

Commerce, Science, and Transportation – Franchise Hearing  
Testimony of Brad Evans  
January 31, 2006

STATEMENT OF  
BRAD EVANS  
CEO CAVALIER TELEPHONE  
BEFORE THE  
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION  
UNITED STATES SENATE  
ON  
VIDEO FRANCHISING  
JANUARY 31, 2006

**Statement of Brad A. Evans  
Chief Executive Officer – Cavalier Telephone  
Committee On Commerce, Science, And Transportation  
United States Senate**

Mr. Chairman and Members of the Committee, I am Brad Evans, Chief Executive Officer of Cavalier Telephone. We appreciate the opportunity to testify here today before this committee.

Cavalier Telephone is a competitive local exchange telephone company headquartered in Richmond, Virginia. We provide local, long distance, and broadband services over 207,000 residential and 173,000 commercial telephone lines from Virginia to Southern New Jersey.

We are a success story of the 1996 Telecom Act. Unlike many other competitors, Cavalier has embraced the residential market and is adding 15,000 new customers each month. Our high speed internet access is second to none. Cavalier initiated services in Virginia in 1999 and since that humble beginning, has grown to a company with \$290 million in revenues and is profitable. We have made significant capital investments and now own one of the largest fiber optic networks on the East Coast.

The 1996 Telecom Act permits Cavalier to interconnect its network with Verizon, and enables Cavalier to access customers through the leasing of Verizon's local loops covering the so-called last mile. The preservation of access to unbundled loops is of primary importance to Cavalier and other competitive providers. Due to the fact that we use our own facilities and control our own telephone infrastructure up to the last mile, we are able to bring new and innovative services to our customers at considerable savings. I am here today, to describe to you a new technological innovation that will revolutionize how consumers obtain and pay for TV services and how current laws may impede the deployment of this service unless the federal government acts to preclude that circumstance.

Cavalier is an industry pioneer and is preparing to launch a competitive TV service in Richmond, Virginia. The TV service is dubbed "IPTV", and utilizes MPEG 4 video compression to deliver over 150 channels over Cavalier's existing DSL network. This service will have clear digital picture quality, interactive programming guide, and all sets will have access to video-on-demand and other advanced features. Cavalier will offer consumers 150 video and music channels, local telephone service, and high speed broadband at a savings to consumers compared to current alternatives.

The Cavalier TV network will reach out to approximately 2 million potential customers, in the major markets of Philadelphia, Baltimore, Wilmington, Washington, DC, Richmond, and Virginia Beach. *Cavalier TV service will run over the existing copper-based broadband network.* We are not digging up the streets, nor trenching on any consumers' property. We can stream our TV signal over the existing DSL network. If you can get a Cavalier high speed interconnection, then you can get Cavalier TV.

A unique aspect of our service is that it runs over existing telephony infrastructure, and consequently the older neighborhoods which are served by copper wires will be eligible for our service. Our TV service will have greater availability for the condensed inner-city residents than suburban residents.

But the beauty of the technology is that it is readily deployable, and can easily be adapted to small town rural communities. Already, small rural telephone companies are asking Cavalier to provide IPTV video feeds. With video, rural telephone companies will finally have an economically feasible way to expand their broadband footprint.

However, customers will not realize these savings, unless new laws are passed to facilitate its introduction. Today Cavalier is faced with a patchwork franchise process, governed by individual communities and/or counties. In our service areas, there are hundreds of governmental agencies that would govern TV franchise authority. Under current law, every local governing authority exercises their own discretion, towards creating a framework for TV services. I believe that it would be impossible to reach agreement with many of the municipalities, absent any overarching framework. The time, energy, and expense would stall our deployment, and could result in Cavalier being forced to simply forgo service in several given communities. Competition and competitive choice should not be held back. Consumers should be able to obtain significant cost savings in their cable TV bill as soon as is practicable.

Cavalier hopes to deploy its IPTV service throughout all its service areas by the end of the 3<sup>rd</sup> quarter of this year. That means that the major metropolitan areas from Virginia, along the east coast, up to southern New Jersey will be relieved from the stranglehold of the current cable TV providers. Consumers stand to gain considerably. But this technology has to be fostered. We therefore urge you to adopt legislation that would provide a new framework for competitive entry:

1. Franchise authority should be granted on a state-wide basis.
2. The application process should promote ease of entry.
3. Current governmental revenues, public channels should be sustained.
4. Copper-based IPTV providers should be exempt from any requirements for a mandatory buildout. A buildout requirement would make IPTV investments totally unfeasible.

A legislative model that adopts these concepts would ensure a rapid deployment of this technology, and promote consumer choice and lower prices. We have seen how competition worked in the telecommunications market; it is now time to launch competition into the TV business, for more choice, customized services, and lower prices.

Mr. Chairman and Members of the Committee, thank you again for this opportunity to share our views with you. We look forward to working with you in any way we are able to help craft effective legislation.

Commerce, Science, and Transportation – Franchise Hearing  
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**Company Profile**  
**Cavalier Telephone**

## **COMPANY OVERVIEW**

Cavalier, headquartered in Richmond, Virginia, is a rapidly growing, facilities-based competitive local exchange carrier and provider of integrated communications services in the eastern U.S. The Company provides local and long distance voice, dedicated data, and Internet services over its robust network to both business and residential customers. As of December 31, 2005, Cavalier had approximately 35,000 business customers, 142 wholesale customers and 208,000 residential access lines. Cavalier's principal markets include Delaware, Maryland, New Jersey, Pennsylvania, Virginia and Washington D.C.

Cavalier has built its network via prudent capital deployment and a series of low-cost, value-creating acquisitions in Mid-Atlantic markets. Since 2001, Cavalier has acquired and successfully integrated \$1 billion of fixed assets. This has allowed Cavalier to greatly extend its facilities-based network. Each acquisition has complemented Cavalier's strong organic growth in terms of core network expansion and customer base.

Importantly, the Company has successfully migrated its network from traditional telephony services to next generation offerings, such as digital

telephony and DSL. The Company has spent over \$215 million on its network to provide the breadth and flexibility to address the complex voice and data needs of its customers. The network is comprised of over 3,000 miles of metro fiber and more than 8,200 miles of long-haul fiber (including the recent acquisition of Elantic Networks Inc. "Elantic") collocated in 215 Verizon central offices, 4 interexchange gateways and 23 carrier points of presence. By having a flexible network, Cavalier can offer the latest technology to its customers sooner than most competitors. For example, in 2003 the Company rolled out a VoIP platform that provided substantial consumer savings and it expects to launch a DSL-based, IP video service in Richmond, VA as part of a triple play (voice, data, video) bundled offering to residential customers in Q1 2006. This IP video offering will be the first offering to use the advanced MPEG4 format.

In order to optimize network costs, Cavalier has deployed Time-division Multiplexing ("TDM") and IP backbone facilities to transport traffic between eight switching centers. By providing services over its own network facilities, usually only leasing "the last mile" from the ILEC, the Company ensures service quality and reliability, an ability to provide a full suite of advanced services and reduces exposure to regulatory uncertainty. As of December 31, 2005, 99%+ of Cavalier's access lines were served by the Company's network.

During the year ended December 31, 2005, Cavalier generated net revenue and EBITDA of \$290.4 million and \$55.6 million, respectively. Since inception in 1998, Cavalier has increased access lines consistently, as well as revenue, EBITDA, and free cash flow. Cavalier's management has lead the Company to remain free cash flow positive (on a levered basis) for the last thirteen quarters.

Cavalier's success is based on its disciplined approach to network deployment and acquisitions, and its ability to deliver end-to end communications solutions to a broad, underserved portion of its target markets. The Company is managed by experienced senior executives with a history of success in founding and building communications companies including CLECs, and with a proven ability to execute business plans.

### **INDUSTRY OVERVIEW**

Through the passage of the Telecommunications Act of 1996 ("Telecom Act"), the telecommunications industry, once dominated by a monopolistic incumbent local exchange carrier in each region, was opened to competition. The

FCC at the federal level and Public Utility Commissions (PUCs) at the state level have implemented the Telecom Act through a series of rules and regulations. The primary objective of the Telecom Act and subsequent FCC and PUC rules has been to promote competition in the local exchange business, with attendant benefits to businesses and consumers:

- Required incumbent carriers to unbundle certain network elements, making them available to alternative carriers.
- Established wholesale and cost-based prices that ILECs could charge competitors for these Unbundled Network Elements ("UNEs").
- Formalized the procedure for resolving disputes among carriers.

