing services that happen to be delivered on paper.”⁵ Substitute “record companies” for “publishers” and you arrive at the conclusion reached above. Lessig goes on to describe the “structures of reputation” and “institutions of trust” that the public has traditionally relied upon for credibility in the news – structures that give news from the *New York Times* a different meaning and level of “reliability” than news from the *National Enquirer*.⁶ When the ability to edit is disaggregated from the ability to publish in the online world, the “credentialing” function of these trusted institutions is imperiled.⁷

Lessig offers two solutions – one “top-down,” the other “bottom-up” – to the credentialing dilemma. The former, which essentially amounts to the transfer of hard-copy publishing operations onto the Web, would continue to use editors to make publishing

¹ See LAWRENCE LESSIG, CODE AND OTHER LAWS OF CYBERSPACE (1999).

² *Id.* at 171.

³ See Andrew L. Shapiro, THE CONTROL REVOLUTION 133-41 (1999) (discussing issue of veracity of Internet news sources despite boon of “disintermediation” and removal of “middlemen” to democracy and free speech). Shapiro points out that the “control revolution” has shifted the burden of “determining truth” to those who “consume information” from those who produce it. *Id.* at 136. In the context of music delivery via the Internet, we might substitute “value” or “quality” for “truth” to reach the same conclusion.

⁴ LESSIG, CODE at 172.

⁵ *Id.*

⁶ *Id.*

⁷ Shapiro refers to this phenomenon as “oversteer,” and argues that we need to rely more, not less, on “trusted intermediaries: people whom we entrust certain tasks because we recognize the value of their perspective, their expertise, their time, and their independence.” *Id.* at 188.

decisions.⁸ The latter, on the other hand, “would facilitate the construction of reputation – a measure of the significance of the speech that turns on who is actually uttering it.”⁹ Lessig suggests the idea of independent third-party “rating services” that would “credential” online publishers for skeptical readers. “An architecture of trust,” says Lessig, “would replace institutions of trust.”¹⁰ As suggested in the preceding section, existing webcasters have largely followed Lessig’s former strategy, while it is the latter, “bottom-up” model that is implemented into the CommuniCast service here.

Yochai Benkler offers a similar analysis¹¹ that supplements and supports this approach. Benkler starts with a basic description of the communication act, which he explains as involving three conceptually distinct functions: the “utterance” of a meaningful statement, work of art, etc.; (2) the assigning of “relevance” (a determination of its importance to a listener) and “credibility” (a determination of quality) to the communication; and (3) the actual distribution of the communication.¹² Like Lessig, Benkler observes that the three functions have tended to merge in traditional media.¹³ The primary purpose of Benkler’s article is to describe and elucidate the “commons-based peer production” of information products that has taken root on the Net, an environment which allows the peer production of “utterances” to scale to a size previously impossible in the non-networked world. Accordingly, he focuses on the open-source software development that has flourished on the Net and investigates how it gets produced by a disaggregated band of volunteers who work for non-pecuniary rewards. However, Benkler’s article also raises the tantalizing possibility that the bottom-up model mentioned by Lessig – namely, third-party ratings of “relevance” and “credibility” -- can be peer-produced as well.

Without getting too deep into Benkler’s formal economic model, he convincingly explains how peer production represents an alternative to more traditional modes of production -- hierarchically organized firms with employees operating under the direction of managers (developed most famously by Coase in *The Nature of the Firm*), and market-based models utilizing independent contractors following price signals. The gist of Benkler’s theory is that the Net allows a vast number of agents (e.g., programmers) to self-identify and apply their unique talents to a vast array of non-proprietary resources (e.g., programming projects) without the direction, interference or transaction costs of centralized management or individual contracting. The Net supports this effort in two ways: by providing a medium for communication and coordination between these independent agents, and by allowing projects to scale well beyond the size that would be possible for an individual for-profit

⁸ Shapiro advocates similar solutions in the news context: more trustworthy editors, third-party “truth watchers” like Fairness and Accuracy in Reporting, and “reputational” intermediaries. *Id.* at 189-91. “The lesson here . . . is that we don’t need to bypass middlemen so much as we need to reform them – or find new ones. . . . [W]ithout some guidance from intermediaries, [markets] become increasingly cluttered and difficult to navigate. . . .” *Id.* at 191. He extends the point to commercial goods and personal services online, noting that “sometimes a degree of freedom *from* choice can be as liberating as choice itself.” *Id.* at 192.

