IPTV PRIMER:
What Developers and Home Builders Need to Know About IPTV

All IPTV is digital. But not all digital TV is IP. Its interactivity makes its regulation and its potential far different.

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What exactly does Internet Protocol Television – IPTV – actually mean? Is IPTV just traditional cable television service delivered over the Internet, or something more? What's the difference between IPTV and "digital" cable service? Is IPTV a regulated telecommunications service or not? How might IPTV's unique attributes benefit developers and builders?

This article defines IPTV, compares it to traditional cable television services, and concludes that it should not be regulated as traditional cable service. The lack of regulation reduces the cost. It also creates an opportunity for companies outside the traditional cable industry to deliver video. Such companies are already operating. The latest TV receivers can access them and traditional cable companies interchangeably, with little extra thought necessary on the part of consumers – if the bandwidth supplied to the household is great enough.

This article describes some of the applications of IPTV, and strongly suggests that real estate developers and home builders should quickly embrace it, as well as other telecommunications services that can be integrated with it, because the technology to deliver these services constitutes an amenity that will add significant value.

Additionally, this article describes some of the applications of IPTV, and strongly suggests that real estate developers and home builders should quickly embrace it, as well as other telecommunications services that can be integrated with it, because the technology to deliver these services constitutes an amenity that will add significant value to their developments and properties. Indeed, some experts have stated that IPTV represents a substantial component of the $4,000 to $7,000 increase in value of a new home served by a fiber to the home (FTTH) delivery system.

At present, of course, few IPTV providers using the traditional "cable TV" model are taking much advantage of IPTV technology. But that seems destined to change quickly. So a fee structure tying providers' payments only to traditional "cable TV" functions may soon be obsolete.

What Is IPTV?

The concept is deceptively simple. IPTV is the technology for delivering video signals over a data network, as data. If the video signal is in an analog form (as is traditional TV), the video signals and audio signals associated with the video signals are first converted to a digital form before transmitting. Typically, routing equipment then adds packet routing information to the digital content so that it can be routed using Internet Protocol.

In this article, we take IPTV to mean not only programming content and interactive services delivered by services using the traditional "cable TV" model, but also content and services delivered without a "cable"

subscription – a technology also known as "Internet TV."

Thus, instead of receiving video or television signals broadcast over radio waves (or coaxial cable or fiber, for that matter) as an analog signal, a consumer's television is connected directly to a broadband IP digital system and receives the digitized video or television signal, including the audio, directly. An IPTV system can be configured many ways at the customer end, and use many sources of video content, ranging from traditional video networks such as CBS or HBO, to telemedicine and security services, to sports teams that sell video subscriptions, to the consumers themselves. Some examples:

- Customers might use a device or adapter that converts video and audio signals into a form that allows them to watch such signals on their television set. This device could also bridge a consumer's computer with television. There are a multitude of such devices available through IPTV providers, and some TV receivers have such capabilities built-in. The connections between the computer and the device – typically a set-top box – may be digital or analog. A computer – typically using Windows Media Center or Vista Home – can digitize the signal, allowing it to be digitally recorded or manipulated. In this type of setup, right now there is little or no advantage to the video signals being IPTV in the first place.
- A broadband access provider simply transmits video as high-speed data to end users by means of a broadband connection. Broadband access providers include local exchange telephone companies, Internet access providers, cable television companies (selling broadband Internet access as part of a "triple play" package, for instance), infrastructure providers, and wireless service providers. The arrangement does not assume that customers subscribe to a specific large package of video services, as they are used to doing with regard to "cable" TV.
- An IPTV provider, connecting a subscriber's TV, home computer and perhaps other devices to its network (and ultimately to the Internet) through a bridging device – right now, typically an advanced set-top box -- and providing software to operate the IPTV system. The entire home network is digital. The system keeps track of which customers are active and viewing IPTV, and which features and services are authorized. When a customer requests a specific television channel or program to be viewed, the IPTV service provider's equipment sends messages to a media gateway or to the Internet directly. There are a number of IPTV providers in the marketplace. A broadband access provider and an IPTV provider can be the same entity.
- Your residents could also become content providers of "broadcast quality" video; many are already posting (typically lower-resolution video) to YouTube and similar services.

