Testimonies from Hana, Maui

Testimony Before the Department of Commerce and Consumer Affairs in Support of the Application for the Indirect Transfer of Control of Oceanic Time Warner Cable LLC
September 16, 2015
Maui County (Excluding Lahaina)
Hana

Director Awakuni Colón, ladies and gentlemen, Aloha. My name is Mark Brown. I am Vice President and Counsel, Corporate Government Affairs, for Charter Communications and am responsible for providing national policy and legal support for Charter's contract negotiations with cities and counties to provide service in local areas.

Thank you for this opportunity to discuss the proposed transaction between Charter and Time Warner Cable. I am honored to be here and excited to speak with you about Charter and our plans for the future. I am confident that Charter will be a positive addition to Hawaii – benefitting the people who live here by enhancing existing communications infrastructure and services, investing in the local economy, and providing good jobs for local residents.

Under the terms of the proposed transaction, Charter will merge with and assume control of Time Warner Cable, including its Hawaii subsidiary, Oceanic Time Warner Cable. This transaction, together with Charter's acquisition of a third cable provider - Bright House Networks - promises to build on the best attributes of the merging companies to offer world-class communications services to the people of Hawaii.

Charter recognizes the uniqueness of Hawaii. We value the State's rich history and diverse culture. After the transaction closes, we hope to operate Oceanic as part of our national footprint while still preserving the local nature of the company's presence here in Hawaii. Working with you and Oceanic's experienced employees, we plan to achieve the balance that will serve customers well in the future.

I. INTRODUCTION TO CHARTER

While Charter may not be well known in Hawaii, it is a leading communications company that provides some of the nation's most advanced broadband Internet, video, voice, and business services. Charter serves over 5.8 million residential customers and almost 400,000 commercial customers, including approximately 4.3 million video and 5.1 million broadband customers across the country. Headquartered in Stamford, Connecticut, Charter operates in 28 states and employs over 23,500 people.

Charter is widely recognized as having one of the best cable management teams in the industry. In the past 12 months, two of the industry's leading trade publications – Multichannel News and CableFAX Daily - named Charter its "Operator of the Year." The New York Times recently reported that Charter's CEO Tom Rutledge has "a reputation for being one of the best operators in the industry." Under his leadership, the merged company will have the incentive and the resources to extend Charter's existing pro-customer and pro-broadband model to Oceanic's systems in Hawaii, and to further increase investment in its network and communities.

When this management team came to Charter three and one-half years ago, it immediately began making significant changes. The company invested heavily in the network, upgraded its infrastructure and instituted a growth strategy founded on consumer-friendly principles. Today, Charter is the fastest growing publicly-traded cable company in the United States, and our customers are increasingly satisfied with both our products and our service.

The cornerstone of Charter's business strategy is to fulfill customers' needs by providing best-in-class product offerings at highly competitive prices and demonstrating a true commitment to customer care. Charter has infused more uniformity into its pricing and packaging and is noted for straightforward billing practices without a lot of additional taxes and charges added. The company is well known for some of the things it does ***not*** do. Charter does

not impose extra fees such as modem fees, state or federal USF fees, E911 fees, subscriber line fees, additional outlet fees, or early termination fees.

In the last three and one-half years, Charter has invested $5.5 billion in our network and added approximately 7,000 new jobs. For a company with over 23,500 employees today, that means Charter has added almost a third of its workforce in a very short period of time without any major acquisitions or new service areas having been added to its footprint. The company has returned jobs to the United States from other countries, boosted base broadband speeds, and added more video programming channels, HD services and VOD options for our customers.

Charter also has a long history of technological innovation that, when combined with the technical capabilities of Time Warner Cable and Bright House Networks, will ensure that Hawaii continues to receive cutting-edge, high quality products and services. Many of the most popular technological advancements available today, such as Video-On-Demand, remote DVR, wide scale roll-out of WiFi over cable outdoors, and cable programming through an app, were created by people associated with Charter, Time Warner Cable and Bright House Networks. Our record demonstrates a commitment to making the investment necessary to ensure that Charter's network is not only robust for the needs of today, but is also positioned to evolve to meet consumer and business demands of the future.

