

ADDRESSABLE CONTROL - A BIG FIRST STEP TOWARD THE
MARRIAGE OF COMPUTER, CABLE, AND CONSUMER

LARRY C. BROWN
GENERAL MANAGER PLANNING

PIONEER COMMUNICATIONS OF AMERICA
3518 RIVERSIDE DRIVE, COLUMBUS, OHIO 43221

Addressable Control... is it the final step in the evolution of multiple-programming services on cable, or rather a first big step toward a 'new beginning' for the industry? Pioneer believes the latter, and has accordingly developed a System the company believes is 'One Single Solution' to every Cable Operator facing the step up to Addressable Control...and beyond! The key to the approach is a 'Family' of co-existable Subscriber Terminals suitable for virtually every conceivable need envisioned in a one-way or two-way cable system.

Addressable Control--"remote control" of a CATV subscriber's channel reception capabilities from a convenient, centralized "HUB" point within the cable system--finally has achieved a solid foothold on our industry. Over the last several decades, the cost of the computer technologies necessary to provide addressable control has plunged. Meanwhile, cable system installer/technician labor costs...especially when "fully-loaded" with a vehicle, tools, and an abundant supply of Mad Dog Repellant for those backyard easements ... have soared. At the same time, a multitude of relatively low-cost Premium Programming Packages available by Satellite have evolved, along with a "tiered service" concept for marketing them, creating the most important element of the equation that now makes the addressable control concept so attractive: a crying need. The mobility of the average American is raising the typical cable system's "churn"...the rate of connect/disconnect of subscribers...to all-time highs. And now we have yet another "turn-over" to accomodate...an "intra-tier" churn as subscribers "pick and choose" among the tiers of service made available to them.

"Manual Control" - a physical trip to the subscriber home for every connect, disconnect, or service "tier" change. "Addressable Control" - accomplishing the same thing remotely by simply typing in a command into a keyboard at the cable

office. The ultimate payback of Addressable Control is so obvious, it needs no further elaboration. It is not hard to see why some CATV industry experts predict that within the next decade, over 80% of American cable homes will be equipped with "Addressable Control" devices.

But, is the widespread industry acceptance of "Addressable Control" of each subscriber's programming the culmination of years of progress for cable, or might it actually be the first solid sign of a whole new destiny for our industry? Could it be that the computer technology called "Addressable Control" will eventually breed such changes in our industry that some day "cable television" might even be a misnomer for the services we provide?

At Pioneer, we view Addressable Control as not an end, but rather the start of a new beginning for cable. A first big step toward bringing down to earth a lot of the "blue sky" promises we've been hearing for years. A first big step toward the marriage of computer, cable, and the consumer.

At Pioneer we aren't guessing...we're just observing. Closely.

We see the strong government deregulation trend that frees cable of the constraints which have previously hindered its development, but which is also destined to stimulate other competing industries like STV, telephone, broadcast television, and low power TV, to compete with cable for the delivery of the coming 'new services'.

We see an industry bolstered by such consumer acceptance that it can continue to attract heavy capital investment despite a recessionary economy.

We see many Cable Operators like Warner-Amex, ATC, Times-Mirror, Cox, participating in development and field testing of assorted versions of the 'new services': home security, home shopping, home banking, information retrieval.

We see, through companies like HBO, Nickleodeon, Showtime, ESPN, the impetus that simple 'packaging' of programming into easily-managable satellite-fed channels has given to the pay-TV industry.

We see the growing recognition by Advertising Industry giants like J. Walter Thompson, Ogilvy and Mather, Young and Rubicam, and the nation's largest retailers like Bristol-Myers and General Foods, of Cable Television as a powerful medium for marketing their products to consumers.

We see the soaring interest in cable exhibited by huge publishers like Knight-Ridder and Time, Inc., as they eye the industry for its 'broadband' potentials for 'electronic publishing'.

We see the innovative activity of CompuServe, The Source, CBS Infovision... resources capable of becoming major 'collators', 'packagers', and 'networkers' of new services' for cable.

With all that in mind, it's hard for anyone not to believe that "text technology", "2-way", "data communications", "satellite", "home computer", and "information-providers", will eventually shake out into logical packages that can be profitable, ongoing businesses. It won't all come at once, but it will come. Just like "tiered service" and "addressable control" have.