The primary competitors in local service markets are the traditional telephone companies' ILECs, which provide local telephone services to most telephone customers within their respective service areas, the surviving facilities-based CLECs, resellers of ILEC services, including companies using UNE-P, and cable television MSOs, who have recently begun selling voice and data services extensively to residential consumers and also to some business customers. At present, the Company faces competition in most of its markets from companies in each category, though the number of CLEC competitors has been materially

reduced, with generally not more than two significant CLEC competitors in each market.

CLECs can be broadly segmented into three groups:

- Facilities-based providers - This category of service providers delivers voice and data service to end-users either exclusively or predominantly over their own facilities. Facilities-based providers, such as Cavalier, typically operate their own switches, and transport traffic to and from their switches over either leased or owned transport facilities, and either build their own or lease last-mile facilities from the ILECs. These last-mile facilities include the connection to the end-user customer premises from the serving central office, generally referred to as the local loop, and the facilities between the serving central offices and other central offices that are necessary for the routing of calls through the local network, generally referred to as interoffice transport. The Telecom Act required that the local loop and interoffice transport facilities be made available to competitors on an unbundled basis. These unbundled facilities are offered today by the ILECs in accordance with the Telecom Act and include voice-grade and high capacity Unbundled Network Element - Loops (UNE-Ls) (eg, DS0, T1 and DS3 circuits) and high capacity interoffice transport.

- Switch-based providers - These providers own a limited network typically made of some switch facilities and long-haul fibers. Most providers offer voice and data services to business customers. Unlike facilities-based providers, switch-based providers lease the facilities of other providers for the majority of their network, including last-mile facilities.
- Non-facilities-based providers - These providers do not operate their own facilities but instead use the facilities of other providers exclusively. Non-facilities based providers resell an already assembled retail service that is offered to them at a wholesale discount and re-brand these services to their end user customers. Recent FCC rulings have negatively impacted non-facilities-based UNE-P providers and established a trend towards encouraging facilities-based competition.

The telephone industry is also growing as part of the continued demand for the Internet and Internet Protocol services. Internet telephony, known as Voice over Internet Protocol (VoIP) technology, is an alternative to traditional voice service technology. VoIP consumers generally utilize a fixed-price

broadband connection to make phone calls and avoid telecommunications usage charges. VoIP converts the human voice into digitalized units, which it then bundles into packets that can stream over a network (such as the Internet) to be reassembled into an analog voice signal at a switch or the receiving end of the phone call. The technology offers advanced features to consumers and potentially lowers service delivery costs to carriers. Cavalier has been providing these services through its advanced network to business and residential clients since 2003.

### Residential Services

Cavalier offers its residential customers competitively priced voice and data services to meet their communication needs. Cavalier's residential services include basic dial tone, long distance, dial-up Internet access and DSL (ADSL2+, MVL2, GSHDSL). In addition, Cavalier offers the following enhanced features:

#### **Vertical Features Offered by Cavalier**

- |                            |                          |
|----------------------------|--------------------------|
| • Voicemail                | • 3-way calling          |
| • Anonymous call rejection | • Repeat dialing (*66)   |
| • 900 toll block           | • Talking call waiting   |
| • Caller ID                | • Unlimited *69          |
| • Call-forwarding          | • Speed dialing          |
| • Call block               | • Remote call-forwarding |
| • Call waiting             | • Online bill viewer     |
-

Cavalier's strategy is to provide compelling value to consumers via bundled sale of local, long distance and data, which it has done since its inception in 1998. The Company typically offers residential services at a substantial discount (20%- 25%) to the incumbent operator.

Cavalier unveiled its ADSL2+ in all markets in 2005. Cavalier's ADSL2+ provides the fastest broadband connection speeds with up to 15MB downloads for only 25/month.

In January 2004, Cavalier launched its PHONOM residential VoIP offering to provide customers with a robust, cost-effective alternative to traditional PSTN voice services. The Company offers a full spectrum of voice and data solutions over its IP infrastructure. PHONOM can be offered as a standalone product or bundled with the Company's other data and Internet services and can save residential customers as much as 25% on their current communications costs due to the nature of the IP medium.

Cavalier provides 208,000 local and long distance residential lines and approximately 27,000 DSL lines. The Company's addressable residential market consists of 4.9 million lines from New Jersey to Norfolk.

### IP TV Opportunity

In the first quarter of 2006, Cavalier plans to roll out its "Triple Play" bundled service of Voice, Data and Video. Cavalier combines its dial tone voice and high-speed DSL services with an all-digital, interactive TV service to form the bundle. Customers receiving Cavalier's "Triple Play" bundle enjoy 25% to 35% savings over services from competing providers. After service rollout to markets in the mid-Atlantic region, Cavalier will pass about 2 million homes for its "Triple Play" service offering.

Cavalier's broadband TV services will include hundreds of local and national broadcast channels along with an extensive library of Video-On-Demand content covering a wide spectrum of genres and interests. On-screen ordering of programs from the VOD library as well as Pay-Per-View events (right up to the start of the event), allows customers to personalize the TV experience in the home.

Cavalier's all-digital super head-end in Richmond acquires all the broadcast and on-demand programming and performs all the MPEG4 encoding/transcoding and encryption. All the management systems required to support broadcast and interactive services, network and facilities management, and back-office interfaces reside at the head-end. The transport network uses Gig-E switches and SONET rings to connect the Richmond head-end with the Central Offices throughout the Cavalier service areas.

From Central Office DSLAMS, Cavalier leverages the latest ADSL2+ line-coding technology to simultaneously offer multiple video streams to each household over existing phone lines. The ADSL2+ line rate of up to 15 mbps to each customer allows Cavalier to connect multiple Set-top Boxes (STB) per residence. Each STB at the customer premises is uniquely identified and managed by the middleware in the Cavalier network.

At the heart of the Cavalier Broadband TV service is the Interactive Programming Guide designed to maximize the enjoyment and ease of navigation of the broadband TV service. The menus and buttons presented on the TV screen allow the user to navigate the many features available including the on-screen

programming guide, parental controls, favorites lists, gaming, and account management.

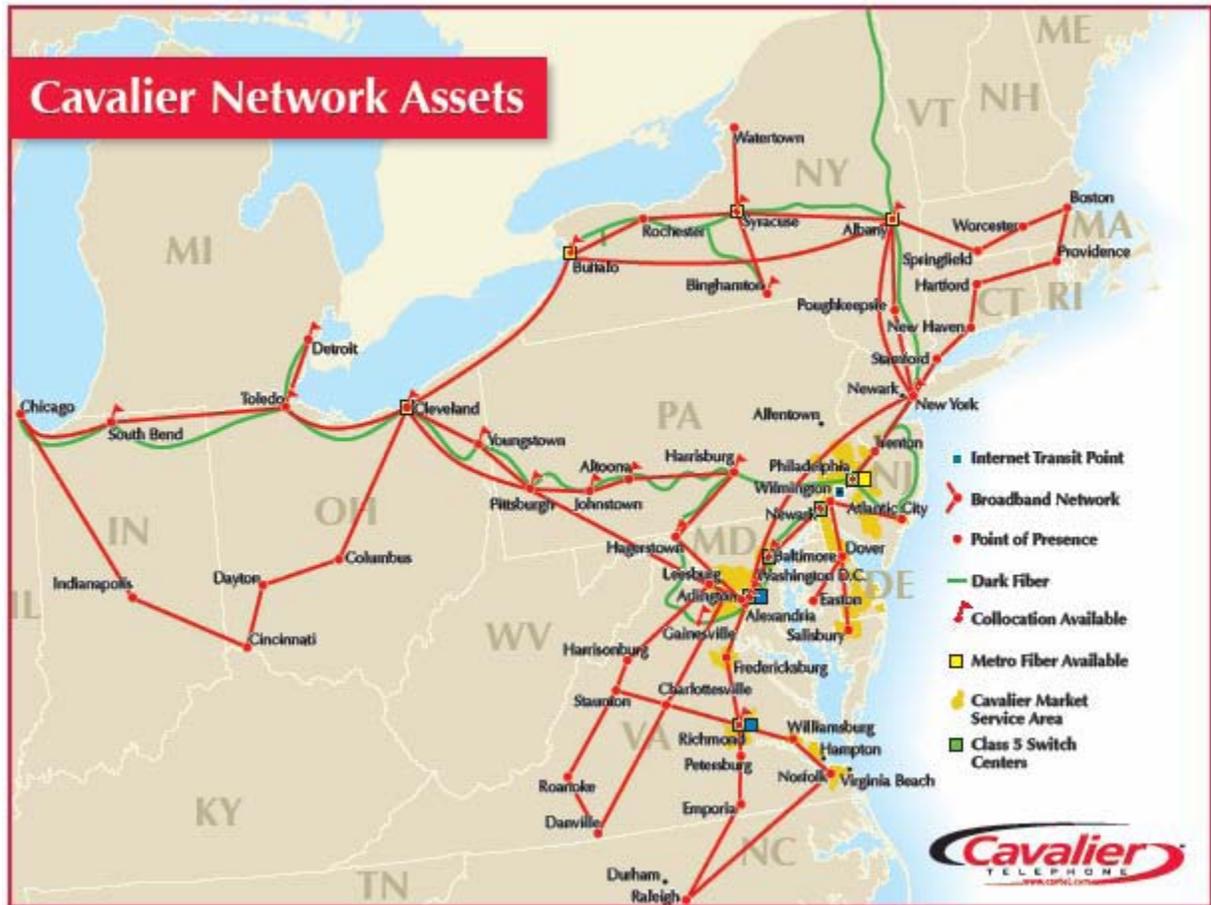
Cavalier's all-digital and interactive TV service positions Cavalier favorably in the delivery of video services. This latest technology, combined with a robust, reliable and secure infrastructure further strengthens Cavalier's "Triple Play" business case while The Company's value centric customer message will resonate well with consumers in the marketplace.