⁹ LESSIG, CODE at 172.

¹⁰ *Id.*

¹¹ Yochai Benkler, *Coase’s Penguin, or, Linux and The Nature of the Firm*, 112 YALE L.J. 369 (2002).

¹² *Id.* at 383.

¹³ *Id.* at 384.

enterprise. So long as the projects are modular (easily broken into smaller components), granular (broken into components small enough that they require only minimal work from a given contributor), and easily integrated (such that new modules can be readily added to the existing product), they are candidates for the peer-production model. Not surprisingly, quality control takes on a crucial role in the peer-production process: absent a process for screening the work product of contributors to the product (the usual province of managers in a firm), the entire project might be jeopardized by misguided or rogue participants.

Benkler's examples of the "self-conscious peer-production of relevance" include Amazon, Google, and the Open Directory Project. Amazon, for example, uses customer input about the media products it sells to provide "peer-produced ratings" that "harnesses peer production to provide one of its salient values -- its ability to allow users to find things they want quickly and efficiently."¹⁴ Similarly, Google's "PageRank" software ranks search results by the popularity of the target Web pages -- as measured by the number of other Web pages that link to each site returned by the search. (These "votes of confidence," as Benkler calls them, are in turn weighted more heavily if they come from sites that are themselves the target of links from many *other* sites -- a recursive twist common in the newer rating algorithms).

Benkler spends the most time, however, on Slashdot, reviewing its multi-layered user-moderation approach to assigning relevance and credibility to the thousands of comments posted each day. Because the rating/moderation mechanism in the "Slashsource" open source software serves as an important model for CommuniCast, it will be discussed separately below and in the appendix. For now, it will suffice to point out its crucial features: (1) posting of "stories" is open to all users; (2) rating and filtering of content is based on community-wide input and sharing of the work rather than selection by experts; (3) the moderators who rate other participants are themselves rated; (4) the system explicitly balances the desire to allow user input and the demand that users exercise responsibility and display some degree of participation to progress from merely reading stories and comments to moderating them; and (5) the stringent, multi-layered, redundant moderating process works to ensure quality, filter out junk, and preventing ballot-stuffing and hijacking of the system. In short, Slashdot's system appears to validate the possibility, as Benkler explains,

that the same dynamic that we observed for peer production of content can be implemented to produce relevance and accreditation. Rather than using the full-time effort of professional accreditation experts, the system is designed to permit the aggregation of many small judgments, each of which entails a trivial effort for the contributor. The software that mediates communication among the collaborating peers also contains a variety of mechanisms designed to defend the common effort from poor judgment or defection.¹⁵

To close, I would suggest a few points that we can take away from the preceding academic discussion:

- the continued role for intermediaries on the Net;

¹⁴ *Id.* at 391.

¹⁵ *Id.* at 397.

- more specifically, the demand for filtering and highlighting of quality material, and mechanisms that will help users determine its relevance and credibility;
- the possibility of bottom-up solutions: namely, peer-production of relevance and credibility;
- the caution that a peer-production model tends to work best where the project is modular and granular, and where contributions are easily integrated; and
- the additional caution that a peer-production model requires a strong quality control mechanism -- mechanisms which exist and seem to be working in various current web applications.

4. Description of Service

The following section, along with the webpage samples, details the functionality of the CommuniCast Service. As should be clear, it is premised explicitly on the insights of the preceding discussion.

A. The Basics

CommuniCast is a non-profit webcasting service where the members of genre-specific forums collaborate, through rankings, reviews, and discussions of music, to program the forum's webcast, share their expertise and new music with other members, and discover new music. Incorporating a robust ranking and reviewing algorithm, CommuniCast works to ensure quality control, respect for other participants, and a true feeling of community among members.