When Will It Come?

Within the next 10 years it's highly likely that several radically-new services involving the consumer, "text" technology, 2-way cable communication, and the computer will become viable, established, and truly-accepted industry-wide. Within 15 years it's certain. But wait...10 to 15 years? That's the term of a franchise! Ah...there's the rub!

Every franchise being built or rebuilt today is a community where, before long, these coming "new services by cable" will soon be in high demand. So for every cable operator involved in new or rebuild construction the time to start planning for these 'new services' is now.

For the cable operator who is today choosing subscriber "boxes" for "addressable control" is really locking himself into a much bigger picture. For "Addressable Control" marks a giant step up from the traditional "converter". We're no longer talking about a "stand-alone" box that sits in the subscriber home to expand the number of channels he can receive. Addressable Control infers a System. A central computer, a communications path through the cable plant, addressable

terminals in subscriber homes are the obvious "system" elements. The not-so-obvious include special support equipment (How do we maintain, test, address these "addressable boxes"?); support services (What if the control computer quits? How do you run a computer, anyway?); computer software, and more. Addressable Control truly means a System itself within the total Cable System.

For any operator considering Addressable Control, Pioneer offers two pieces of advice. First: Stop thinking "box" and start thinking "system". Look at the total system a vendor is offering you for Addressable Control.

*Is The System Simple?

Has it been CONCEIVED AND DESIGNED WITH PERSPECTIVE...designed as a SYSTEM, looking from the APPLICATIONS where the system is ultimately intended to be used, then designing the overall elements of the system so cost/benefit is optimized for you, the Cable Operator?

*Is The System A Solid Foundation To Build On?

Can the One-Way Addressable configuration of the System, used only for remote subscriber reception control, be expanded to Two-Way Interactive configurations employing Security, Text, Transaction and other services?

* Is The System Complete?

Does it provide the necessary "Support Equipment" to make operation and maintenance of the Subscriber Terminals and System more efficient, less time-consuming, thus less expensive?

*Does The System Offer A "TOTAL" Approach To Vertical Services?

Or does the System simply enable "data" exchange between Operator and Subscriber, thus passing the burden of total software development to you, the Operator?

*Is The System CLEARLY Defined?

Does the vendor offer a clear Customer Contract outlining every detail from System Final Planning through Customer Training, including mutual responsibilities of Operator and Vendor to meet a specified Project Timetable?

*Is The System Failsafe?

Do two-way configurations of the system have built-in methods to cope with the real-world problems of undesired signal ingress, an unauthorized subscriber-

connected device, or a "locked-on" Subscriber Terminal interfering with communications?

*Is The System Standardized?

Do terminal designs achieve economy of scale through mass manufacturing, yet allow for customization for special requirements, as an option? Are the system's software packages standardized, and designed to reduce the most commonly-employed types of information exchanges between Subscriber and Control Center to their simplest form, making them as easy as possible for both Operator and Subscriber to use?

*Is The System Flexible?

Does it offer not only a terminal for Addressable Control, but A COMPLETE FAMILY OF TOTALLY INTERMIXABLE TERMINALS, all co-existable in the same system, including two-way Interactive, two-way Security, and Video Text designs?

*Can The System CO-EXIST With Conventional Converters?

So you still can offer inexpensive low tiers of service?

*Is The System Truly State-Of-The-Art?

Does it offer the greatest available channel capacity, including dual-cable designs? Is its digital communications fast enough to process large volumes of subscribers in acceptable times?

*Does The System Employ EFFECTIVE Theft-Of-Service Protection?

Will your Premium and other programming have maximum security from subscriber theft?

*Does The System Really Use A Method Of Reliable And Secure Data Communications?

Are schemes of correlation and error detection designed into the Terminals to eliminate "false messages" to and from Subscribers?

*Do Terminals In The System Have A Powerful ANTI-THEFT Design?

Is there a package of electrical and mechanical features inside Terminals to deter Subscriber tampering with or theft of the Terminals.

There are dozens more questions you should ask a vendor before taking the "Addressable" plunge....questions about installation, training, warranty, continuing terminal availability, operations

startup, vendor's reputation, many things. But the key is to always be thinking "system"....not just "converter" or "box"... when you ask them.