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IPTV can be delivered over a fiber to the home (FTTH) network, a fiber to the curb (FTTC) network, or (with lower bandwidth) enhanced copper wire. IPTV today, provides the same services as the most advanced cable TV systems. For instance, it allows a subscriber to obtain video programming whenever the subscriber decides to view it (Video on Demand). But because IPTV is not just a distribution or playback method for video programming, it can serve to totally eliminate a fixed video programming schedule, and to provide a multitude of offerings similar to how information on the Internet can be accessed by any person at any time. Think thousands of "channels," or even hundreds of thousands, rather than just a few hundred.

What Is Cable Television System and Cable Service?

You're confused? So are the FCC and Congress. The legislation has not kept up with the technology. When that happens, confusion cascades through the court system, which attempts to make policy work one case at a time.

The Federal Communications Commission defines a traditional cable television system as a facility, consisting of a set of closed transmission paths and associated signaling generation, reception and control equipment that is designed to provide "cable service," which includes video programming provided to multiple subscribers within a community, with certain exceptions. *Cable service* means a one-way transmission to subscribers of video programming or other programming service, and subscriber interaction, if any, which is required for the selection or use of such video programming or other programming service. The key characteristic of cable service is *one-way* transmission.

What Are the Differences Between IPTV and Cable Service?

First and foremost, an IPTV system employs a network that is designed from the ground up to be *two-way interactive*, as opposed to a *one-way transmission* system. It is indeed an Internet service, even when it looks exactly the same as

First and foremost, an IPTV system employs a network that is designed from the ground up to be two-way interactive, as opposed to a one-way transmission system. It is indeed an Internet service, even when it looks exactly the same as other TV programming.

other TV programming. A subscriber to an IPTV service uses a set-top box to request specific individual video signals from the IPTV service provider. Thus, the subscriber *controls* the video signal he or she wishes to access. This will ultimately produce a wide variety of new video services that are cumbersome or impossible to provide today.

The two-way interactive network differs significantly in functionality from the one-way transmission network of a cable television system. A one-way network transmits a complete set of video channels to a subscriber's set-top box all at the same time. In a one-way system, a subscriber receives video signals on a fixed schedule, except for video on demand (VOD). In contrast, in an IPTV system, subscribers can obtain all video programming whenever they decide to view it.

The only apparent exception to a cable system's one-way functionality is when a cable television system provider offers VOD. VOD allows a subscriber to view a video program when the subscriber decides to view it. The FCC has ruled, however, that, in a VOD offering, the cable provider *is* still in control of the programming[1].

In any case, most programs delivered by cable systems are not on demand, but are transmitted based upon the fixed schedule of a television cable network or program source, which are the content providers. The television networks, which provide content (and other cable program content providers as well) generally set their programming at specific times for delivery by a cable system.

Moreover, in a cable system, the cable operator is in control of selecting and distributing programming content to subscribers, and the content is usually available to all subscribers at the same time. In an IPTV system, the subscriber has complete control of the selection of the programming sent to his viewing device. The distinction may be a small one now – IPTV providers that look like cable TV businesses typically deliver a much wider variety of programming content, more flexible VOD service, and a few all-digital features like localized fast food ordering and weather reports. But the gap between IPTV and analog or non-IP digital can only widen.

This brings us to the second differentiator: IPTV systems have the potential to offer a greater choice of programming content than subscribers to a non-IP cable system can ever hope to get. Thus, an IPTV system can offer hundreds of channels of programming, all on demand, because of the IPTV system's use of bandwidth. The number of channels an IPTV system can offer is limited only by the amount of bandwidth that a subscriber has available through the broadband access provider.

Third, an IPTV system uses a packet-switched Internet Protocol ("IP") network rather than a broadcast network. In an IPTV system, providers using the "cable TV" model can keep all of their video programming in a central location, and only the programming that the subscriber chooses is actually delivered. Moreover, because an IPTV system allows for more bandwidth per program "channel," a subscriber will likely receive better-quality video signals. The IPTV provider also has the ability to add much more programming or data choices than can a cable system provider who isn't using IPTV.

Fourth, IPTV makes it easier for providers to connect every subscriber's television set, computer, music player or other portable device to the network and ultimately to the Internet, all together and all at the same time. Doing that with a PC-centric system such as a Windows Media tuner-equipped computer connected to a cable box is cumbersome.

Thus, IPTV subscribers can use the connection to more easily use their television to play media files that are stored on their computers. Such files may include digital photos, videos, or music. To be clear, all this can be done without IPTV, or even digital TV, but not easily enough for the average consumer to embrace it.