Moreover, by combining Charter's business strategy of investing in and offering high-quality services at competitive prices, Time Warner Cable's technical expertise, operating momentum and established commitment to diversity, and Bright House Networks' strong reputation for customer care and initiatives to expand broadband adoption to close the digital divide, the transaction will deliver significant tangible benefits to the people of Hawaii. I would like to take just a few minutes to talk about some of those benefits.

II. SERVICES AND CUSTOMER CARE

A. Residential Video Services

Charter remains an innovative leader in the delivery of video programming content to customers. Having now transitioned virtually our entire network to digital, Charter is well positioned to continue Oceanic's efforts to move its systems in Hawaii to an all-digital format. This is critically important for Hawaii because the move to all-digital will free up spectrum, allowing Charter to provide faster broadband speeds and significantly more high definition and on-demand channels.

Charter is also a leader in the creation of new video technology. Charter's innovative interactive, on-screen guide (which we call *Spectrum Guide*) offers a customizable interactive experience that allows customers to find video content more easily across cable TV channels and on-demand options. Because the Spectrum Guide uses cloud-based technology, it works on customers' existing two-way set-top boxes, so they can avoid the time and expense of having to get a new box. The Spectrum Guide in an app form will soon be able to work with innovative retail devices such as Roku. Additionally, for consistency between the television and app viewing environments, the Charter TV app will include the Spectrum Guide user interface. Charter has committed to deploy our Spectrum Guide quickly across the merged entity, including within the State of Hawaii.

Upon completion of the conversion to all-digital, Charter will begin deploying our new Worldbox consumer premises equipment system. This system will enhance the customer experience by providing new and improved box capabilities, such as additional simultaneous recordings and increased storage capacity for DVR users.

Furthermore, Worldbox utilizes a downloadable conditional access system and digital rights management platform, which enables Charter to source set-top boxes that lack costly

proprietary security systems. Because the Worldbox security system works differently than current boxes, it provides customers a greater degree of flexibility to take their converter equipment with them when they move. Deploying Worldbox throughout Charter's territory will enhance the user experience and enable the more cost-efficient provision of service. Furthermore, our adoption of Charter's downloadable security solution supports the development of devices manufactured by third parties, thereby increasing competition in the set-top box market and potentially driving down costs to consumers. Congress, the FCC, and consumer groups have long encouraged this sort of competition in the set-top box market as an important pro-consumer goal. Finally, Worldbox is designed to comply with the Environmental Protection Agency's ENERGY STAR 3.0 efficiency levels, which will help contribute to annual residential electricity savings, especially in Hawaii where electricity rates are some of the highest in the nation.

We know there is an interest in expanding cable and broadband offerings in Hawaii wherever economically feasible. Along with the technological advancements just discussed, Charter commits that within 4 years of transaction closing, the company will build out one-million line extensions to homes in our franchise areas. Additionally, the company has committed to spend an additional $2.5 billion in the build-out of networks into commercial areas within our footprint beyond where we currently operate. While we do not know today how many of those line extensions or commercial build out projects will be constructed in Hawaii, upon closing the transaction, we will evaluate each of the Oceanic systems to determine where they are appropriate.

Increased scale will also help drive investment, which is good for customers. The transaction will lower the per-customer fixed costs of investments, facilitating the deployment of

new technology and advanced infrastructure. In addition, substantial synergies will reduce the merged company's costs, providing additional resources to invest productively.

Finally, with regard to the provision of cable television service, let me assure DCCA and the public that Charter intends to meet its obligations under its franchises; this includes PEG. The company has a long history of working with the public, educational and government access programming communities. In fact, because of Charter's willingness to engage with those interests in a positive and constructive manner, some in our existing service areas have already publicly lent their support to the transaction.

B. Broadband Internet Services

Next, although I recognize DCCA's regulatory jurisdiction is limited to cable television, one of the other significant benefits is Charter's commitment to faster base broadband services for residential and small business customers (without modem fees), and consumer-friendly terms including no data caps, usage based pricing or early termination fees. In virtually all of our service areas, Charter's lowest broadband speed is an extremely fast 60 Megabits per second, which, among other things, allows several people in a household to stream HD video, while surfing the web at the same time. In addition, Charter will introduce a new broadband program for low-income consumers, as discussed later in this testimony.

