Anyone who follows me on twitter or reads this blog knows I'm not a big fan of technology patents or patent law. I think they inhibit innovation and have become a weapon of small business destruction rather than a foundation of progress. But that is not the point of this post.

Way back in the 1990s Audionet/Broadcast.com was always having to invent new ways of streaming audio/video , presenting them to consumers and generating new revenue opportunities. You know those pop up windows that Netflix has used for years ? We created those. Called them "Guaranteed Click Throughs" because we guaranteed that when a user clicked on them they would take you right to your website. We sold them for 25cents EACH. That is how valuable traffic was back then. Sure wish I patented them so I could prevent anyone else from ever using them !

There were some other things we were working on that I put together notes on. My lawyers wanted me to go through the entire process of patenting them. I just wanted to compete. So the patent applications never got past my note taking. But in the interest of helping anyone who may ever face a patent troll on these topics, these are my notes. (And FWIW, I'm not saying these would definitely have gotten patents, and the in depth tech information is not in here. These were just notes to start a process that was never completed)

#1 A Network of Multicast Networks

Invention Disclosure Form

Abstract (2-4 sentences): MultiNetworkMulticast Network – A commercial network of multicast enabled networks. The composite of multiple Multcast enabled networks that terminates at a single point that enables digital content to be distributed in a one to many fashion across multiple networks from a single initiation point. This enables providers of digital content to enable broadcast of those bits to an unlimited number of networks and hence, endpoints on that network of the content while only needing to enable a single source

Conception date (describe any available written evidence of conception):

Oct 1996

List all contributors to the project from which the invention arose:

Mark Cuban, Kevin Smith

Has the invention been disclosed, or is it likely to be disclosed in the near future, to people or parties outside of the company? For example, has the invention been described, demonstrated or made available (i) to a vendor or customer; (ii) at a beta site; (iii) at a technical conference or trade show; (iv) or in a printed publication? If so, provide the date and a description of each such disclosure and state whether the disclosure was subject to a non-disclosure agreement (NDA):

Yes, the network is in use, and has been disclosed since Dec 1996

Identify each company project or product that utilizes or may utilize the invention. Also list the current status of each such project or product, including any known or anticipated release, sales, shipping, beta testing, demonstration or public disclosure dates: All streaming media and media distribution products used by the company benefits from this invention. The company has been working with commercial networks since 1996 to aggregate them into a single network. We have been building the network internally to link those networks, and have been testing the integration of application software to distribute those bits across multiple multicast enabled networks since January 1997.

We are currently actively working with Internet Service Providers and Network Backbone providers to integrate them into the process. Once integrated, the invention will allow us to distribute digital content in real time to a potentially unlimited size audience

Identify and describe any prior references that are relevant to the invention (e.g., known products, patents, publications, etc.): There exists a non profit network known as the Mbone. The mbone is a loosley coupled network of networks which can be joined or left at anypoint, without initiation or notice of departure. However, because it is not controlled or owned by any organization, there is no consistency for distribution on the network. There is no single point from which a content provider can go, link to or integrate in order to assure the delivery of their digital content to all endpoints. We looked at this configuration and enhanced it by creating defined links and destinations, creating the network of networks so that a content provider knows exactly what destination network endpoints are available, and the capabilities of those links

State the problem that motivated or required the solution provided by your invention and briefly describe how your invention solves this problem: In distributing digital content on the internet today, there is a huge problem of scale. Digital content is transmitted by sending a continuous stream of bits from an origination point, directly to a destination point in a 1 to 1 fashion. The problem is that number of destination points is limited by the amount of bandwidth available to the provider. So , to deliver 1gb of digital content to 100,000 users would require 100000000000000 bits of bandwidth !