At Pioneer, we studied all the considerations you've heard mentioned, and reduced them to what we believe is a logical "total system" architecture which can accommodate the "Addressable Control" requirement today, yet grow into a system capable of delivering the "new services" of tomorrow. This one product, the Pioneer VIP System, is intended to satisfy the Subscriber Terminal requirements of every Cable System Operator in every franchising situation, for now and years to come.

THE SYSTEM CONSISTS OF:

1. A CONTROL CENTER

Located at the central hub of the system, Computer hardware, software, and peripherals form a subsystem for one- or two-way data communications with subscribers. Standardized VIP Software Paks exist for the most frequently-requested uses of the system by the Operator (e.g. pay-per-view, one-way control, opinion polling). Primary function of Control Center is to process and store (a) all outbound commands to Subscriber Terminals and (b) all inbound responses from Subscriber Terminals (in two-way configurations).

2. CABLE PLANT ENHANCEMENTS

Located at each Trunk-Bridger Station in the Cable Plant (two-way VIP Systems only), these consist of a Pioneer Bridger Gate Controller (BGC) and a Pioneer-compatible Reverse Bridger Switch (PBS). Primary function is to (a) provide protection against remote upstream plant faults that would otherwise impair data-communications, and (b) provide strategically-located status monitoring capabilities in the plant.

3. SUBSCRIBER TERMINALS

Located in Homes and Businesses throughout the Cable System, these consist of a "family" of terminals, all of which can be intermixed as desired by Cable Operator to provide the services appropriate to each Franchise situation. Besides conventional CATV converter functions, the primary additional function of the terminals is to (a) send informative responses to the Control Center concerning status of the terminal and/or (b) receive and react to commands from the Control Center.

4. SUPPORT EQUIPMENT

Located at various points throughout the Cable System, this Custom-Designed Pioneer equipment has been created for Lab Testing, Field Maintenance, and normal Operation of the terminals. Primary function of the Support Equipment group is (a) protection of the Cable Operator's major investment in Control Center and terminals, and (b) simplification of maintenance and operation of the Pioneer System for better cost-effectiveness.

5. SUPPORT SERVICES

Provided at various appropriate times throughout the development of the entire Cable System, these include materials and planning assistance from pre-franchising, installation services, and training of Cable Operator personnel in proper operation and maintenance of the Pioneer VIP System. Customization assistance for both hardware and software is also available to potential Pioneer customers -- Cable Operators -- from Franchise Proposal through final System Installation and Training.

Our family of "mixable" Subscriber Terminals includes:

A ONE-WAY TERMINAL

Providing simple addressable control of each subscriber's channel reception.

A TWO-WAY TERMINAL

Providing all the one-way terminal capabilities, plus two-way polling and monitoring functions and two-way subscriber transaction capabilities.

A TWO-WAY PLUS TERMINAL

Providing all the two-way terminal functions plus full alphanumeric keyboard and hard copy receipts.

A TWO-WAY SECURITY TERMINAL

Giving subscriber security monitoring capabilities.

A MICRO-COMPUTER ADAPTER

Providing interface capability for most micro-computers to the cable system.

A CONTROL ADAPTER

Suitable for building into other devices, e.g. power relays...to provide "other control" functions via the VIP System.