Fifth, IPTV can generally produce better video images than conventional analog or even digital TV (all satellite TV signals are digital, although they may not be delivered to individual dwelling units in digital form) because of the compres-

sion techniques it employs. These techniques, most commonly MPEG4, are better than the current television standard. Thus, file sizes sent to a subscriber's television set over an IPTV system can be smaller in size, with a higher quality picture image. MPEG4 can – and is – used to compress analog TV files as well, but an all-digital video head-end is less expensive top set up, and MPEG4 signals are more likely to arrive cleanly in an all-IP network. The new generation of digital TV transmission equipment is extremely IP-centric.

Sixth, IPTV allows for integration of a variety of telecommunications services. Thus, IPTV can be easily bundled with a high-speed broadband Internet data service, as well as Voice over Internet Protocol ("VoIP") telephone.

Ideally, this bandwidth is all delivered using fiber to the home or at least fiber to the curb or basement. As an interim measure, some providers are using variants of DSL, which employ fiber to within a few thousand feet of a subscriber's household, and copper to travel the final gap between the fiber and the customer. The technology has come to be known as FTTN, for fiber to the node. The term covers a wide range of capabilities, however, ranging from 1.5 Mbps to about 30 Mbps. Cable providers are beginning to bundle cable, Internet and VOIP services over their cable networks as well, using versions of DOCSIS higher than 2.0.

Finally, IPTV allows for a higher level of alarm and security services, particularly video surveillance, for MDUs and commercial buildings receiving IPTV integrated with other telecommunications services.

What if IPTV is Delivered by a Telephone Company?

If IPTV is delivered by a local exchange carrier telephone company, there are other differences between IPTV and a cable system. The first is that a phone-company IPTV network is generally based on the architecture of its telephone network, which does not necessarily conform to municipal boundaries. In contrast, a cable system has specific boundaries that are set forth in its franchise,

The Richmond Case – Chronology

The events that prompted Richmond's complaint against Cavalier began in May 2006, when Cavalier informed Richmond of its intent to provide "IPTV services" within Richmond within 30 days. In June, Richmond acknowledged receipt of Cavalier's letter, and informed Cavalier that, in the absence of a negotiated cable franchise agreement, Richmond could not consent to Cavalier's provision of IPTV as it would violate federal law.

That October, Richmond learned that city residents were using Cavalier as their IPTV provider. Later that month Richmond's mayor advised the President and CEO of Cavalier that Richmond had become aware that Cavalier was providing what the City described as "cable television services" to city residents and noted Richmond's June communication to Cavalier advising it that Cavalier's provision of cable services absent a franchise agreement was illegal. Also, Richmond's mayor advised Cavalier that Richmond expected Cavalier would immediately cease its unauthorized activities.

Cavalier continued to provide what Richmond described as "cable television services" to at least 1,000 residences in Richmond. Cavalier, however, did inform Richmond on several occasions that Cavalier was collecting and holding in escrow franchise fees and taxes related to the provision of video services in Richmond since June 2006. Additionally, in mid-November 2006, Cavalier informed Richmond that Cavalier was holding franchise fees and related taxes owed to Richmond in escrow. Richmond responded that it never authorized Cavalier to withhold any funds in escrow from any source at any time. Instead, Richmond gave Cavalier until late November 2006 to pay all such fees. When that date passed without Cavalier's payment, Richmond requested remittance of the required fees, taxes, penalties and interest by letter to Cavalier.

In early December 2006, Cavalier paid the City $2,457.23 to cover the second and third quarters of 2006 franchise fees, and $5,507.26 for the City's cable utility tax for June 2006 through October 2006. Richmond maintained that the payment of these taxes and fees was required by Richmond's Code, and that it was difficult if not impossible for Richmond to discern from Cavalier's payments whether any amounts paid to Richmond were based on the correct criteria. Richmond claimed Cavalier was violating the law by failing to pay all of the required taxes, fees, penalties and interest.

Additionally, Richmond requested that Cavalier provide information about its customers, customer payments for cable television services, gross revenues from the provision of cable television services, and an accounting of taxes, fees, penalties and interest. Richmond also requested that Cavalier provide a description of or map of the area in Richmond where Cavalier provided cable television services. Cavalier did not provide the requested information.

Accordingly, Richmond sued in the Richmond Circuit Court described above. In the court papers, Richmond contended that Cavalier was providing "cable television services," while Cavalier claimed that it was providing "IPTV services." Furthermore, Cavalier maintained it was making payments to Richmond in good faith while Richmond and Cavalier resolved their disagreement over franchise issues.

