Found this as I was cleaning up some backups from almost 15 years ago. THought it would be interesting to let people see what my goals were for our merger with Yahoo back then.

Strategic Issues for Yahoo Broadcasting Group

June 18th 1999

General Strategic Issues:

Historically we have built value by adding content, expanding our network, building new business products, whether biz svc or advertising, before anyone else. Because we were first for all of these , we had a huge advantage and there was not a significant cost beyond hardware , people and bandwidth to accomplish these.

I think we are getting past this stage, as an industry. I think we can expect that people will look at throwing money at content providers in order to try to play catch up. In order to still be attractive to all of our partners, biz svcs, advertising, and content, we must find new ways of adding value. That new way is via proprietary software

We have always said that software would be the last thing we added . We have taken this tact because there were so many other variables that were still evolving. From software being re-genned every 3 months from MicroSoft and Real Networks, the network, and learning what we can sell and what customers wanted to buy. We have reached the point now where our key value adds and differentiation have to come from software we produce in house.

We have to be able to demonstrate to our partners that our 4 years of experience have given us the base upon which to build applications that create unique opportunities . Our competition is falling into a trap thinking that internet based radio is a key offering. The real key offering is monetizing all digital offerings, regardless of whether its audio/video/flash or ? on the outside and pushing down costs so that everything we do can happen in a lights out , no touch environment driven by software.

My feeling is that going forward , our biggest challenges will be

1. Hiring Quality SW developers and Project Managers
2. Developing and Supporting Leading Edge products that give us a sales and productivity advantage
3. Having the balls to be willing to take chances and sell products and services that people don't know they need yet.

   User Generated Content

   ability for users to deliver live or ondemand content to a bcst server in native streamed protocols (non-http)

   1. **Build or Buy Software**
   2. **Subsidized hopefully by MicroSoft**
   3. **License of Real Producer or modify encoder from Real Networks**
   4. **Possible license of WebKapture.com Software**
   5. **ability to provide low cost easy to use devices for digital encoding (dazzle)**
   6. **ability to provide streaming server plugins that automatically find an available server and host the content on that server**

1. ability to monitor usage and enforce limits in real time

1. ability to bill based on usage, length, subscription basis
2. ability to report on usage and users
3. **Music detection for copyright protection via comparisonics or getmedia**

   Lights out complete automation of encoding and serving systems

   1. **Automation of Investment to provide a single port on Piso Audio/Video Matrix Switch for EVERY source of live content**

      Ability to control any port to any port (or multiport) automation in realtime with realtime reporting

      1. **With time based event triggers**
      2. **With tone (commercials) event triggers**
      3. **With Scene Transition event triggers (Islip)**
      4. **With Music to Voice to Silence Detection event triggers**
      5. **With Quality Control via noise tolerance detection**
      6. **Report within a programming matrix what programming is playing from which port to which encoder to which server, in text and graphical model with double click drill downs**

7. Quality Control reporting

One thing we don't do, that would be a marketing goldmine, is to track the quality of our user connections. It would be very simple. All of our servers report the number packets, delivered/lost and buffering. We should be using this information in real time to show our users and our customers the confidence we have in our systems and how they are actually better.

*With complete database integration of all programming for programming guide and personalization purpose*s.

1. A user will be able to select from the programming guide of live and on demand content. The guide will know the source of the content and create using asp or cgi programming a personal station

2. This will be a drag and drop system where a user will be able to chose from thousands of programs, or content items, and drop them in their personal schedule/calendar at a specific time, or chose a Network of preselected programs and modify that.

a. User will have the option to download to their choice of devices if the content is eligible and they have paid for the right

1. There will a database of user selections for each user, and a user history of activity.
2. Advertisers will be able to select the demo or psychographics of users and have their commercials inserted in to the user stations
3. For pre programmed stations, or over the air stations, the advertiser will be able to insert commercials using the same user profiles through the use of Windows Media trigger driven switching or for real media, a plugin will have to be written the recognizes the trigger and inserts the media feed into the user specific stream
4. Realtime reporting of usage with user name/email, by content type, by geography, by psychographic demographics for the purpose of providing advertisers the ability to monitor and SWITCH their ads in realtime. This
5. would mean an advertiser, or even a network programmer could program and ad in realtime based upon the number of viewers.listeners, and their response to an ad.
6. All clicks and movement throughout the site would be tracked and maintained in a user movement database for data mining, not for sale

Bottom line is any content available to any user, with any other content interwoven inside of it., with complete user selectability and every click tracking and user identification

1. Corporate Self Reservation and Broadcast Systems

The key to 99% margins in this business is the ability to allow corporate users to schedule , produce and broadcast their own audio/video based events, and to allow them to create and manage their own Programming guides , quickly and easily. This requires a very easy to use system, comparable to audio teleconferencing systems, with additional integrated Portal Style Programming Guides and complete backend reporting and billing.