The company is also committed to expanding mobile broadband options. Charter knows that Oceanic has already begun deploying WiFi access points in Hawaii. Charter commits that within 4 years of the closing, we will deploy 300,000 new out-of-home WiFi access points nationwide. Again, Charter does not yet know how many will be in Hawaii, but the company commits to evaluate the needs of each local system as we develop our deployment strategy and Hawaii will be included in Charter's outdoor WiFi plans.

Consistent with our commitment to delivering superior broadband service designed for data-intensive applications, like HD online video, Charter has long practiced network neutrality, and we will not block or slow down Internet traffic or engage in paid prioritization. This commitment will remain in place for at least the next three years, regardless of the pending judicial appeal of the FCC's *Open Internet Order*. And we have consistently invested in interconnection capacity to avoid network congestion. We have also committed to continue settlement-free interconnection, fostering Charter's good reputation among leading Internet content providers, like Netflix, which opposed the Comcast-Time Warner Cable transaction, but publicly supports this one.

C. Customer Care

Charter's pro-consumer approach includes a commitment to customer care. We are focused on improving Charter's customer service and will leverage the transaction to better our relationships with customers across our footprint. As previously stated, Charter has brought back jobs from overseas call centers and hired thousands of people to improve customer care services. The company also brought more field service technicians in-house, providing better job-training, benefits and opportunities for advancement, developing our own highly-skilled and well-paid workforce that will serve to improve overall customer care functions.

Charter also offers multiple easy-to-access support services emphasizing convenience and efficiency. The company offers same-day, evening and weekend appointments for service calls. Charter provides telephone and email alerts to customers with scheduled service calls to inform them of the arrival time of the technician.

To further ensure that our customers receive the best possible service, Charter has upgraded and expanded its system monitoring capabilities, and will continue TWC's practice in Hawaii of monitoring all two-way devices in the home – digital converters and modems – 24

hours a day, 7 days a week, 365 days a year. Customer service representatives also have the ability to access in-home information with the customer on the phone, so that they may provide remedies while the call is taking place.

D. Community Commitment and Investment

Finally, I would particularly like to highlight Charter's positive role in the communities it serves. Charter considers our relationships with the communities we serve as partnerships. The company will work with the DCCA staff to ensure that the transaction is seamless and that Hawaii customers receive the highest quality and most reliable services.

Charter will preserve and expand existing programs offered by the three merging companies that establish their strong corporate citizenship. For example, Time Warner Cable has recognized best practices with respect to diversity and inclusion for employees, suppliers, and corporate governance. Charter will incorporate and build upon these practices. Moreover, within six months after the transaction closes, Charter will introduce a new low-income broadband service, which will enhance Bright House Network's existing Connect2Compete program by raising speeds and expanding eligibility, while still offering a discounted price. This program, which will be offered in Hawaii, can enable many more families and children access to the tools they need to succeed in today's digital world.

III. CONCLUSION

In closing, upon approval of this transaction, the people of Hawaii can expect increased technological capabilities, faster and more widely available Internet service, a robust commitment to customer service and community initiatives, and enhanced competition for business services. I speak for everyone at Charter when I say that we are excited to serve the people of Hawaii and become a part of your communities.

Bamboo Inn

on Hāna Bay

September 16, 2015

To whom it may concern

I would like to express my concern over the purposed merger between Oceanic Time Warner Cable and Charter Communications.

Oceanic Time Warner Cable's record of service to the Hana area is at best spotty. Although they have improved the speed and reliability of internet service, they still lag in providing decent television service. Cable coverage, including premium packages, is unreliable with many channels unwatchable because of digital drop-outs or blacked out entirely. High Definition reception is not available under any circumstance.

Additionally Oceanic's customer service seems to be at their convenience rather than servicing customer needs. Unless there is a wide-spread breakdown, they make individual service calls in Hana only on Wednesdays, sometimes requiring appointment scheduling a week or more in advance. If the problem is with internet access, the service delays can be devastating, especially for those of us whose businesses depend on being on-line accessible 24/7.