The multicast protocol enables those same 1gb of content to be broadcast in a one to many fashion. However in order to receive those bits, users must be on a network that has been multicast enabled, and all the multicast networks that the desired audience exist on, must be linked to a common network. If the multicast enabled networks are not linked, then the content provider must originate content on each multicast enabled network seperately. By creating our network of networks, we enabled content providers to broadcast content one time to multiple multicast enabled networks,. As a result, in the above example, only 1gb of bandwidth would be needed to reach those 100k users.

Describe how others have tried to solve the same or similar types of problems, and describe how your invention differs from those solutions: Others have tried to create organizations that encouraged people to work together to try to solve this problem, but it has not happened until we did

it.

Strategic Importance: Briefly state why this invention is strategically valuable to the company. In other words, explain (i) how it would benefit the company to be able to prevent one of our competitors from using this technology; or (ii) why the company would care if one of our competitors could prevent us from using this technology: The company has spent considerable dollars and resources to enable this invention and offer the benefit to our customers. We have contractually tried to protect ourselves. However, if a company were to copy our efforts, they could offer the same level of savings to digital content providers thereby injuring our profit potential and market position.

#2 Personalization System – 1998 – This was a system we had designed and had implemented a simple version of, with the below enhancements in progress

The goal of this system is to find out as much as we possibly can about our users by asking them questions, track exactly what they listen or watch and for how long, to allow them to create a My.Yahoo.Com that lists their favorite content, with reminders for scheduled programs/events and recommendations for comparable content along with community items such as related newsgroups, chats, and the like

It starts with a user going to to a webpage where they provide us demographics information, and then choose the categories of content they like. They also pick their favorite teams, artists, companies they follow and schedules.

From there a custom Player SMIL file is created so that the user can have their personalization features presented to them inside the player. It will look like My.Yahoo, only in the player. A comparable HTML page will be created as well. So they can interact in either way

In addition to listings , there will be a calendar feature that can be local on the harddrive, or on a webpage , but it is personalized with games , shows, events based on the items chosen and reminders requested. The user should also be able to go to a master calendar and drag and drop to the personal calendar

There also needs to be a personalized ticker with hot text ads, prices of selected stocks, and alarms or reminders of events chosen.

There shouldbe a search feature in the player, that allows the user to search Broadcast.com for other items , whether live or on demand

There must then of course be personalized advertising. Based upon the demographics information provided and upon the content, audio and video that the user accesses. This of course means that we will need to keep multiple master databases of users, their unique id, the unique ID assigned by the mediaplayer,. This will allow us to say that sample user, who has these characteristics, is now about to watch this music video, so deliver this specified gateway ad , and during the content, deliver these following types of ads. The ads will be defined based upon category like zones. There needs to be an unlimited number of these categories for us to sell.

There must be a means of commerce. Commerce entails two levels, one is to buy impulse merchandise associated with the content. So it could be a trip to Dallas when listening to the zone if the user is from out of town, or a free coupon to a restaurant if the user is in town, and of course if the user is listening to a CD from the jukebox, they must be able to buy the CD. There must also be the option, in certain instances to save the audio or video to disk for a fee. This requires us to define the content as an object with characteristics that enabled depending on the geography (some content may only be available to local residents), or on whether we have the download rights, or whether we have it available for sale as a product.

The goal is to offer personalization, track, suggest and sell.

We will sell products, ads, gateway ads, in content ads, and who knows what other types of digital opportunities that arise.

#3 Self Service Hosting 1998 – Broadcast.com Personal Broadcast Network

The goal is to allow a person to come to simplenet (Broadcast.com's hosting subsidiary) and select a hosting option that allows them to offer ondemand or live streaming content. To make a choice as to the size audience they would like to reach, and to have options as to how they would like to be promoted.

The system must also have a calendar component so that content can be included in a schedule if live, or as part of a search engine of on demand. The content must also have the option of being private and having a password assigned that the user can hand out to whoever they want, and that will secure the stream.

The system must accommodate what happens on the backend server as well and of course the whole thing must happen WITHOUT any hands on intervation. Each service/offering must be handsfree, completely selfservice so that it can scale. The only exception is for encoded of sent items, which will be charged on a per hour basis for handling.

