THE APPLICATION OF NATIONAL ANI TO PAY-PER-VIEW ORDERING

THOMAS J. NEVILLE, Viewer's Choice

MATTHEW D. MILLER, Viacom International

ABSTRACT

The benefits and architecture of a national ANI pay-per-view ordering system are described. Using AT&T's INFO1 800 service, VIEWER'S CHOICE will make available to all addressable cable operators a high volume, impulse PPV ordering system. Customers call an 800 number and hear an announcement confirming their orders. The AT&T network passes the customer's 10 digit phone number, together with the last 4 digits dialed, to a central node. This data is then transmitted to the cable headend via a satellite data channel. Inexpensive downlink hardware and software screen the data by area code and local exchange. System relevant phone numbers are then passed via a standard protocol to either the billing system or the addressable controller at the operator's discretion.

I. INTRODUCTION

On December 3, 1987, AT&T and Viewer's Choice announced plans to deploy the first national ANI pay-per-view ordering service. Beginning in the second quarter of 1988, cable customers in participating cable systems around the country will be able to order PPV events simply by dialing a toll free 800 number. The customer hears a recorded confirmation message, hangs up his phone, and views the event.

II. WHY ANI?

The national ANI order system is designed to provide cable customers and cable operators with simple, inexpensive, high volume impulse ordering for PPV. The decision to go ahead with the national service was based on successful completion of a trial performed in Milwaukee that began in June 1986 [See: "A Trial Of National Pay Per View Ordering", NCTA Technical Papers, 1986]. In the trial research, over 90% of surveyed cable customers describe ANI ordering as "very easy"(69%) or "easy"(22%).

For the cable operator, ANI automates the entire order taking process. Unlike Automated Response Units (ARU's), ANI orders can be received from both touch-tone and rotary dial phones. ANI also permits the handling of large volumes of calls at the last minute.

Fully automated ANI ordering means cable operators can offer more showings, and also that many more orders per showing can be quickly processed. Furthermore, for operators with an installed addressable base, ANI permits the introduction of impulse ordering with a modest headend expenditure, no in-home investment, and a low $.25 per call charge.

III. WHY NATIONAL?

National ANI will speed the growth of impulse PPV ordering, as well as the PPV business overall.

A national ANI service is accessible from any telephone in the country. It provides operators a turnkey ordering system with a simple customer interface. Requiring very low capital investment (under $10,000) for downlink equipment, national ANI becomes especially attractive for smaller addressable systems with under 25,000 subscribers.

The arrival of national ANI will also hasten the development of industry standards in billing and/or addressable controller interfaces. The availability of comprehensive print and on-air ANI launch and marketing materials from Viewer's Choice, with costs spread across a large national base, is an added plus for many operators.

For some cable operators, local ANI is a good solution to their PPV ordering needs. However, local ANI is readily available in only some areas of the country and often involves substantial capital investment, guarantees or long-term commitments. The need to deal with multiple phone companies sometimes further complicate implementation.

The subscriber's 10 digit home phone number, and the last four digits of the number dialed, are simultaneously transmitted via the AT&T network to the Viewer's Choice satellite uplink facility. Any calls from exchanges not yet converted to equal access will be routed to live operators for manual phone number input.

2. Satellite Uplinking And Transmission Of Order Data:

At the uplink, a Q.931 communications controller interfaces with the AT&T network via a 2-way protocol. Buffering capability of 30,000 call messages is provided within the controller. The data next passes through an AT&T 6386 work group station where it is time stamped and tabulated for transaction billing purposes.

Satellite transmission is accomplished using a GI 1500P uplink data conditioner and a proprietary simplex data transmission protocol employing extensive error correction and automatic retransmission to assure reliable data delivery. All uplink hardware is fully redundant.

IV. SYSTEM DESIGN

The system design has three principal components:

- Order collection and acknowledgement.
- Satellite uplinking and transmission of order data.
- Downlink screening of order data.

The end-to-end system is shown in Figure 1.

1. Order Collection and Acknowledgement:

Each PPV channel has a specific 800 phone number associated with it. The cable subscriber, using either a touchtone or rotary dial phone, calls an 800 number during a locally defined ordering window prior to the start of a PPV event. Customers are connected to a mass announcement node where they hear a recorded confirmation message.

3. Downlink Screening of Data:

Each downlink receives the data via a General Instruments model 1500C downlink card. The data then passes through an AT&T custom screener (AT&T 6312 PC plus custom software) which is pre-programmed to select out orders originating from designated local area codes and exchanges. Minimum screener capacity is a screen rate of 67 messages per second, with buffering capability of up to 3,000 messages. The combined cost of the GI downlink card and custom screener is under $10,000 per headend.

Screened data is then passed to the cable company billing computer or addressable controller using a simple protocol. Within the billing system or addressable controller, customers' phone numbers are matched to their accounts, while the four digit indicator of number dialed is matched to a specific channel and PPV event.

V. CONCLUSION

The nationwide service described here is the product of more than two years of planning, design, and system trial. Throughout, the objective has been to provide cable customers and operators with a simple, effective and economical means to enjoy the benefits of impulse PPV programming. We feel that this system meets our initial requirements of:

- Nationwide Scope
- Very High Capacity
- Ease and Simplicity
- Low Upfront Costs
- Full Automation
- Turnkey Installation and Operation

VI. ACKNOWLEDGEMENTS:

Bringing this system from trial to national rollout has involved close cooperation among people from numerous organizations: AT&T, CableData, Computoll, Viacom Cable, Viewer's Choice, and Zenith, to name a few. Special acknowledgements for the final system engineering as described in this paper should go to the AT&T Adaptive Design Engineering Group led by Steve Calabrese.

Figure 1