Several key principles guide the CommuniCast service:

1. CommuniCast is explicitly collaborative and community-based. It recognizes people's desire to participate in communities of listeners, to share with and learn from others, and to discover new artists without undue time expenditures.
2. CommuniCast stresses ratings, rankings, and reviews as tools to encourage participation and consensus building and as an outgrowth of the need for quality control in a decentralized setting; at the same, it recognizes these devices as something people in fact enjoy.
3. That being said, CommuniCast allows anyone to tune in and listen to a Forum webcast without the responsibility of participating. Users have the option to participate more extensively in a particular Forum, but don't have to contribute unless they want to.
4. CommuniCast offers a mix of Forum options, including open, genre-specific forums as well as the ability for users to subdivide into and create smaller, more specific groups.
5. Recognizing that the Internet has fostered the creation of thousands of listservs, discussion boards, and other types of groups, CommuniCast provides an option for these existing groups to create Forums and use the service as a sort of "sister radio station" for their group.
6. CommuniCast is envisioned as a non-profit site, although partnering and revenue opportunities exist, and may in certain cases (by providing links to specialty retailers, for example) be compatible with user desires.

Think Slashdot with songs and albums instead of stories. Or a non-profit Epinions with genre-specific forums instead of categories, songs and albums instead of products, and category-specific webcasts "programmed" according to the users scores and rankings.

B. The Specifics

This section is best approached by reading it while viewing the accompanying webpage samples. Please note that the webpages are just that – samples – and that no

programming has been done at this point. In short, there's nothing under the hood. However, it is hoped that viewing the samples will give a better feel of the intended CommuniCast environment. In addition, please note that this has been written with the assumption that the functionality described here can in fact be handled technically – I have made no attempt, at this stage, to confirm this possibility, but instead describe what I view as optimal from a user standpoint.

[Link to sample: http://cyber.law.harvard.edu/bps/communitycast/CommunityCast_Home3.htm]

The Forums

CommuniCast offers two types of Forums.

- CommuniCast features a small number of open forums dedicated to certain genres. Anyone can join an open forum and listen to its ForumCast.
- Members of one of the open forums can also form a member-created forum that is either open or invite-only, and moderated or unmoderated. This option is intended to attract existing groups (members of an email list-serve, for example) looking to establish a webcast for their community.

Participating in CommuniCast:

Anyone can enter an open Forum and listen to the webcast for that Forum. However, members who log in to an open Forum can score music from the Forum Playlist, participate in the Forum discussion board, upload music to the Forum Playlist, rate reviews and discussion comments, add other members to their trust list, and establish a vibe level of their own. These functions are all described below.

Uploading Music on CommuniCast

Music (at least once the service is up and running) will be uploaded by users of the service to one of two locations: The Community Pool and the Forum Playlist. The Community Pool is a master library of all music available to all forums. The Forum Playlist represents the music that is available for scoring, ranking and webcasting by members within a particular forum. Members of a given forum are the only ones who can add music to the Forum Playlist, either by uploading it from their own collections or from the Pool. A primary purpose of the Pool (and the bifurcated structure) is to allow a place for new artists (and potentially CommuniCast itself) to make music available to the various forums, while at the same time giving forum members the ultimate choice of what to add to their Forum Playlist. The “Quality Control” section, below, provides more information on how and when members gain access to the uploading function.

Scoring and Ranking

Scoring and ranking lies at the heart of CommuniCast, serving as a key indication for forum members of the collective tastes of their fellow participants and as the primary programming mechanism for the Forum webcast. It works as follows:

- Ranking Terminology:
 - Songs/Albums/Artists are **scored** and then **ranked** (1-100)
 - Reviews and discussion comments are **rated** for helpfulness/insight/quality (1-5) (discussed below).

- Reviewers establish reputation (**Vibes**) based on their comment ratings and their being trusted by other members (also discussed below).
- Who Votes?
 - Logged in members of Forum
- How/when do they vote?
 - By viewing the Forum Playlist and entering their scores for songs, albums, and artists listed there
 - While listening to the Webcast [see LaunchCast for an excellent example of this option]
- How many votes do they get?
 - One per artist
 - One per album
 - One per song
 - Users allowed to change
 - These votes also subject to daily/weekly/monthly limits (as described under “Quality Control” below)
- Score Scale: 1-100
- Rankings Score:
 - Average all 1-100 scores
 - Weight ratings based on member reputation ratings (see below)
- View of Rankings List (on main Forum page)
 - Separate listings for artist, album, and song
 - Listed by average score, highest to lowest, with number of votes
 - Ability to view by current week, month, year, and all-time “classics”
 - Counts votes only from that time period
 - Ability to filter based on number of votes (e.g., only show items that have received at least 10 scores by other members)
- What are Forum Classics?
 - Premise: While general rankings are intended to represent user scores over the last week, month, and year, the highest ranked songs, albums and artists can qualify as “classics” and thus be represented in the ForumCast
 - How does something qualify?
 - minimum score: 85 (or score representing top 5% of ForumPlaylist)
 - minimum number of votes: at least 60% of members
 - ongoing rating such that they can change/fall off/be added long after they’re current
 - reflects possible change in membership of forum

