

## DEVELOPMENTAL APPROACHES FOR AN EXISTING CABLE SYSTEM

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The paper will present, with the aid of audio-visuals, an analysis of the development of Manhattan Cable TV's programming effort, and the technical requirements needed to implement that effort.

A brief history of our unique system will be followed by a discussion of the new demands placed upon us, focusing particularly on those demands placed upon the Transmission facility.

More frequent program switching to accommodate a heavier programming schedule, which includes Public Access, Leased Access, Municipal, Sports, and Special Event programs, plus promotional material, graphic interludes between these programs, and commercial inserts, will be required over 10 channels. In addition, more system-wide signal routing and switching capability is required to accommodate a growing number of remote sources that wish to feed live programming over the Cable system.

In conclusion, we will discuss the ways that each of our growth problems are being dealt with within our 10 year system. This includes partial automation, portable infrared links, and signal processing equipment.

The subject of this report is the parallel evolution of programming concepts and hardware implementations at Manhattan Cable TV. This represents one area of development out of several currently going on at our cable system.

The initial concern of Manhattan Cable TV's efforts in New York City was to deliver better reception than over the air television, with little or no emphasis on originating programming. However, the franchise agreement stipulates that channels must be allocated for Public and Municipal access. The company set up a transmission facility in its business offices on 23rd Street, downstream from the headend. The purpose of this facility was to play tapes submitted by Manhattan's citizens for non-commercial Public Access cablecasting on a first come first served basis. The initial equipment was minimal, consisting of a few Sony  $\frac{1}{2}$ " decks to accommodate the porta-pak material we were receiving. A small black and white studio was established with support from Manhattan Cable TV in a building next door. The studio, owned and operated by an independent non-profit organization, enabled producers to feed live programming and make studio recordings. There were some channel interconnects set up for

Public Access between Manhattan Cable TV and Teleprompter Manhattan Cable TV in upper Manhattan, so that producers desiring to do so, could reach the entire borough. This interconnect is an RF switching system at the headend at 59th Street, controlled remotely by the Transmission room at 23rd Street.

This initial effort was met with enthusiasm and success. The amount of programming material began to grow, and many individuals turned their attention, full or part time, to being Access producers. Most turned out regularly scheduled series programs, and many of these producers are still with Manhattan Cable TV today. Soon, this escalation in programming began to define itself into specialized categories. A variety of ethnic programming appeared. Ethnic programming is economically feasible in New York City because of its many diverse ethnic communities.

On the Municipal side, one of Manhattan's Community Boards, Community Board 8, began to produce a monthly series based on their meetings. Manhattan's two city Councilmen-At-Large also started a regular series. Both of these programs were designed to increase participation in and awareness of local government.

Some Access producers, who had been particularly diligent about their programs, wanted to see if their shows were commercially viable. Manhattan Cable TV tried, with its producers, to explore the commercial potential of the system. For a nominal fee, the company leased time to those producers on a commercially designated access channel. In turn the producers were able to sell advertising on their programs. Because of the increased credibility of Access, Municipal, and Leased programs, image quality and audio quality became more critical. Manhattan Cable TV responded to this need by the construction of its present transmission room and by participating in the construction of a second studio, originally called Automation House and now called the Center for Non-Broadcast Television.

The new transmission room was built in a larger area, which gave us more flexibility. We expanded to twelve decks, six  $\frac{1}{2}$ " and six  $\frac{3}{4}$ ". Three time base correctors were added to stabilize many of the tapes played on the system. Our new verticle interval switcher gave us a single memory capacity, which allowed us to start the programs on our channels at the same time. We

also had the ability to switch the Center for Non-Broadcast Television studio, located on East 68th Street, onto the cable system, with the same RF switching system that allows Teleprompter Cable programs to be placed on our system.

The construction of the transmission facility, and in part, the 68th Street studio, was to accommodate the programs on the Public Access channels C and D, the Leased Access channel J, the municipal channel L (for which the Center for Non-Broadcast Television studio was mainly set up), and some alphanumeric channels. However, there have been considerable programming advances since the time of this last reconstruction which put demands on the room to the limit of what it was originally designed to handle.

Crucial to this development has been the introduction of low cost techniques for instant remote location programming from anywhere in Manhattan Cable TV's franchise area. Two artists working in the field of experimental television were the first to exercise this remote capability and did so on the Public Access channels. One artist desired to cablecast a real time mixture of two live sources and one tape source originating from the Whitney Museum of American Art on Madison Avenue and the Center for Non-Broadcast Television on East 68th Street. The signal from the Whitney Museum had to be delivered to the 68th Street studio to be mixed and from there we could switch the signal on the system via RF switching at the headend. Our problem was to bring the signal from Madison Ave. to East 68th Street. At the roof of the Whitney Museum we placed an infrared transmitter and beamed the signal to the Westbury Hotel on Madison Avenue between 70th and 69th Streets. From there, the signal was transferred to another infrared transmitter and sent to the studio. Infrared links do not have a considerably long over the air transmission range, but they are adequate enough to deliver a signal to the nearest cable drop somewhere in the city. In addition, the infrared links are not under FCC jurisdiction and are available at fairly low cost.

The second use of these links was part of a more involved project that was, in effect, a two way satellite hookup between New York and California. This was also a project produced for Public Access. A truck with a microwave dish was set up on the outskirts of lower Manhattan in a land fill region. The dish picked up the satellite signal from California and then relayed it from the landfill region to the cable system. The infrared link, had to send its signal around a corner to the nearest Cable drop. Adjacent to the cable drop, Manhattan Cable TV had a truck with an infrared receiver, picking up the signal and modulating it on the system.

In our earlier development, we saw how a programming concept such as Public Access and Public Leased Access led to our investment in more hardware; now our hardware was showing us the limits we can carry our software concepts to. These experiments with handling remote feeds has given us incentive and training for handling our own remote feeds to bring in advertising dollars. Manhattan Cable TV's first major remote was live coverage of the New York City Marathon on which we sold advertising. We also

have remote feeds from Madison Square Garden and Nassau Coliseum feeding sports programs to the Transmission room where commercials are inserted and transmitted on the system. Our involvement with selling time during the sports programs required us to program two more channels.

With advertising and promotional material our tape load has increased considerably over the past year. We are now in the process of again rethinking our transmission facility. Full automation for switching is now needed. This proposed system will pre-roll our decks and send their signals to the appropriate channels. In addition it will mix audio, saving the operator the problem of scrambling to check the pots on 10 channels of audio. Of course having an automated switcher that will switch some 25 3/4" helical decks onto the available TBC presents its own particular problem. We have to route back advance vertical sync from the TBC to the deck we are using and also 358 feed-back if we wish to go direct color for maximum picture quality. We are currently preparing a rebuild of this nature.

Our experience running transmission from early Public Access programming to our present situation outlines a logical parallel growth in equipment investment and programming plans. An idea came first, then some hardware. With the hardware, we were able to go beyond the original idea. This would lead to other programming ideas and then more equipment to handle these ideas properly. This process will eventually level off when our technical operation can accommodate a greater programming effort, which will be dependent upon how efficiently we can integrate advertising into our system.