#### Business Services

Cavalier offers local and long-distance voice, dedicated data, and Internet services over its robust facilities-based network focused on serving the demands of communications-intensive end-users. Cavalier's enterprise service offerings are tailored to meet the specific needs of small and medium-sized businesses, government agencies and wholesale carriers. Cavalier offers both voice and data services, either as a bundled package or a standalone product in all of its current markets.

**NETWORK OVERVIEW AND INSTALLED INFRASTRUCTURE**

Cavalier's network was designed and deployed with the goal of economically scaling to meet the increasingly complex communication needs of the Company's customers. Since 2001, Cavalier has acquired approximately \$1.0 billion of fixed assets. In order to optimize recurring network costs, Cavalier has deployed core TDM and IP backbone facilities to transport traffic between its eight strategically located switching centers. The network is comprised of more than 3,000 miles of metro and long-haul fiber miles (excluding Elantic) and is collocated in 215 Verizon COs, 4 interexchange gateways and 23 carrier POPS. By providing services utilizing its own facilities built deep into the customer footprint, the Company (i) ensures service quality and reliability, (ii) maintains attractive gross margins and cash flow, (iii) provides advanced services, (iv) has greater control over customer care and (v) reduces exposure to regulatory risks.



Cavalier's voice network includes eight Cavalier switching centers supported by four Lucent 5ESS and four Nortel DMS 500 switches. The Company's switching centers are interconnected via self healing SONET OC-48, SONET OC-12, SONET OC-3 and DS-3 lines. Cavalier has deployed various vendor platforms in each of its end offices to support the transport of traffic including Lucent DMX, Fujitsu FLM and Cisco 1500. The Company connects its customers to its digital switching centers via SONET OC-48, SONET OC-12, SONET OC-3, DS-3 and T1. The core of the Cavalier IP backbone is supported by

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two Cisco 12000 routers, a Juniper M2 router and three Cisco BPX 8600 ATM switches.



# Cavalier Broadband TV *Overview*



**Preliminary Marketing Document – Subject to Change**



## Cavalier Broadband TV

- 150 video and audio channels – Value package
- Premium and specialty packages optional
- Video on Demand
- Electronic program guide included
- Caller name and number on screen
- 100% digital IP quality



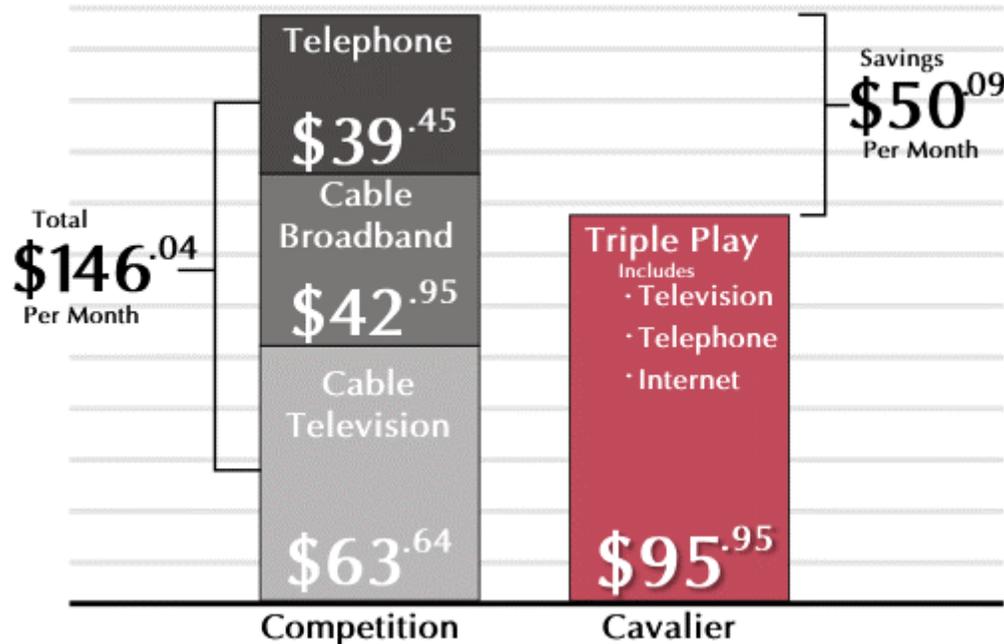
## Cavalier Triple Play

- **Local Telephone Service**
  - Unlimited local calls
  - 12 features including voicemail, caller ID
  - 5 cent long distance
- **High speed Internet – 10-15mbps**
  - Free DSL modem
  - 3 e-mail addresses
  - Personal web space
- **Broadband TV**
  - 150 video and audio channels
  - 2 set top boxes
  - Interactive program guide



## Competition Leads to Price Savings

### Price Comparison



**Annualized savings of over \$600!**

\*Comcast Digital Classic service, 2 set top boxes (Richmond, VA)

\*\* Verizon Virginia – unlimited local with 3 top calling features



## Triple Play Customer Benefits

- **One Bill**

Cavalier combines Television, Telephone and Internet service into one cost efficient package all on one bill.

- **Bundle Savings**

The combined Cavalier services of Video, Broadband and Local Phone provide customers with a bundled savings of over \$600 annually.