The Forum Webcast:

The forum webcast, or ForumCast, is the ultimate point of the service. It is generated from the Forum Playlist according to the song, album, and artist rankings of the forum, as follows:

- Selection:
 - From top-ranked songs (plays the song itself)
 - From top-ranked albums
 - chooses from songs available on PlayList

- plays both ranked and unranked songs from album, with highly ranked songs receiving more weight per chart below
 - From top-ranked artists: [same]
 - From “Classics” List: [same]
- Weighting:
 - Start with Song Score (minimum 10 votes) if available
 - If Song Score not available, use album score
 - Weight by:

(approximations)	Top 20 Ranked Song	On Top 20 Ranked Album	By Ranked Artist
Last Week	+5 points	+5 points	+2 points
Last Month (& not last week)	+3 points	+3 points	+1 point
Last Year (& not last week or mth)	+1 point	+2 points	+1 point
All-Time Classic (& not last yr/mth/day)		+2 points	+2 points

- If no song/album score or insufficient number of votes or below top-20 rankings cutoff in above categories: random selection (2 per hour) from:
 - top-ranked albums
 - top-ranked artists
- Limits:
 - Must meet sound recording complement of 17 U.S.C. § 114 (see more information below on Copyright requirements)
 - No two songs in a row from an artist
 - One song per artist per hour
- Provide link to view last three songs played.
- Issue: How will a song from the Forum Playlist play on the stream if it’s not ranked?
 - If it’s uploaded or scored a by a member with strong reputation, a song will be eligible for random play on the ForumCast. Otherwise, members will need to use the discussion list to encourage people to listen.

Discussion/Reviews:

In addition to the ForumCast and rankings, the third key feature of a Forum is its discussion area. The discussion forum will feature a fairly standard bulletin-board-like setup, allowing members to follow the discussion in a threaded, nested, or straight (chronological) format. In addition, members will have the option to click on any item in the rankings to read reviews and threaded discussion devoted to that item. As described in the next section, contributions to the discussion board are rated such that (1) members (as on Slashdot) can filter out comments below a particular score; and (2) members’ reputation (vibe) level is determined.

Quality Control:

Given the decentralized nature of the service and its reliance on member scoring and commentary, quality control is absolutely crucial. The following quality-control mechanisms are modeled largely on the reputational systems implemented by Slashdot and Epinions (both are outlined in detail in the appendix), and impact most of the preceding functions.

- Participation Limits (exact numbers TBD):
 - Limit participation to members (no “anonymous cowards”).
 - Limit members to a certain number of ratings of other reviews and comments per session/day/week/month.
 - Limit uploads per session/day/week/month.
 - Limit uploads based on Vibe level or time spent listening or participating.
- Song Scoring
 - Limit member score votes to one per song, album, and artist.
 - Restrict scoring to first 90% of accounts.
 - Require some minimal degree of participation or listening time to be able to score.
- Review/Comment Rating [similar to Slashdot]
 - Scored -1 to 5.
 - Comments by members with “hot” or “hip” Vibe start at 2.
 - Comments by members with lower Vibe start with rating of 1.
 - Comments rated by other members (with positive Vibes)
 - 2 positive votes for a review/comment: adds 1
 - 2 negative votes for a review/comment: subtracts 1
 - Limit member to one rating per review/comment.
 - Limit number of ratings total per session/day/week/month [similar to grant of five “mod-points” on Slashdot]
 - base this “quota” on Vibe Level
- Other Optional Controls:
 - Moderator backup
 - Invite-only backup
- Filtering and blocking options:
 - Low-rated reviews and comments can be filtered out
 - Members can block out others on their display
 - Rankings with fewer than __ votes can be filtered out
- Meta-rankings
 - Trust Function
 - Members can add other members to their trust list (as in Epinions)
 - limited to 5 per week, 20 total.
 - Reviews and comments by those you trust highlighted in some way.
 - Being trusted by others also impacts your reputation and thus the impact of your scores.
 - Not available for others to view.
 - Member Reputation:
 - “Vibe” level: hot, hip, neutral, cool, cold

- mix of being trusted and ratings of reviews/comments.
- Like Epinions “trust” and Slashdot’s “karma”
- New members start at cool
 - 5 positive votes for a review/comment: adds 1 level to Vibe.
 - 5 negative vote for a review/comment: subtracts 1 level from Vibe.
 - being added to trust list of 3 people: adds 1 level to Vibe.
 - member only sees composite Vibe level.
- Impact of positive Vibes:
 - the weight accorded your song scores.
 - the weight accorded your rating of reviews and comments.