Cavalier removed the case to the U. S. District Court for the Eastern District of Virginia and filed a motion to dismiss the complaint on grounds that Cavalier is not providing "cable service" as it is defined under the Cable Policy Act, or alternatively, requesting the court to refer the case to the FCC for a decision on the ground of primary jurisdiction. The Court granted Cavalier's request to refer, and sent the case to the FCC for a determination. The FCC is not expected to rule on this case until late in 2007 or early in 2008.

authorized by a local franchising entity. Thus, the local exchange carrier's network can be, and usually is, larger, covering a metropolitan area or larger territory.

An example would be Qwest Communication Corporation's local exchange service to the Denver, Colorado metropolitan area which extends to six counties surrounding the City and County of Denver.

Additionally, if a local exchange telephone carrier provides IPTV, it is delivered over facilities that are already authorized to be in a public or private right of way. Local exchange telephone companies have previously been granted use of such rights of way for placement of telephone facilities and equipment, which will be used, in part, to deliver IPTV.

Assuming a local exchange telephone company's rights of way are not restricted to telephone local exchange and long distance service and, assuming the telephone company is not required to get a franchise to provide IPTV, an issue which this article addresses below, the telephone company would incur no additional franchise fees for continued use of such rights of way to deliver IPTV. A cable provider, however, must pay a franchise fee of up to five percent of its cable revenues when delivering cable service pursuant to its local franchise. These fees are significantly higher than those a telephone carrier pays for the use of rights of way.

Is IPTV Subject to the Same Regulation as Traditional Cable Services?

Video services delivered solely by IP present a question of whether IPTV should be subject to the same regulation as traditional cable television services. This question is the subject of at least two recent lawsuits filed by municipal governments, seeking to enforce franchising requirements on providers of IPTV. IPTV is also the subject of debate in Congress, which has considered and will likely consider this year, legislation that will affect traditional video services.

On December 6, 2006, the City of Richmond, Virginia, filed a complaint against Cavalier Telephone, LLC, *et al.*, in the Circuit Court for the City of Rich-

The Milwaukee Case – Chronology

The circumstances that gave rise to the Milwaukee case are similar to those that spawned the one in Richmond. In September 2005, AT&T filed with Milwaukee a request for a zoning variance in order to construct a 140-foot tower on a 26-foot-square concrete pad to hold eight antennas to capture over-the-air TV signals on private property.

In connection with the request, AT&T stated that the local TV signals would be fed into video processing equipment in AT&T's building, where they would be combined with video feeds coming in over AT&T's fiber network. The combined video would then be disseminated back over AT&T's network to the community. Milwaukee granted AT&T's request for a zoning variance in early February 2006, subject to various conditions including the following:

1. AT&T must obtain all permits, licenses, franchise and permissions required under federal, state or local law prior to AT&T's commencement of the use of the tower to provide any video programming or other programming services as those terms are defined in Section 522 of the Communications Act, to subscribers in Milwaukee;
2. AT&T not will use the tower as part of the network occupying Milwaukee public right of way for the provision to subscribers in Milwaukee of video programming or other programming services as those services are defined in Section 522 of the Communications Act, unless AT&T provides Milwaukee 30 days prior written notice; and
3. The approval of the zoning variance shall not constitute nor be construed as a grant of any permit, franchise, license or any other permission otherwise required under federal, state or local law.

In 2006, AT&T began submitting applications to Milwaukee for permits to excavate for installation of underground cable and cabinets. AT&T advised Milwaukee that the underground cable and cabinets were necessary for the upgrade of its telecommunication services.

When Milwaukee questioned AT&T about the size of the cabinets, AT&T informed Milwaukee that the cabinets were necessary for the provision of telecommunication services. AT&T made no mention that the cabinets were to be used for the provision of video services. Subsequently, AT&T represented to Milwaukee that the cabinets were to be installed for the provision of telecommunication services and video service.

By December 2006, Milwaukee had granted AT&T 52 permits authorizing AT&T to install the cabinets in public rights of way conditioned upon AT&T obtaining all permits, licenses, franchise and permissions required under federal, state and local law prior to AT&T's use of the tower to provide any video or other programming services, as those terms are defined under Section 522 of the Communications Act, 47 U.S.C. § 522. Moreover, the permits were conditioned upon AT&T's commitment that it would not use the facilities as part of a network occupying Milwaukee's public right of way to deliver that video or other programming, unless AT&T provided Milwaukee 30 days' prior written notice. Finally, the permits were conditioned upon the disclaimer that the permits would not constitute or be construed as a grant of any permit, franchise, license or permission otherwise required under federal, state or local law.