1. User Gets a Welcome to the Broadcast.com Personal Broadcast Network
2. Please download Your Personal Broadcast Station. This is our custom version of the real and netshow encoders combined in a single package. When you run it, it asks the following questions.

Do you want to broadcast in Audio or Video ?

1. Live –

Ask them for a description of the show. Different questions for audio and video. Video, is it from a camera, VCR, is it music, talk only, news, lots of motion, little motion, sports, whatever we can think of . This helps us determine what kind of quality and encoder settings to suggest, and what speed PC is necessary to encode The assumption is that all feeds will be delivered via a dialup internet connection

1. The user is asked if this is the PC that will deliver the live feed
    1. If yes, a tracert is done and the network they are using is determined. It is compared to a list of good and bad networks and an interpretation is made of the likelihood of good connections. ie, if its AOL, or if tracert is over 250ms, then a warning is issued.

2. The software then reads the hardware config, the cpu config, who the ISP is from the Wininet, and the speed of the connection and reads their modem configuration, and then sends it to us or allows them to upload the file it creates to us

A, If its video, what kind of video card they are using to capture (To determine compatibility of encoders)

1. If they don't know, or don't have a compatible card, they are offered a list of cards that we will sell them, with an option to have a local reseller install for an additional $99.95. In addition, they are offered a complete PC setup with all the required pieces ready to go for $2495 for video.

2. They are asked what the video source is , camera, vcr,

3. They are asked what kind of computer and configurationit is to make sure it has enough horse power to encode live video

B. If its audio, same kind of questions as above. Ask them if they will be using the mic that came with their computer. Ask them if they will be mixing multiple sources. Ask them if this is talk, news, sports, music, what level of quality they want.

C. Give them the option of buying multiple radio station setups. From software to program a music station, software only, or computer included, to devices to do remotes, devices to take phone calls, etc.

D.Promotional Options

1. Be listed in the Broadcast.com Personal Broadcast Network Schedule – $5 per month
2. Have a featured time that appears in the whats on now homepage of the Personal Broadcast Network . Only one per scheduled time. Each time has a specific price, and once its taken, its gone. So Monday, 5pm is , lets say $60, Tuesday 2am is $5

Be listed in the Main Broadcast.com Live Events Listing $ 100 per month

4 Buy Banners on Broadcast.com

General Rotation $ 30 CPM, minimum of $100

Specific Location $50 CPM, minimum of $100

1. Select the pricing option

On demand – Per Month $ 29.95 for 14.4, 59.95 for 28.8. , for up to 4 hours of content. Up to 50 simultaneous users. 25% discount if they run our gateway ads prior and use our SMIL template

Live – 24×7

28.8 audio or video 19.95 up to 10 simul users, if they run gw

ads, 29.95 if not.

288 audio or video, 99.95 up to 25 simul users, 149 up to 50

if they run our gateway ads. Without gateway ads, $149 and $199.

Option to save and make available as archive is priced same as o on demand.

Final option (Till we think of more things), is the reporting option Its another $10 for monthly reports, $30 for weeklyreports.

On the backend, once a user completes the information and their credit card is approved, the backend software checks our server farm to find the next available server.This server has its config file modified to create a user block (this is already setup to work in real, not sure about netshow), and assign a password for the user, and an IP range based upon the tracert done from the software. This range (since its dialup its not a specific ip) limits the box the feed can come from . From there the user is emailed a server config file, along with an instruction manual on how to start the encoder and what directory to put the server config file. Then away they go !

If its on demand, and they send encoded file, same thing happens. They encod the file and the destination is our server. One difference is that we will set a disk quota basedupon the number of hours and bit rate purchased. So if the user bought up to 4 hours of encoded 28.8 video, they get 25kbsx60x4 or 6mbs of disk storage.

The user is then sent complete instructions on how to link to the file. Or we can just license the RealNetworks publisher which has this built in.