Additional Features:

- Optional email to forum members with latest rankings.
- Optional email to forum members letting them know about new songs uploaded for Forum Playlist.
- Member Page:
 - Show all rankings in descending order
 - Show various filtering and blocking preferences
 - Show trust list
 - Show scores of your recent reviews/comments
 - Show your vibe level activity
- Downloads from new artists willing to sign waiver to allow people to download and sample for possible addition to Forum Playlist and scoring.

Copyright Issues

Obviously, copyright concerns are paramount when discussing a Web music service (and writing a paper for an “Internet Law” class...). Because the service will not include downloads or on-demand streams (except in cases where artists sign waivers allowing it), CommuniCast webcasts should qualify for the statutory license provided at 17 U.S.C. §§ 112 and 114. In order to qualify for the statutory license, the streaming program will incorporate the following limitations, which include the requirements of the § 114 “sound recording complement”:

- In any three-hour period, no more than
 - three songs (and not more than two songs in a row) from the same recording (or album);
 - four songs (and not more than three songs in a row) from the same recording artist or anthology/box set
- No advance programming schedules.

- Note: because of this requirement (and to ensure programming variation), the ForumCast has been designed so that it does not simply run through the song rankings in order.¹⁶
- No requests (such that the service could be considered interactive).
- The ForumCast will “reset” (i.e., repeat top-ranked songs) every three hours.
- Pass through of all identification information on the sound recordings.
- Display the name of the song, the artist, and the album while (but not before) it plays.
- Adherence to reporting requirements as required by SoundExchange.

[See 17 U.S.C. § 114(D)(2)].

The service will also implicate the following licensing concerns: public performance licensing for the musical works and sound recordings, and reproduction licensing for the uploading of server copies of sound recordings.

Musical work reproduction: Per the agreement between the National Music Publishers Association (Harry Fox Agency) and the RIAA, dated October 5, 2001, eligible webcasts need no mechanical licenses for server copies of musical works: “under current law the process of making streams that would qualify for a statutory license under Section 114(d)(2) of the Copyright Act does not involve the making or distribution of a DPD, and thus does not require a mechanical license.”¹⁷

Musical work public performance: CommuniCast will need to secure public performance licenses from ASCAP, BMI, and SESAC, all of which have well-established procedures for webcasts. Fees for these licenses total approximately 3% of revenues, with minimum fees less than \$1000. Because a small number of composers are not represented by the three main performing arts organizations, users will be instructed not to upload music by non-represented artists absent a waiver of liability.

Sound recording public performance: As an eligible webcaster under the § 114 statutory license, CommuniCast will be eligible for the rates negotiated under the Small Webcaster Settlement Act of 2002. Although the rates for non-commercial webcasters have yet to be negotiated (payments have been suspended until June 20, 2003), it can be expected that the rates will be comparable, if not less, to those negotiated between SoundExchange and small commercial webcasters in December 2002: 8% of revenues or 5% of costs (whichever is higher), with a minimum fee of \$2000.

Sound recording reproduction/ephemerals: Licenses for user uploads of sound recordings are covered under 17 U.S.C. § 112, which allows for one free ephemeral copy. Additional copies, as needed, are covered by the agreement referenced in the preceding paragraph. The agreement sets the royalty rate for ephemeral recordings at 9% of the fees paid for the public performance of the sound recordings, but this charge is included within the payment of the performance fees. Users, however, must be instructed that they may only upload music

¹⁶ An eligible transmission may not be “part of an identifiable program in which performances of sound recordings are rendered in a predetermined order.” 17 U.S.C. § 114(d)(2)(C)(iii)(IV).

¹⁷ See <http://www.harryfox.com/documents/FinalRIAAAgreement.pdf> for a copy of this agreement (section 8.1).

from “authorized” published recordings – that is, recordings that they have legally purchased. Any music that has not been published with the authorization of the artist will require a waiver.