- **Choice**

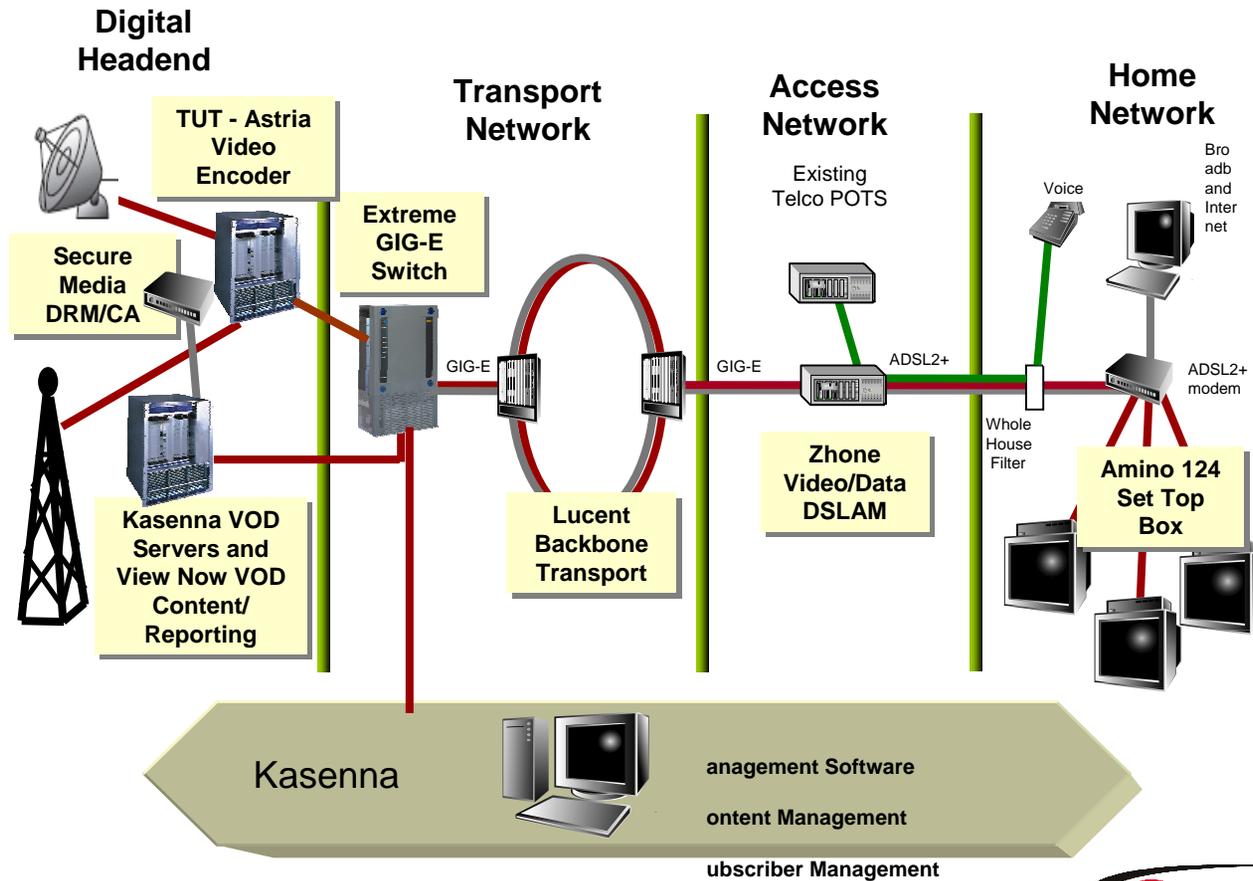
Video customers will finally have a quality choice.

- **Better Technology**

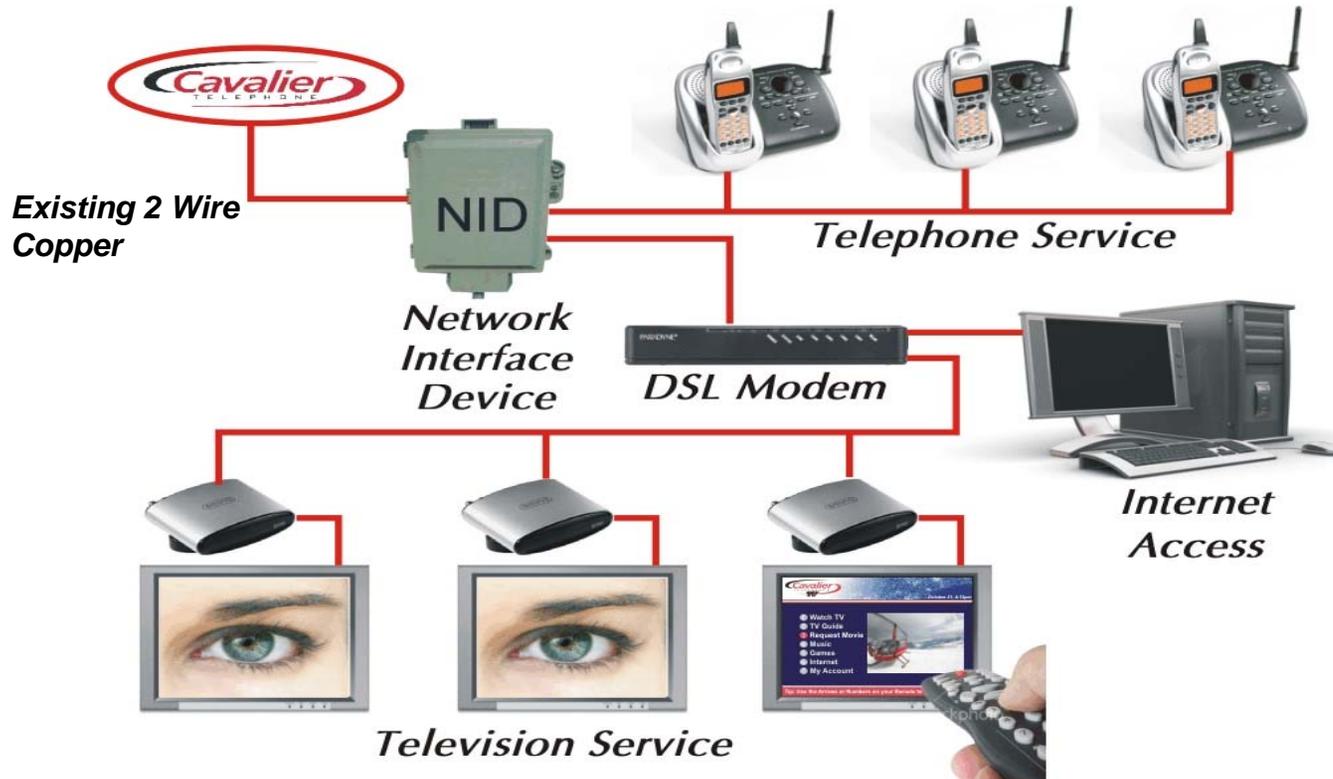
The pure digital signal provides a superior 100% crystal clear all digital picture. No more ghosting, fuzzy pictures, weather outages or signal fade. Features include an intuitive Interactive Guide, parental controls and on-screen Caller ID. Customers can watch TV, surf the Internet, and talk on the phone all at the same time.