Milwaukee contended that AT&T's placement of the fiber and the cabinets in Milwaukee's rights of way were necessary for AT&T to provide telecommunication services, rather than for purposes of providing AT&T's U-verse TV service. AT&T began offering U-verse to subscribers in Milwaukee on December 16, 2006, asserting that AT&T was not an operator of a cable system, would not be operating a cable system, would not be offering cable service, and therefore was not subject to Milwaukee's cable franchising requirements.

AT&T did not apply to Milwaukee for a cable franchise, and informed Milwaukee that it would not do so unless a court issues a final ruling that AT&T is required to. As a consequence of these developments, Milwaukee filed its complaint in the U.S. District for the Eastern District of Wisconsin.

AT&T filed a motion to dismiss Milwaukee's complaint arguing that AT&T is providing "IPTV service" and not "cable service." At press time, the court stayed the case because Milwaukee and AT&T reached a tentative agreement that allows AT&T to provide IPTV service in Milwaukee although the ultimate legal question of whether AT&T requires a franchise from Milwaukee before operating its IPTV service in Milwaukee has not been decided.

mond, alleging that Cavalier is providing cable television services within the city, but has not obtained a franchise to provide such service (see box).[2]

On December 20, 2006, the City of Milwaukee sued Western Bell, Inc., d/b/a AT&T Wisconsin and AT&T Teleholdings, Inc. (that is, AT&T), alleging that, among other things, AT&T is providing video programming services without a Milwaukee franchise. AT&T has contended in the past that it is providing IPTV service, and not cable service. AT&T filed a motion to dismiss this complaint. Milwaukee and AT&T have reached a tentative agreement that permits AT&T to provide IPTV in Milwaukee, although the ultimate legal question of whether AT&T needs a franchise to do so has not yet been resolved. The federal district judge hearing the case stayed the case, cancelled all previously scheduled procedural matters, and ordered a status conference to be held on May 25, 2007. In the meantime, the City of Waukesha, Wisconsin and the Regional Telecommunications Commission filed motions to intervene. The court has not yet ruled on these motions.

Milwaukee's complaint against AT&T is similar to an action that Pacific Bell Telephone, d/b/a AT&T California, initiated against the City of Walnut Creek in late 2005[3], seeking a declaratory judgment that, among other things, AT&T's planned video programming in Walnut Creek did not constitute cable service, and therefore did not require a franchise.

AT&T argued that a cable operator providing cable service over a cable system controls a cable system, whereas AT&T's planned video service did not fit this requirement. AT&T also contended that the definition of the cable system[4] includes the facilities of a common carrier only to the extent such facility is used in the transmission of video programming directed to subscribers, unless the extent of such use is solely to provide interactive, on-demand services. AT&T argued that its programming would provide such interactive services.

The Richmond and Milwaukee cases will initially decide the question of whether IPTV is a cable service requiring a franchise, but appeals of these decisions will likely ensue. Thus, it is likely that a federal court decision on this issue will not be forthcoming for some time.

The court ruled that it did not need to resolve this dispute, because the issue of whether AT&T's video programming is, in fact, a two-way interactive service is a matter for an evidentiary hearing, and further, the Cable Act did not preclude local governments from imposing franchise requirements on providers of video programming where such regulation is not expressly forbidden by the Cable Act. Therefore, the court refused to dismiss the case as the City of Walnut Creek has requested.

Subsequently in 2006, the California legislature passed a statewide franchising law that grants authority to the California Public Utilities Commission to grant statewide franchises for video programming. Because this law transfers the authority to grant franchises from local authorities to the California Public Utilities Commission, it apparently supersedes the court's decision in the *AT&T v. City of Walnut Creek* case.

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In June 2006, the U.S. House of Representatives passed the Communications Opportunity Promo-

tion and Enhancement Act of 2006, H.R. 5252. That bill, if enacted into law, would create a new national franchising process for entities intending to provide video programming, and for cable television providers subject to competition in their franchise areas. This Act would allow a franchising authority to impose franchise fees of up to five percent of a cable system provider's gross revenue, and would require national franchise holders to pay additional fees for public, educational, and governmental access to cable systems. In the United States Senate, in September, 2006, the Senate Commerce Committee marked up a companion bill, but did not vote on it. Congress is likely to address this issue again in 2007.