CommuniCast will also be required to adhere to the SoundExchange reporting requirements formalized under the December agreement. Under these requirements, webcasters must provide reports detailing the featured recording artist, song title, album title, International Standard Recording Code (ISRC), copyright owner information, aggregate tuning hours, the start time and date for each sound recording.

5. Current Webcasting Services & Competition

The Web now features scores of webcasting services and thousands of individual webcasts from which to choose. Despite the wealth of options, CommuniCast represents a unique approach that will supplement existing services and webcasts, which can be loosely divided into the following categories.

1. *Retransmissions/Simulcasts of terrestrial radio broadcasts*

Online simulcasts of terrestrial radio stations, which run the gamut from large commercial stations to non-commercial and public radio offerings, are too numerous to list here. The model is simple: users visit the station webpage and listen to a multicast stream of its broadcast. These stations should be considered competitors to the CommuniCast service, particularly to the degree that existing terrestrial station programming matches that provided on a particular CommuniCast forum. CommuniCast's primary competitive distinction, hopefully obvious by now, is that the online simulcasts are programmed by individuals (or program directors, or national consultants) as opposed to the community-generated programming of the CommuniCast model.

2. *Internet-only broadcasts (no user input)*

These services are basically comparable to the terrestrial simulcasts, but are instead programmed exclusively for an online audience. Examples include Virgin Free Radio, which offers genre-specific sub-channels programmed by VFR staffers, and Live365.com, which allows hobbyists to program their own stations. These services differ from radio retransmissions in the sense that they are “branded” at the service-wide level, and offer hundreds of individual stations representing genre-specific listening options. They also differ from the CommuniCast model by focusing on centralized “expert” programming or programming by individual hobbyists.

3. *Internet-only broadcasts (personalized services)*

These popular services are somewhat similar to category two, featuring a centralized portal where listeners choose from specific genre-based channels. Their primary innovation is *personalization*, implemented through an array of affinity algorithms, artist and genre search features, and user ratings. In addition, these services are increasingly exposing listeners to music selected by *other* listeners who have similar tastes. On LaunchCast, for example, listeners (listeners who subscribe to LaunchCast Plus, anyway) can identify “influencers” – other users whose artist selections overlap with theirs – such that their webcasts include material from the influencers’ playlists as well as their own. LaunchCast frequently tops the Arbitron ratings, and its offering likely represents the largest webcasting market opportunity. However, the personalized features that are its strength also represent its weakness. In short, you get out of it what you put in – that is, music you already know you like. Despite the possibility of input from other users with similar tastes, the personalized streams rarely venture into new, undiscovered territory, and are particularly lacking in terms of new,

unknown, and independent artists. It is in this respect that CommuniCast has the greatest opportunity to distinguish itself from these popular offerings.

For reference, see Appendix C for a more detailed outline of the functionality of Live365.com and LaunchCast.

6. Next Steps

This preliminary plan has described the ideal operation of CommuniCast, its functionality, and its *raison d'être*. As explained above, I have avoided inquiring into its technical feasibility, its financial prospects, or its competitive opportunities. Development of this model into a full business plan will require the following next steps:

1. Financials: a full accounting of development costs, licensing costs, and possible revenue streams.
2. Technology: a thorough review of the technical demands of the service, including programming feasibility, server and database requirements, streaming options, etc.
3. Licensing: a detailed investigation of the exact licensing requirements, including legal/copyright implications of the model.
4. Marketing: a determination of the market viability of the CommuniCast service, including (1) market research and survey data assessing the desirability and market opportunity for the service; (2) a thorough review of the competitive landscape and service options offered by competitors; and (3) a marketing plan for publicizing the service and attracting potential participants.