# Architecture Overview



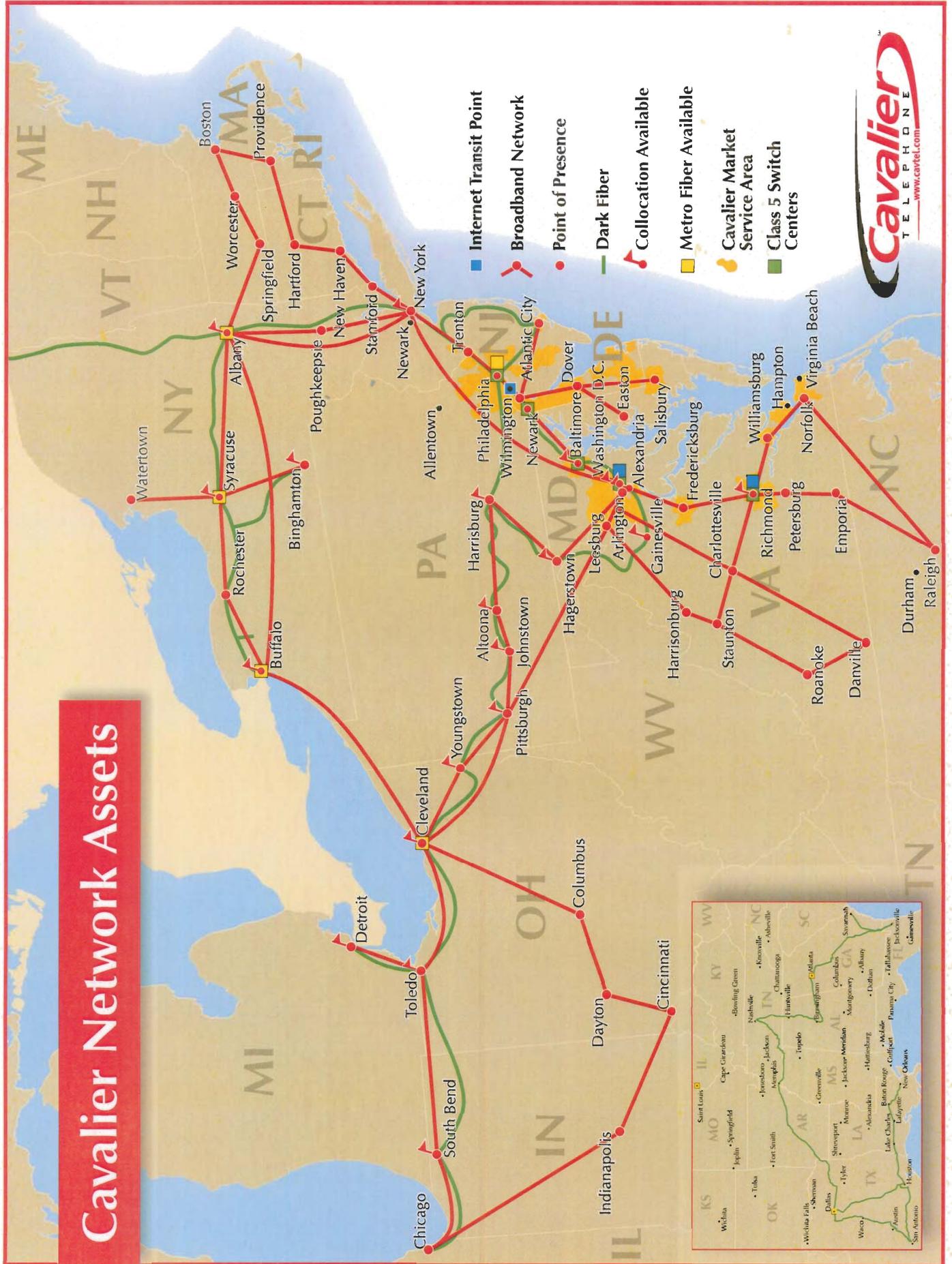
# IPTV: In-Home Network



## Content Security

- **End-End encryption of Broadcast and VOD content**
  - Sophisticated decryption-key management
- **Each STB uniquely identified and managed**
  - Clone STBs detected and disabled
  - STBs unique to customer ADSL2+ connection
- **Physically secure digital content delivery**
  - STB has no digital output
- **Macrovision copy protection on STB Analog Output**
  - Cripples VCR copying





Richmond Value Pack Lineup		\$39.95		Value Pack Plus		Premium Movie Packages		Music Choice Digital Music	
#	Channel	#	Channel	#	Channel	#	Channel	#	Channel
1	VCD Information	140	BBC America	400	HBO East	440	Starz!	500	Showcase
2	WGVE PBS	141	Military History	401	HBO West	441	Starz! Kids and Family	501	Today's Country
3	WGWV PBS	142	Crime and Investigation	402	HBO2 East	442	Starz! In Black	502	Classic Country
4	GBS e Xtra	143	Discovery Times	403	HBO Signature East	443	Starz! Edge	503	Bluegrass
5	The Tube	144	Discovery Home	404	HBO Family East	444	Starz! Cinema	504	R&B and Hip-Hop
6	WTVR CBS	145	Military Channel	405	HBO Comedy	445	Starz! Comedy	505	Classic R&B
7		146	Sleuth	406	HBO Comedy Zone	446	Encore WAMI	506	Smooth R&B
8	WRIC ABC	147	Lifetime Real Women	407	HBO Comedy Zone	447	Encore (East)	507	R&B Hits
9		148	CNBC World	408	Rap	448	Encore Action (East)	508	Rap
10	HCTV17	149	Fuse	409	Metal	449	Encore Mystery (East)	509	Metal
11	WRLH FOX	150	Ovation	410	Showtime East	450	Encore Love (East)	510	Rock
12	WWBT NBC	151	Family Net	411	Showtime West	451	Encore Dramas (East)	511	Arena Rock
13	WUPV UPN	152	AZN	412	Showtime Top East	452	Encore Westerns (East)	512	Classic Rock
14	Weather Plus - WWBT	153	Food Network	413	Showtime Showcase	453	Cinemax	513	Alternative
15	Leased Access/Rich TV	154	DIY	414	Showtime Beyond	454	Starz! SuperPak	514	Retro-Active
16	ESPN	155	Fine Living	415	Showtime Beyond	455	WMAX	515	Electronica
17	ESPN2	156	Turner Classic Movies	416	Showtime Extreme	456	atMAX	516	Dance
18	ESPN3	157		417	Showtime Next	457	5StarMAX	517	Adult Alternative
19	ESPN Classic	158		418	Showtime Family Zone	458	OuterMAX	518	Soft Rock
20	ESPN4	159		419	Showtime Women	459	Starz!	519	Hit List
21	Speed	160		420	TMC East	460		520	Party Favorites
22	Outdoor Life Network			421	TMC West			521	90s
23	Golf Channel			422	TMCXtra			522	80s
24	Tennis Channel			423	Flix			523	70s
25	Disney Channel			424	Sundance Channel			524	Solid Gold Oldies
26	Toon Disney			430	Cinemax East			525	Singers and Standards
27	Nickelodeon			431	Cinemax West			526	Big Band & Swing
28	NICK 2			432	MoreMAX East			527	Easy Listening
29	Nicktoons			433	ActionMAX East			528	Smooth Jazz
30	Neggin			434	ThrillerMAX			529	Jazz
31	NICK GAS			435	WMAX			530	Blues
32	Discovery Kids			436	atMAX			531	Reggae
33	Boomerang			437	5StarMAX			532	Soundscapes
34	Cartoon Network			438	OuterMAX			533	Classical Masterpieces
35				440	Starz!			534	Opera
36	ABC Family			441	Starz! Kids and Family			535	Light Classical
37	Hellmark			442	Starz! In Black			536	Show Tunes
38	American Life			443	Starz! Edge			537	Contemporary Christian
39	PAX			444	Starz! Cinema			538	Gospel
40	Familyland			445	Starz! Comedy			539	Radio Disney
41	TVLand			446	Encore WAMI			540	Sounds of the Seasons
42				447	Encore (East)			541	Musica Urbana
43	FOX News			448	Encore Action (East)			542	Salsa y Merengue
44	CNN			449	Encore Mystery (East)			543	Rock 'En Espanol
45	CNN Headline News			450	Encore Love (East)			544	Pop Latino
46	CNBC			451	Encore Dramas (East)			545	Mexicana
47	MSNBC			452	Encore Westerns (East)				
48	The Weather Channel								
49	CNN International								
50	ABC News Now								
51	Boomerang								
52	C-SPAN								
53	C-SPAN 2								
54									
55	USA Network								
56	TBS								
57	TNT								
58	WGN								
59	SpikeTV								
60	Comedy Central								
61	Game Show Network	140	BBC America	400	HBO East	440	Starz!	500	Showcase
62	FX	141	Military History	401	HBO West	441	Starz! Kids and Family	501	Today's Country
63	Bravo	142	Crime and Investigation	402	HBO2 East	442	Starz! In Black	502	Classic Country
64	Lifetime Television	143	Discovery Times	403	HBO Signature East	443	Starz! Edge	503	Bluegrass
65	ScopNet	144	Discovery Home	404	HBO Family East	444	Starz! Cinema	504	R&B and Hip-Hop
66	E!	145	Military Channel	405	HBO Comedy	445	Starz! Comedy	505	Classic R&B
67	G4 Tech TV	146	Sleuth	406	HBO Comedy Zone	446	Encore WAMI	506	Smooth R&B
68	BET	147	Lifetime Real Women	407	HBO Comedy Zone	447	Encore (East)	507	R&B Hits
69	LOGO	148	CNBC World	408	Rap	448	Encore Action (East)	508	Rap
70	Style	149	Fuse	409	Metal	449	Encore Mystery (East)	509	Metal
71	Sci-Fi Channel	150	Ovation	410	Showtime East	450	Encore Love (East)	510	Rock
72	Court TV	151	Family Net	411	Showtime West	451	Encore Dramas (East)	511	Arena Rock
73	WealthTV	152	AZN	412	Showtime Top East	452	Encore Westerns (East)	512	Classic Rock
74	Oxygen	153	Food Network	413	Showtime Showcase	453	Cinemax	513	Alternative
75	Telemundo	154	DIY	414	Showtime Beyond	454	Starz! SuperPak	514	Retro-Active
76		155	Fine Living	415	Showtime Beyond	455	WMAX	515	Electronica
77	Discovery Channel	156	Turner Classic Movies	416	Showtime Extreme	456	atMAX	516	Dance
78	The Learning Channel	157		417	Showtime Next	457	5StarMAX	517	Adult Alternative
79	Animal Planet	158		418	Showtime Family Zone	458	OuterMAX	518	Soft Rock
80	Travel Channel	159		419	Showtime Women	459	Starz!	519	Hit List
81	Discovery Health	160		420	TMC East	460		520	Party Favorites
82	Science Channel			421	TMC West			521	90s
83	A&E			422	TMCXtra			522	80s
84	History			423	Flix			523	70s
85	Biography			424	Sundance Channel			524	Solid Gold Oldies
86	History International			430	Cinemax East			525	Singers and Standards
87	National Geographic			431	Cinemax West			526	Big Band & Swing
88	HGTV			432	MoreMAX East			527	Easy Listening
89				433	ActionMAX East			528	Smooth Jazz
90	Neggin			434	ThrillerMAX			529	Jazz
91				435	WMAX			530	Blues
92				436	atMAX			531	Reggae
93				437	5StarMAX			532	Soundscapes
94	Lifetime Movies			438	OuterMAX			533	Classical Masterpieces
95	Hallmark Movie Channel			440	Starz!			534	Opera
96	Fox Movie Channel			441	Starz! Kids and Family			535	Light Classical
97				442	Starz! In Black			536	Show Tunes
98	MTV			443	Starz! Edge			537	Contemporary Christian
99	MTV2			444	Starz! Cinema			538	Gospel
100	MTV Jams			445	Starz! Comedy			539	Radio Disney
101	MTV Hits			446	Encore WAMI			540	Sounds of the Seasons
102	VH1			447	Encore (East)			541	Musica Urbana
103	VH1 Classic			448	Encore Action (East)			542	Salsa y Merengue
104	VH1 Soul			449	Encore Mystery (East)			543	Rock 'En Espanol
105	VH1 Country			450	Encore Love (East)			544	Pop Latino
106	BET on Jazz			451	Encore Dramas (East)			545	Mexicana
107	CMT			452	Encore Westerns (East)				
108	Great American Country								
109									
110									
111									
112	ShopNBC								
113	QVC								
114									
115	Educational Access								
116	Public Library								
117	Chesterfield Schools								
118									
119									
120									