1. To do this we basically need to reinvent how we produce events to make them a single hardware and software package. This package must be something that any idiot can use on their own. From a complete camera production kit, toaudio couplers, to switches. We need to package a completely integrated system that is a leave behind hardware system
1. We need the same solution from a network perspective. We must be able to go in to a client, just as an audioteleconferencing company installs an audio bridge and a T1 with X ports, we must also install the hardware, and the T1 with X capacity, along with encoders and servers, all prewired, and a control server that acts as a host, either locally or at bcst that manages everything and communicates back to us
2. We can start this, as phase one by offering it audio only. A customer sets up an audio conference call using traditional means, and we integrate it into a webserving environment by dialing in a coupler, connected to a Pisa port, or by having a 24×7 hardwired connection to the port, and just having it " join the call"

There are some packages that do this, Vstream, some TelSoft apps. I would prefer to see us buy before build if the price is reasonable and focus on adding video to the app.ication rather than trying to start from scratch

First step is to hire a project manager who is an experienced programmer, preferably from the video teleconferencing industry

We need this to spec out and define roles and manage to completion.

We also need programmers dedicated to this application and its maintenance

1. We of course must get to video as quickly as possible , offering a turnkey solution for companies to put in conference rooms, AV rooms, or on their desktops, and even for laptops
2. Part of the solution must include indepth reporting in realtime. Companies must know who is using. The cost, who is attending and in depth information on the quality of service of the broadcast. Was there buffering at all, for who, where, how can it be fixed
3. All information must be able to be distributed to 3rd party applications. Companies must be able to let their HR systems or marketing systems know who attended, how long, did they interact, where did they watch, at what bit rate, etc.

1. **Media Management – Indexing**

1. A core competency for BCST Group is to manage and index large quantities of audio and video in a search, choose and download manner.
    1. Video content can be searched by indexing the closed captioning that comes with TV content, or with content , such as biz content, where it is financially worthwhile to add closed captioning.
    2. Video and audio content that is talking head , no background noise can be indexed through trained speech recognition (trained for a specific show where the voices are consistent), can be indexed
    3. Video and audio content that doesn't have a transcript of any sort can only be indexed by setting metadata at the time of the encoding. We have an opportunity to set standards for how this data is indexed and encoded if we move quickly. This allows users to make searches on an unlimited number of inserted key words
    4. The challenge is in creating a low cost system that can scale to Thousands of PETABYTES of data. Just as BCST has created space between us and the rest through scaling our streaming infrastructure, the ability to create a system that uses off the shelf hard disk storage to reduce costs, and that scales will create a competitive advantage in terms of the cost of hosting, and the ability to add content
        1. We need to have at least one person who works on developing and implementing this hardware and programmers who work on using access information on developing the appropriate content distribution architecture that integrates the hardware and storage management software with reports of usage. This will allow the amount of MB of content delivered to be in balance with the distribution variables that act as constraints, throughput of the serving app, throughput of the network segment, throughput of the disk storage system and throughput of the file serving mechanism
1. Index content grows in value much like network usage. The more nodes to a newtork the greater the value of the network, the more indexed , searchable video, the greater the value of the catalog of video.

2. Content volume, traffic volume and scalability of infrastructure are the key to success, and first mover creates the magnet for new content and users
3. An additional marketing need will be to productize this so that business services can sell Hosted solutions or self service solutions to corporations and so that we can leverage the value of all the content we have to offer content on a subscription basis for viewing and/or downloading

MetaData Search Tool

Internet TV Stations

User programmed

Pre programmed

Download with copyright protection

Subscription Service

Custom Player

User Created Broadcast Network

Getting Wide via Content acquisition

Broadband video acquisition centers on the network

Digital TV Broadband bandwidth

CNBC Killer

CNN killer

Political TV/Pres Debates

Movies with Trimark

Quality Control of user streams – integration to routers

Active Directory Integration of files and users into 2 directories