Appendix A: Slashdot Ratings/Moderation Model

- **Reader submits story**
 - do you need to be a member to post a story? [Looks like they can: “anonymous coward”]
 - Paid Editors decide whether to post it (on daily basis)
 - posted to homepage or to a subsection with “a smaller, more devoted group of readers with a more specific interest in these subjects”
 - Accuracy not verified – left to user community to rebut
 - Story itself not moderated
- **Users comment on it** (thousands of comments per day)
- **Comments are moderated**
 - “The moderation system is designed to sort the gems and the crap from the steady stream of information that flows through the pipe. And wherever possible, it tries to make the readers of the site take on the responsibility.”
 - “The goal is that each reader will be able to [read Slashdot at a level that they find appropriate](#). The impatient can read nothing at all but the original stories. Some will only want to read the highest rated of comments, some will want to eliminate anonymous posts, and others will want to read every last drip of data, from the First Posts! to the spam. The system we've created here will make that happen. Or at least, it sure will try...”
 - Originally: handpicked editors to add or delete points to comments (25, then 400)
 - Now: moderators score the comments; selection criteria:
 - system automatically selects moderator status
 - on/off: not a moderator all the time: you gain “tokens” periodically, and when you gather enough, you may be assigned moderator status
 - moderators get points to allocate to posts: when you use up your points (or they expire, after 3 days), you lose moderator status
 - must be a logged-in user
 - average reader: not “obsessive,” not too little
 - must have been around for awhile (newest “few thousand” accounts thrown out)
 - Opt-out possible
 - Positive Contributor:
 - “Karma” score (described below):
 - post more good comments than bad (such that you have “positive,” “good,” or “excellent” karma)
 - Slashdot editors have unlimited “mod points”
 - primarily to score down spam
- **Moderation leads to Scoring of Comments**
 - –1 to 5
 - anonymous users start at 0
 - logged in users start at 1
 - 2 if good karma
 - 0 or –1 if bad karma
 - Moderators choose adjective from dropdown to describe
 - adds a point if positive, deducts if negative
 - Moderators cannot participate in same conversation as moderator and poster

Quality Control:

- **Contributors are moderated:**
 - Karma:
 - Terrible, bad, neutral, positive, good, excellent
 - based on your comments, your postings being accepted, your moderation
 - must be logged in to get it
 - needed to become moderator
 - helps your initial comment score
- **Moderators are moderated** (“Meta-moderation”)
 - moderators graded as fair or unfair
- **Reader controls display** of stories and contents based on Scoring:
 - Threshold level: shows only comments scoring above chosen level (-1 to 5)
 - Ability to list in descending order of score
 - ability to add/delete additional points to posts with selected moderator adjectives to move them up in your filtering scheme
 - example: “add extra point to every post moderated as ‘funny’”)
- **Anti-troll controls:**
 - can’t post more than once every 120 seconds
 - being moderated down several times in short time frame gets you banned: 72-hour “cooling off” period

Appendix B: Epinions Reputational Model

- Products get listed
 - by Epinions, not users
- Registered members rate products on 1-5 star scale
- Products in given category listed by overall score, highest to lowest, based on:
 - average score of all ratings
 - ratings of “high quality” reviews weighted more heavily
 - by trust and reputation of reviewer
 - recency of reviews also factored in
 - [category lead ratings count more?]
- Registered members write a review about any listed product
 - 100 word minimum
 - applies to reviews of similar products – can’t just cut and paste old reviews
 - language and spelling check applied before posting
 - members limited to one review per product
 - can be updated later
- Reviews by people from your web of trust listed higher on list of reviews for a product
- Reviews overall impacted by reputation of writers
- Other members can respond to reviews
- Essays
 - more general category analysis
 - registered users only

Quality Control:

- Reviews are rated by other registered members
 - Very Helpful, Helpful, Somewhat Helpful, Not Helpful
 - rating impacts what member sees in the future: “The Web of Trust uses your rating information to highlight particular authors and reviews that may interest you.”
 - [does it impact order in which reviews are listed?]
 - Advisors ratings count more heavily [category leads too?]
 - List tells reviewer overall score, who rated, and their rating (unless they choose to remain hidden)
- Web of Trust
 - can add the writer of a review you find useful
 - can add based on reading their profile
 - is transitive: people who trust you are effected by people you trust
 - a person’s trust list can be viewed unless they choose to hide it
 - supports choice of advisors
- Income/Eroyalties
 - earned for writing reviews
 - if people make buying decision based on your review
 - total visits and members visits considered
- Category Leads
 - selected by Epinions from user nominees; members can also recommend that they be renewed and provide feedback
 - ensure new reviews rated by category lead or advisor