Subject to change pending availability of programming and contract completion

# CLEC Trumps Big Guys With Triple Play | By Fred Dawson

Mid-Atlantic CLEC Cavalier Telephone has made a dash to the front of the pack in the race to launch next-generation IPTV, setting in motion developments that could roil the market far beyond the carrier's 2-million household footprint.

In November, the company said it would launch IPTV over an MPEG-4 platform in Richmond, Va., by sometime in December, which would be the first commercial use of the advanced compression technology for delivery of television service in this country. AT&T Inc. (formerly SBC Communications Inc.) said it, too, was set to move forward from its initial field trial to a "controlled launch" in San Antonio around the turn of the year, but plans announced by that carrier's executives suggest the initial launch will be more limited in scope than the rollout described by Cavalier.

Bragging rights to being first aside, the move by Cavalier is significant for a number of reasons having to do with the company's status as a small CLEC taking on major players like Verizon Communications Inc., Comcast Corp. and other cable companies in other markets beyond Richmond at a more aggressive pace than much larger telcos have been willing to embrace. "We think we'll give everyone a run for their money," says Cavalier CEO Brad Evans.

If Cavalier pulls it off, it will be showing the rest of the market that it's possible to win major content suppliers' support for MPEG-4 delivery of their programs over an ADSL2+ network and that it can be done without relying on pre-integrated solutions from major suppliers. A demonstration that IPTV over MPEG-4 is ready for prime time could trigger a rash of service launches among telcos who have been reluctant to move forward without assurance that it can be done, say industry suppliers.

But, first, there still were some loose ends at press time that Cavalier had to address before it could be assured of a successful launch on schedule. These included completion of negotiations with the City of Richmond that would allow the company to proceed without a cable TV franchise. And there still were some content rights negotiations to be completed, although company officials expressed confidence that those contracts would be finished in time to fill out the programming slate.

Assuming these issues are handled, Cavalier — branding itself Cavalier Telephone and TV — will offer a bundle of 105-plus TV channels, VoD and 45 music channels together with high-speed Internet access and a feature-rich circuit-switched or IP voice service for a total price of \$95.95 per month. That represents about a \$50 discount from a comparable package of services from other providers, Evans says.

While Comcast has a switched voice service operative in the Richmond area, it is not actively marketing a triple-play bundle, waiting instead to roll out its new VoIP platform. Verizon has not indicated when it plans to bring video service to Richmond, though the carrier has obtained a franchise for Fairfax County in northern Virginia, where it overlaps with Cavalier in some areas. Verizon has not signaled when it will launch TV service there.

Thus, for some period of time, Cavalier will be the only triple-play provider in its initial market. The CLEC, which presently serves about 30,000 customers in Richmond with voice, high-speed data or both, will offer IPTV to all residents in reach of ADSL2+ bit streams totaling 9mbps or higher, Evans says, adding that the top rate for the technology is 15mbps. This target area consists of about 150,000 homes passed out of the total of 300,000 passed by the carrier's Richmond network.

"We're calibrating the video streams at approximately 2mbps, which allows us to offer multiple streams of video and to provide a good broadband service as well," Evans notes. By operating the ADSL2+ ports from DSLAMs supplied by the Paradyne unit of Zhong Technologies Inc. at "full throttle," Cavalier ensures that whatever bandwidth isn't being used for TV channels at any given time automatically defaults to the Internet access service.

"This dynamic bandwidth capability is a big advantage for us," Evans says. "We'll communicate with individual customers as to what their bandwidth limits are and how many TV sets we can serve."

Cavalier, with more than 200,000 residential and 35,000 business customers throughout its mid-Atlantic territory, intends to expand rapidly its video service footprint next year with the goal of offering service to a base of 2 million households by the end of the second quarter. The ADSL2+ network already is built out to these markets, which in addition to Richmond, includes Fredericksburg, Hampton Roads and parts of northern Virginia; Baltimore and the Eastern Shore of Maryland; the greater Philadelphia metro area; three Delaware counties; and Atlantic City and other parts of New Jersey near Philadelphia.

One reason Cavalier has been able to jump out ahead of other telcos who are counting on rolling out IPTV over the MPEG-4 compression platform is the company is using a single-chip set-top box supplied by Amino Technologies plc that relies on a DSP from Texas Instruments Inc. Most telcos are waiting for the lower-cost single-chip solutions that Amino and other set-top suppliers are committed to supplying when new ASICs from STMicroelectronics, Sigma Designs Inc. and other manufacturers become available.

Vendors say these set-top on a chip (SoC) solutions will be available for mass production in terminals by sometime in the first quarter. While some suppliers suggest the terminals will be ready for deployment by then, others say it will take several weeks to complete software integration with various IPTV middleware suppliers and other components before deployments are feasible commercially.

"The thing holding back IPTV over MPEG-4 has been the cost of the CPE," notes Ryan Petty, vice president of product management at Siemens' Myrio unit. "The market will take off with the availability of SoCs. At that point, MPEG-4 becomes a drop-in replacement for MPEG-2 set-tops."

But, Petty cautions, "you'll see announcements from various parties releasing set-tops in the Q1 timeframe, but, knowing the status of the

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software from the chip manufacturers, it will be Q2 before those boxes are turned up in the field." Myrio has been working with the decoder chip suppliers and encoder manufacturers on the integration process with H.264 compression, the Advanced Video Coding technique now used in MPEG-4. But, still, it will take time once the final versions of the chips are incorporated into set-tops to ensure smooth operations, Petty says.

Concern over program licensing to untested MPEG-4 IPTV platforms also has been a delaying factor as many telcos wait to see what happens beyond Q2. By demonstrating a small telco can achieve the systems integration challenges across all IPTV hardware and software components from disparate vendors to the satisfaction of content suppliers, Cavalier may be breaking the barriers that have held back many other companies.

"A lot of companies, including Tier 2 independents, have been holding back, but when they see smaller telcos like Cavalier moving forward, that could trigger a lot of activity," says Keith Wymbs, director of strategic marketing at Tut Systems Inc., which is supplying the encoding system for the Cavalier rollout and for a number of other smaller telcos that are planning service launches in the first half of '06. Wymbs notes that many larger independents have been leaning toward use of the Microsoft MSTV platform but now may be reassessing their strategies in light of the quickening pace of IPTV rollouts over alternative platforms.

Others agree. An executive with another IPTV technology supplier, speaking on background, reports his company is close to announcing a contract with a Tier 2 independent (Tier 2 telcos are the next group down from the Bell companies). He says most Tier 2 companies were waiting for the market leaders "to bring their solutions to them, but they're seeing the delays and technology challenges on that side and are becoming impatient. I don't think they're going to wait if other telcos are demonstrating you can move forward on different platforms."

Getting programmers to sign up for carriage over an MPEG-4 IPTV network has been a painstaking task involving completion of detailed technical questionnaires and, in some cases, on-site visits from media company engineers, notes Andy Lobred, vice president of product management and marketing at Cavalier. But, he adds, when these people saw the system in operation in the pre-launch field trial, they were easily won over.

"When you see 100 percent digital side by side with analog TV, the difference is night and day," Lobred says. "Once the programmers see the quality of our picture, they don't have an issue with MPEG-4."