What the Rules Say so Far

FCC and court rulings addressing the classification of certain cable services have already concluded that high-speed Internet access by cable is not "cable services," even though they are provided over the same cable system as video signals. These decisions are highly instructive on the answer to the question of whether IPTV should be regulated as cable service.

In March, 2002, the FCC issued its *Cable Modem Declaratory Ruling*[5] concerning the appropriate regulatory treatment for broadband access to the Internet over cable facilities. In this decision, the FCC declared that cable modem service by which cable providers offer broadband or Internet access, is an interstate *information* service, not a cable service, and that there is no separate offering of telecommunications service when the cable operator offers cable modem service.

The FCC ruling resulted in cable modem service not being subject to regulation under the Cable Policy Act. The FCC's declaratory ruling was upheld by the United States Supreme Court in 2005 in the *Brand-X* case.[6]

In *Brand X*, the Supreme Court held that the FCC had lawfully concluded that cable companies selling broadband Internet services do not provide telecommunications service as that term is defined under the Communications Act, and that such services are exempt from mandatory, common carrier regulation under the Communications Act.

The Supreme Court further held that the FCC had properly concluded that the Internet access offered by a cable system using a cable modem is an interstate *information* service, because it provides the capability for manipulating or storing information. The Supreme Court affirmed the FCC's determination that, when offering cable modem service, the cable system provider lacks the required control over the selection of information by the user, and that the element of control of the information lies with the cable modem subscriber. As pointed out above, IPTV is a *two-way* interactive service that is controlled by the subscriber.

For the reasons given by the FCC and the Supreme Court in *Brand X*, and due to the differences between cable service and IPTV, particularly IPTV's two-way interactive features, we conclude that IPTV is not a "cable service" within the meaning of the Cable Act, and therefore, is not subject to cable franchising requirements under that Act.

Indeed, a June 7, 2006 decision issued by the Connecticut Department of Utility Control[7] concluded that AT&T's offering of IP video service is not a cable service within the meaning of the Cable Act, and therefore not subject to state cable franchising requirements. The DPUC stated that AT&T's IPTV services are merely another form of data stream transmitted like other data over the Internet, and is not subject to traditional cable franchising requirements. In its decision, the DPUC stressed the significance of the subscriber's interactivity in IP video, the particularized nature of each subscriber's IP video service, and the similarities between IP video service and information services, including data and voice services that use IP technology over telephone networks. This decision is on appeal.

Moreover, the FCC's Order on video franchising, released March 5,[8] exempts "multi-use" video systems from the franchising process under the Cable Act, but did not rule on whether IPTV is a cable service or information service.

The Report and Order exempts "mixed-use" video systems from the franchising process under the Cable Policy Act, but did not rule on whether IPTV is a cable service or information service. The FCC did not define "mixed-use" network in the Report and Order, but gave some examples to clarify when its new rules apply. Thus, the FCC stated that the jurisdiction of a local franchising authority (LFA) only applies to the provision of "cable services" over "cable systems." The FCC's definition of "cable services" and "cable systems" are set forth earlier in this article.

The FCC decided that, to the extent a cable operator provides non-cable services or operates facilities that do not qualify as a cable system, it is unreasonable for an LFA to refuse to award a franchise based on the issues related to such services or facilities. For example, the FCC would find it unreasonable for an LFA to refuse to grant a cable franchise to an applicant for resisting an LFA's demands for regulatory control over non-cable services or facilities. Likewise, the FCC ruled that an LFA has no authority to insist on an entity obtaining a separate cable franchise in order to upgrade non-cable facilities.

Thus, assuming an entity such as local telephone exchange carrier already has authority to access public rights of way, an LFA may not require the local exchange carrier to obtain a franchise solely for the purpose of upgrading its network. If there is a non-cable purpose associated with the network upgrade, a local exchange carrier is not required to obtain a franchise until and unless it proposes to offer cable services. If a local exchange carrier deploys fiber optic cable that can be used for cable and non-cable services, this deployment alone does not trigger the obligation to obtain the cable franchise. The same is true for boxes housing infrastructure to be used for cable and non-cable services.