- assist selection of top reviewers
 - add new products in category
 - reviews listed higher in category (usually first)
 - their ratings more heavily weighted [products, reviews, or both?]
 - role in what new users see (i.e., whose own input hasn't yet registered)
- Top Reviewers
 - based on getting high ratings for their reviews
 - more prominent placement of their reviews in category
 - selected by community, not Epinions
 - mostly “very helpful” scores
 - regular contribution (and above minimum)
 - first/early contributor of reviews for products
 - Quality of web of trust
 - list revised monthly
- Advisors (now Editors)
 - based on quality of review rating, not product reviewing
 - provide feedback to reviewers in category
 - more heavily weighted ratings in category [of products or reviews or both?]
 - their own reviews not highlighted
 - selected by community, not Epinions, according to:
 - quality and frequency of ratings of reviews in their category (not clear exactly how this is determined – by using Epinions Rating Guidelines)
 - strong web of trust list
 - quality and quantity of comments to reviews (and over minimum)
 - do not have to review themselves, but quality considered if they do write them
 - being trusted or blocked by other members
 - get one “most helpful” rating
 - list revised monthly
 - can be both Advisor and Top Reviewer, but tougher criteria
- Most Popular Lists
 - by number of visitors to their reviews
 - each IP address counted only once (?)
- Block List:
 - ability to filter out reviews of another user you don't find useful
- Abuse Reports

Appendix C: Outline of Basic Live365.com and LaunchCast Functionality

Live 365.com

- Primarily outlet for DJs looking to stream their own stations (hobbyists)
- Individual Users create their own stations
 - upload tracks to their own station's list of mp3s (stored on Live365 servers)
 - must be their own, or
 - if published, by writer affiliated with BMI, ASCAP, or SESAC
 - if an "indie," have to get their permission
 - create playlists from their station list
 - sideload track from library
 - "looped broadcasting software" plays the streams from playlist
- Users must follow DMCA sound recording complement:
 - no song played within hour of request or at specified time
 - In three-hour period, not intentionally more than 3 songs from same recording (and no more than 2 in a row), nor more than 4 from same artist (and no more than 3 in a row)
 - looped programs at least 3 hours long
 - can't retransmit more than 4 times in any two-week period
 - no advance program guides
 - maintain ID information on recordings
- Stations are Rated
 - Requires you to listen for a couple minutes first
- Ability to add tracks to wishlist
- Community Message Boards
 - must be logged in member
 - Organized into Forums (often by genre), with threaded discussions
 - includes Folk/Blues/Country
 - Can also form User Groups (if open membership; moderated) within the community forum
 - Within forum, one-thread-per-station rule
 - some discussions moderated
 - lots of people hyping their stations
 - can be linked to from stations
- Chat rooms
- Live Broadcasting Option
- Monthly Fee: \$5 + fee for extra storage space (first 100 mb free)
- 1000+ stations
- Has won lots of awards; affiliated with major broadcasting organizations (NAB)
- Licensed with ASCAP, BMI
- [how are they handling buffer copy issue and uploading of "copies" to their servers? They say okay so long as your copy is "authorized"]
- Music Library
 - labels and artists can submit music
 - made available for "sideload" into user broadcasts
 - Must sign license and release to add music there

(Yahoo!) LaunchCast

- home page promise: “music that listens to you”
 - “customize your own radio station based on artists and genres you like”
 - “discover music based on your tastes”
 - “ban the songs you hate”
 - “rate music to influence how often you hear it”
- Launchcast plus
 - “Discover music through your own community”
 - “use influencers’ and other listeners’ rated music lists to enhance your music discovery experience”
 - \$3.99/month; \$35.99/yr.
 - Influencers
 - if you add them, their ratings influence what you hear
 - cool function where you can search for influencers by searching for people who have your highly rated artists on their lists
 - Subscribers
 - the people who subscribe to you (such that you’re an influencer for them)
 - Moods
- Member created stations like Live365
- Usual menu of stations organized by genre
 - some Plus, some free
- Posting of Songs:
 - all done by them
 - no “deep” cuts, new indie artists, etc.
- Ratings
 - must be signed in (Yahoo! ID)
 - 0 (never play) to 100
 - do it when song gets played on your station or other stations
 - can also click tab to rate the artist and album
 - Detailed ratings on your personal station
- Make Your Own Radio Station
 - select favorite genres, artists
 - can also rate artists and songs and genres, subgenres to weight how much they get played
 - 5 skips per hour
- Fan Stations
 - artist specific: draws from other highly rated artists on lists where fans rated the particular artist at 90+
- Artist Information
 - discography, etc.
 - ability to see other users who have on list