But at press time there still were some significant, unnamed programmers not yet on board. All told, a little more than 100 programmers were signed up, including premium channels as well as most of the networks that are included in the 150-channel basic bundle of video and music services. Three of the four major local TV stations were signed up as well.

Another MPEG-4 licensing challenge is the motion picture studios, which have to sign off on the technology if their movies are to be offered over Cavalier's VoD system. Movie aggregation for VoD is being handled by ViewNow, a unit of Kasenna Inc., which is supplying the middleware platform and software development kit for Cavalier's IPTV service. "That process [with the studios] is moving forward quickly," Lobred says. "We'd like to see all the studios on board as soon as possible. We're not at the finish line yet, but we're getting close."

The other major unresolved issue in the pre-launch phase had to do with the cable franchise question. A bill that would replace local franchising with a state-granted license was introduced in the state legislature in early 2005 but was still in committee awaiting further action at the start of the year.

Evans says Cavalier has been in communication with Richmond officials but sees no need for a cable franchise insofar as it simply is launching another IP service over its existing infrastructure. "This puts us in a different light from some other telephone companies," he says, echoing AT&T's argument that a new video network like Verizon's fiber infrastructure is a different case from delivery over DSL.

**If Cavalier succeeds in persuading local officials there's no need for a franchise when IPTV is delivered over an existing DSL network, it will be breaking ground that could further accelerate IPTV deployments elsewhere.**

Asked whether Richmond was willing to forego requiring a franchise for Cavalier, Richmond Mayor L. Douglas Wilder issued a statement to xchange saying, "As you know, the cable franchise agreement is up for renewal, and it would be premature to speak on anything relevant to that at this time."

The reference was to the 15-year cable franchise held by Comcast Cable. A spokesman for the mayor declines further comment. "That's all I've been authorized to say," he says, leaving unanswered the question of how a move into video by Cavalier would affect Comcast's renewal. But, clearly, the two have become linked in some way that could spell difficulties for Cavalier unless Comcast wins a "level-playing field" type agreement with the city.

Evans is confident the state franchise bill will move in the months ahead. And he notes other state legislation is in play in New Jersey as well as federal legislation that would eliminate local franchise requirements. If Cavalier succeeds in persuading local officials there's no need for a franchise when IPTV is delivered over an existing DSL network, it will be breaking ground that could further accelerate IPTV deployments elsewhere. ✕

For more on IPTV and related matters, see our new *On the Tube* supplement, which starts on Page 19.

IN-DEPTH SOURCE CODE

# Gambling Big on IPTV

Mid-Atlantic CLEC Cavalier Telephone has come out of nowhere to lead the race to launch next-generation IPTV service, which is to say, service employing advanced video compression to support multiple-TV service over a DSL line. Its plans to begin commercial rollout of MPEG-4-based IPTV in Richmond, Va., which at press time was slated to occur by sometime in December, make it the first carrier to use advanced compression technology for delivery of television service in this country. Not only that, but for some period of time at least Cavalier, which presently has over 200,000 residential and 35,000 business customers throughout its mid-Atlantic territory, will be the only triple-play provider in its initial market and some others as well. While Comcast has a switched voice service operative in the Richmond area, it is not actively marketing a triple-play bundle, waiting instead to roll out its new voice-over-IP platform. Verizon has not indicated when it plans to bring video service to Richmond, though the carrier has obtained a franchise for Fairfax County in northern Virginia, where it overlaps with Cavalier in some areas. Verizon has not signaled when it will launch TV service there. By June, Cavalier says it will have the triple-play service available to two million households passed by its network in parts of Virginia, Maryland, Delaware, Pennsylvania and New Jersey. Cavalier, by doing its own IPTV platform integration with a variety of vendors and by winning content suppliers' support for delivering their programming in an all-new technology environment, has demonstrated telcos can move ahead into video services without waiting for someone else to do everything for them. And if the company can achieve its goal of launching IPTV without obtaining cable franchises it will have shown the way over another daunting hurdle as well. We thought it would be worthwhile to learn why a small telco, a CLEC no less, has seen fit to become so aggressive against the major players in its market so early in the IPTV game. CEO Brad Evans consented to share some of the company's strategic thinking with ScreenPlays editor Fred Dawson. An edited version of the conversation follows.

**CLEC Cavalier Telephone beats ILECs to the punch with first IPTV launch using next-gen compression**

**S**creenPlays – It comes as a surprise that, with all the ILECs out there pursuing video plans, the first to market with next-gen IPTV is a CLEC. What gives you confidence this is the right time to move and that IPTV is a real opportunity for your company?

**Brad Evans** – Cavalier is unique in the fact that we're one of the few CLECs with a complete offering of all telecommunications products to both business and residential customers. We've been investing heavily in building our own network for the last six years, so we have the network, the high-speed broadband, the back-room and everything in place to offer a multitude of services. It fell right into our plans once the technology came along that enabled us to deliver a quality video signal over our IP infrastructure.

**SP** – That technology is the combination of next-gen compression and ADSL2+?

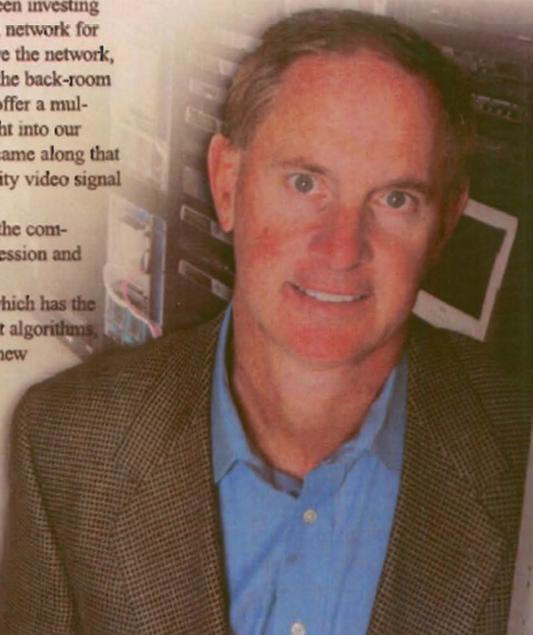
**Evans** – Yes. MPEG-4, which has the latest compression and latest algorithms, to ride seamlessly over our new ADSL2+. So really two things have happened. One is you can send a lot more video information

in a lot smaller bandwidth footprint, and, two, our bandwidth has gone up dramatically over the last six years.

**SP** – As you look at what you're offering now with voice and high-speed data, what do you expect from video? How important is that to you?

**Evans** – Video is an exciting application. Everybody understands it. Everybody who takes the service sees the programming guide. So there is more a tangible

*Brad Evans, CEO,  
Cavalier Telephone*



marketing application that we can develop compared to standard telephone service. Our first product was standard telephone service, and then we added all sorts of new features to it. We then went on to broadband DSL, and that reached a certain clientele that wanted high-speed Internet access. Now we're on TV which everybody wants, everybody needs. So I think it just opens up new avenues to bundle services that have benefits to consumers.

**SP** - Up to this point what has driven your market penetration? What has made it possible for you guys to survive and thrive and get to this point of expansion when you've been competing with major providers of voice and high-speed data bundles?

**Evans** - We offer a great package of features, quality and value. You add it all up we have a great proposition. For our residential dial tone service we package 12 of the most common features as part of the basic package. We were the first in the area to offer talking call waiting. We have telemarketing blockers and some other new features that we were the first ones on the market with. So we offer 12 features with unlimited local calling for \$24.95. And then we add on our high-speed broadband, unthrottled so it runs full speed over ADSL2+, at \$24.95. It's a great package that offers faster speeds and saves customers 20-30 percent off their phone and broadband bill.

**SP** - Is long distance part of this?

**Evans** - We have extra packages available. Our standard package is we have free Cavalier-to-Cavalier calling where if you call anyone on the Cavalier network, there's no charge. And then we add various plans, but the typical plan is 5 cents a minute anywhere in the U.S.

**SP** - Do you anticipate going to packet-based voice or is that not a particularly important component?

**Evans** - We actually offer both circuit-switched and IP voice now. We are a large VoIP provider. Contrary to some of the other companies we actually have more VoIP on our business side. A lot of our business customers have chosen Cavalier to have their telephone calls be on a VoIP platform. We do offer both business and residential VoIP, but most of our residential customers stay on the standard platform.

**SP** - On the commercial side, are you

billing this as a carrier-grade VoIP or is it something else that's low-cost to get multi-line service out there cheaply?