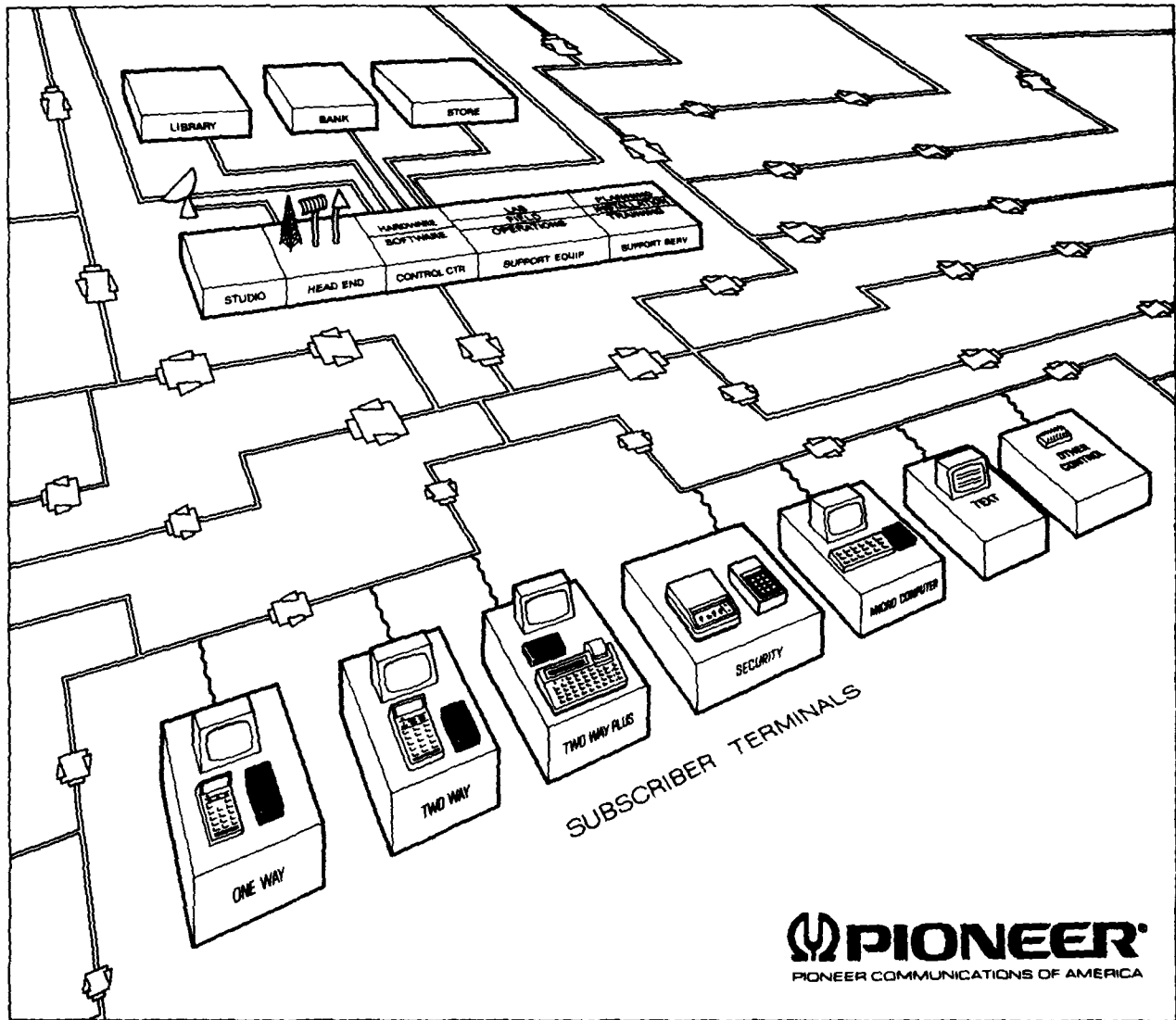
TEXT CAPABILITIES

Making possible subscriber reception of hundreds of text pages on one dedicated channel for both one-way "information services" and two-way enhanced transaction capabilities.

Pioneer's approach to the 'new services' dilemma is not purely a fantasy ideal laid out on paper. The BT-1300 Series Two-Way Terminal, for example, cornerstone of the VIP System, is just now entering mass production, after two years of research and development. And that BT-1300 is a fourth generation interactive terminal from Pioneer. As most of you probably know, only Pioneer has over seven years of research and development experience in interactive two-way cable TV technology, and an installed system with nearly four years of operations already logged....still the world's largest singled interactive two-way cable system, in Columbus, Ohio. Probably the single most influencing factor which has guided the conception of our VIP 'One Single Solution' is the experience we've gained in both addressable control and interactive two-way field operations by virtue of that four years of operating experience. Yes, we had our share of startup pains, and we went through the usual 'new product' learning curve. But it's over now, and the new VIP System is the culmination of our efforts.

Pioneer's VIP System is a result of falling back out of the trees long enough to view the forest again. We think we've developed the one "total system" that can help cable operators meet today's addressability needs, yet also enable them to take advantage of the "new service" opportunities we see coming tomorrow.

All of which leads to our second piece of advice to any Cable Operator considering Addressable Control: (you guessed it)...buy the PIONEER VIP SYSTEM!



THE PIONEER V.I.P. SYSTEM...ONE, SINGLE SOLUTION