The FCC's Order has been appealed by the National League of Utilities and several municipalities to the various U.S. Courts of Appeal. The appeal will be transferred to one of the U.S. Courts of Appeal to which an appeal was taken, using a lottery procedure. The Court of

Appeals' decision on its review of the FCC's Order is not expected to be made until 2008.

Furthermore, the FCC clarified that an LFA may not use its video franchising authority to attempt to regulate a local exchange carrier's entire network beyond the provision of cable services. The entirety of a telecommunication/data network does not automatically convert the network to a cable system once subscribers start receiving video programming.

The FCC found that the provision of video services pursuant to a cable franchise does not provide a basis for customer service regulation by local law or franchise agreement of a cable operator' entire network, or any services beyond cable services. The FCC ruled that local regulations that seek to regulate any non-cable services offered by video providers are preempted because such regulation is beyond the scope of local franchising authorities and is not consistent with the definition of cable system in the Cable Policy Act, as set forth above. Moreover, revenues for non-cable services are not included in the basic calculation of franchise fees.

The FCC's Report and Order also addresses the LFA's authority to regulate "interactive on-demand services." The FCC held that a facility of a common carrier that is used solely to provide interactive on-demand services is excluded from the definition of a cable system under the Cable Policy Act. Interactive, on-demand services are defined as "services providing video programming to subscribers over switched networks on an on-demand point-to-point basis but does not include services provided by video programming prescheduled by the programming provider."

Unfortunately, the FCC did not address what particular services may fall within the definition of "interactive on-demand services", and did not address the regulatory classification of any particular video services being offered. The FCC also specifically did not address whether video services provided over an IPTV system are or are not cable services.

That issue is currently being considered in the FCC's pending docket.[9] The FCC's decision in this proceeding is not expected until late in 2007 or early 2008. The Cavalier case referred from the federal District Court may, however, spur the FCC to issue a decision in this docket sooner. Many LFAs have signaled their intention to appeal the FCC's Report and Order, so a final FCC decision on "mixed-use" networks will not be forthcoming for some time.

Applications over IPTV

There are a multitude of applications for IPTV. Generally, a subscriber to IPTV can view more than 300 channels of programming. More services should soon be commonplace. Because an IPTV system is two-way interactive, the subscriber can participate in video conferencing, including attending homeowners association and other meetings by video or having a medical examination, playing video games, downloading photographs and videos, and listening to favorite music. IPTV also highly complements a home theater system. One overlooked application over IPTV (although conventional cable systems often provide it) is alarm and security, including video surveillance. IPTV offers the opportunity for video surveillance at a higher quality level than video surveillance over a one-way transmission cable system or local exchange telephone copper network.

IPTV for Developers

These applications should be of enormous interest to real estate developers and home builders, particularly since IPTV represents a significant part of an important amenity that can add great value to a new residential unit or a commercial building in a real estate development.

Indeed, experts in the broadband services market have estimated that a FTTH or FTTC only can increase the value of a newly-built home from $4,000 to $7,000. The value of commercial units may even be higher. The IPTV component is a significant and substantial part of this increase in value.

While, as this article noted above, an IPTV system can be delivered over an FTTC, an FTTH, or enhanced traditional copper wire, an FTTH system is the best approach. Developers and home builders should seriously consider constructing a fiber delivery system in their real estate developments, either themselves or by contracting with an infrastructure provider who would not only manage the system, but negotiate agreements with service providers to provide voice, Internet and especially IPTV service. **BBP**

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References

1 *Cable Modem Declaratory Ruling,* 17. F.C.C.R. 4798 (2002).

2 A. franchise for cable Service is required by the Cable Policy Act of 1984, as amended by the Consumer Protection and Competition Act of 1992 (the "Cable Policy Act"), set forth in Title VI of the Communications Act of 1934, as amended.

3 *AT&T v. Walnut Creek*, 428 F. Supp. 2d 1037 (April 13, 2007).

4 Section 522(5) of the Communications Act, 47 U.S.C. § 522(6).

5 *See*, n. 1, *supra*.

6 *National Cable & Television Ass'n, Inc. et al. v. Brand X, et al.*, decided on June 27, 2005.

7 *Investigation Video Products,* Docket No. 05-06-12 (released June 7, 2006), Appeal Docketed, No. 3 06CV1107 (WWE)(D. Conn. July 19, 2006).

8 *Report and Order and Further Notice of Proposed Rulemaking* (FC 06-180), released March 5, 2007.

9 *IP-Enable Services*, 19 FCC Rcd. 4863 (2004).