**Evans** - It's a carrier-grade VoIP. We've offered 911 since we initiated the service a little over a year ago. It rides our fiber network and our carrier-quality IP network. We offer IP Centrex. We offer the feature packages as well as standard dial tone replacement.

**SP** - Is it because of promotional issues or what that the residential side chooses the circuit over the VoIP?

**SP** - Do you plan video on demand?

**Evans** - Sure. Kasenna, which is one of the leading VOD suppliers, is our VOD company. We'll not only have first-run movies but also all sorts of specialty VOD. Most of the cable networks now have VOD packages, so we are working with all of them to bring on a very full lineup of VOD.

**SP** - Do you feel that starting out brand new with VOD that you have an opportunity to do something different from what competitors are doing or do you feel that's not essential to make your package appealing?

**Evans** - We've had a lot of internal discussions, and we've talked to a lot of people about VOD. While a couple of years ago VOD wasn't all that important, wasn't that heavily accessed, we think now with more content being put on VOD you'll see more and more applications and more and more utilization by consumers. So we do think it's an important part of our product offering to have a comprehensive selection of good programming for our consumers. We don't think the world is quite ready for total network on demand, but we're starting to see more programming being made available

for VOD shortly after it was available on first run.

**SP** - In respect to the local franchise issue, have you gone through that process in all the areas that you intend to serve?

**Evans** - We're starting in Richmond. We are IP here in Virginia. We have been in discussions with the municipality. Also in Virginia there is new legislation proposed that will have state-wide franchising, as well as on the federal side. So all of that is going on at once. But IP riding over our existing network puts us in a different light than other companies. Our goal is to bring the consumer a great product and have value we can offer our communities, and so the municipalities are working with us.

**SP** - So I gather what you're saying is you're talking to people but you haven't gone through a franchising process to where you have a traditional cable franchise anywhere.

**Evans** - That is correct.

**SP** - Is the Virginia legislation moving



**Tip:** Use the Arrows or Numbers on your Remote to Navigate

*Simplicity masking rich application flexibility is Cavalier's approach to the user interface developed with Kasenna.*

**Evans** - It's a little simpler. You have one less box. You have the power protection. Just all the advantages inherent in the telephone network from the last 100 years.

**SP** - Is VoIP priced the same?

**Evans** - It's a little bit less expensive than our standard service. And it is available on our web site or through our call centers. So it's available to all our customers, and they can choose whether they want standard phone service or VoIP.

**SP** - What do you plan to charge for the TV service?

**Evans** - We have a bundled triple-play offering that will include the dialtone with the 12 features, the broadband high-speed Internet access and an enhanced video package all for \$95.95.

**SP** - That enhanced video package would be all the basic cable channels and some premiums thrown in?

**Evans** - It's basically 150 channels, including 45 music channels similar to a digital plus package that you get from the cable companies.

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along rapidly? Do you have hope that would happen fast enough to accommodate your schedule?

**Evans** – The legislative process in Virginia happens the first two months of the year, and so we see it fast tracking to be enacted in the January-February timeframe.

**SP** – Do you feel comfortable then that you'll just be able to proceed in Richmond without an official franchise certificate offering video over your existing infrastructure?

**Evans** – That is what we're discussing with the municipality and working out a way for us to do that. So we do not foresee us having the old monopoly franchise.

**SP** – What about beyond the Richmond area. Have you announced or thought through how you're going to roll out video service elsewhere?

**Evans** – The key to our success is our huge fiber optic network. We have over 16,000 miles of fiber optic connecting all of our market, and all of our markets then have metro fiber rings that connect all of the central office centers where we can access the last-mile connections to homes and businesses. So all of our IP fiber network is in place. All of our ADSL2+ is in place. We have announced we will be rolling out IPTV service throughout our footprint by next June. We will be turning on our other markets, which include the Norfolk-Tidewater, Va. market, Baltimore, Philadelphia, Wilmington, Del. and northern Virginia all within the next six months.

**SP** – That's a very ambitious schedule. From a cost standpoint, is this move into video incremental to what you already had in place? Would you say that compared to how a video service might have been launched in the past, is this fairly low cost? Or is this a major capital outlay that represents significant risk to your future?

**Evans** – With the infrastructure being in place, the value and beauty of IPTV is it doesn't take major investment to get to the homes passed number. We are in front of 2 million homes with our high-speed broadband today. And by just turning on the video at our super headend we now have a new product. In the olden days to build past 2 million homes in a broadband coax environment would have cost billions of dollars.

**SP** – How long have you been deploying ADSL2+, and is that now ubiquitous across your service territories?

**Evans** – We started deploying first genera-

tion ADSL2+ equipment back last September, and we now have fully deployed ADSL2+ in all of our central offices. So we are offering ADSL2+ across our entire footprint.

**SP** – How does ADSL2+ affect your bandwidth?

**Evans** – Well, today we offer various flavors of DSL. We offer ADSL2+ over anything at 14,000 feet or under from the CO – that's cable feet. That's the optimum range for ADSL2+. We leave our ADSL totally unthrottled, so we let it rip as fast as it will go. So we have customers at well over 15 megabits per second in download speeds. But once you get out to the edge of the limit it does drop off, especially over the last couple of thousand feet. At that point we go to a long-range product of DSL, which is not ADSL2+, but it will still give you high speeds over the copper links.

**SP** – Will you offer video over those longer lengths or will it be exclusively over ADSL2+?

**Evans** – Only over the ADSL2+, and we're going to limit it to 12,000 feet. We need to get 9-10 mbps at 12,000 feet, which is about the drop-off range.

**SP** – So in terms of the business strategy for the triple-play, you're working in the range of 9-15 mbps as what's necessary to support commercially support for video, data and voice service.

**Evans** – Yes, although we can go higher. In short runs we have applications at well over 20 mbps.

**SP** – Let's look at the minimum at 9 mbps. Are you contemplating offering simultaneous streams to multiple TV sets in the home at that minimum rate?

**Evans** – Definitely. That is the advantage that MPEG-4 gives you. We're calibrating our video at MPEG-4 at approximately 2 mbps. So it takes 2 mbps per video stream per set-top.

**SP** – How does that impact your high-speed data service end up? Is that going to be segmented into a certain fixed bandwidth range or is this tailored to be flexible bandwidth allocation depending on whether the pipeline is being used by one or more TV sets?

**Evans** – The latter. It's dynamically allocated with the set-top video being the first choice. So if you're watching TV that bandwidth is automatically allocated to the TV. If the TV isn't on, then it goes back into the pipe to be used for the broadband.

**SP** – So, under that scenario, what would you say is your maximum level of TV ser-

vice? Do you cut it, say, at no more than three TVs or is it just up to the customer?

**Evans** – It's a function of both. It's a function of how close they are to the CO and a function of how many TVs they have. We always want to save room for the broadband, so if you're using 2 megs for each TV and you want to leave at least a meg for broadband, you can just do the math as to what the limits are.

**SP** – You will communicate with your customers as to what is doable in the context of where they sit in the network?

**Evans** – Exactly. The sweet spot will probably be three TVs when you add up the bandwidth. And then, with high definition, our offering will require more bandwidth depending on whether the customer has high definition or not.

**SP** – At today's MPEG-4 HD rates you'd just about consume most of that minimum level of 9 megs of bandwidth with just one channel. Are you contemplating expanding to bonded pairs?

**Evans** – Yes, we are looking at bonded, but it won't consume all the bandwidth. The HD bandwidth for MPEG-4 will be in the 6 to 7 meg range. So if you've got 15 meg you've still got room for standard definition sets as well as one high definition set on one wire pair. And then we are going to be trialing the ADSL2+ bonded.

**SP** – Do you feel at this point in time your company is positioned to grow beyond your existing footprint or do you see the service area as pretty much set?

**Evans** – We have done several acquisitions over the past few years that expand our fiber footprint. We expanded nine COs in the last six months. Turned on a couple of new markets in Virginia and a couple in Maryland. We're always looking to expand. We do not see a nationwide expansion or a major expansion, but we are looking at different areas that are contiguous to our fiber backbone where we can get fiber into the metropolitan areas that would allow us to do a scaled expansion.

**SP** – As you thrive and succeed this model can be extended wherever you see the opportunity contiguous to where you're already at?

**Evans** – Exactly.

**SP** – Brad, we really appreciate you taking time to talk about this.

**Evans** – This is the most exciting thing that has happened in our company for several years. We're all ready to go. ■