The recent letter from Oceanic Time Warner promising triple internet speed and enhanced television service by the end of the year is encouraging, but it is also suspicious that their attention to service to Hana seems to coincide with when they have issues before the DCCA or other regulating agencies.

In short, my concern is that a larger, more bureaucratic and further removed cable service provider will be even less responsive Hana's needs. I could only support the Oceanic Time Warner/Charter Communications merger if there was an iron clad assurance (bonded?) that it will provide Hana with the same quality of service as that offered elsewhere throughout Hawaii. Otherwise, I'd rather just deal with the devil I know.

Sincerely,

John Romain

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A Broadband Access Market Framework: Towards Consumer Service Level Agreements

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Paper prepared for

28th Annual Telecommunications Policy Research Conference, Alexandria, VA, September 2000

FIRST DRAFT – DO NOT CITE OR QUOTE WITHOUT AUTHOR'S PERMISSION

Abstract

Ubiquitous broadband access is considered by many to be necessary for the Internet to realize its full potential. But there is no generally accepted definition of what constitutes broadband access. Furthermore, there is only limited understanding of how the quality of end-to-end broadband Internet services might be assured in today's nascent multi-service, multi-provider environment. The absence of generally accepted and standardized service definitions and mechanisms for assuring service quality is a significant barrier to competitive broadband access markets.

In the business data services market and in the core of the Internet, this problem has been addressed, in part, by increased reliance on Service Level Agreements (SLAs). These SLAs provide a mechanism for service providers and customers to flexibly specify the quality of service (QoS) that will be delivered. When used in conjunction with the new standards-based technical solutions for implementing QoS, these SLAs are helping to facilitate the development of robust wholesale markets for backbone transport services and content delivery services for commercial customers. The emergence of bandwidth traders, brokers, and exchanges provide an institutional and market-based framework to support effective competition.

This paper explains why broadband access creates a need for consumer-grade SLAs in edge networks. The form these agreements take will affect incentives by service providers to adopt technology and offer new services (*e.g.*, is it necessary to be able to guarantee QoS?), the extent and intensity of

competition (*e.g.,* how easy is it for consumers to compare alternative service offerings or assure they are getting the service they pay for?), the range of public policy options (*e.g.,* how might cable unbundling be implemented?), and the architecture of the Internet (*e.g.,* what's the role for content-delivery networks?). While the history of commercial SLAs highlights the economic role for such agreements and provides insight into the forces shaping their development, adapting such agreements for the mass consumer market poses new challenges. We examine prospects for consumer SLAs in light of recent technical and industry trends, specifically, the transition to broadband access. We discuss the implications for public policy, Internet architecture, and competition. The paper concludes with suggestions for further technical, economic, and policy research needed to more completely understand the market for consumer SLAs.

I. Introduction

The Internet has evolved from a publicly-funded, narrowband, research network into a market-driven, broadband, commercial network. Convergence, deregulation, eCommerce, and the Web have spurred substantial investments at all network levels to increase the capacity and capabilities of Internet infrastructure. Today, the Internet is supported on infrastructure facilities provided by a larger and more diverse array of service provider types[1] offering an expanded array of multimedia services (*e.g.,* Internet telephony, video conferencing, and streaming media). Delivering these more demanding real-time services across the increasingly complex Internet cloud requires support for end-to-end quality of service (QoS) guarantees. In the absence of end-to-end network integration, supporting such guarantees requires a hierarchy of contracts. As these contracts evolve and become standardized, they can provide the basis for the development of robust wholesale markets that are critical to sustaining competition and the distributed, yet-connected, architecture of the Internet. These standardized contracts may collectively be referred to as Service Level Agreements (SLAs).

As in all contracting regimes, the characteristics of the contracts depend heavily on the identities of the participants and the environment in which the contract is intended to operate. Therefore, one should expect that SLAs that are appropriate in the core of the Internet will differ substantially from those that are implemented at the edges; and, that the SLAs intended for mass consumer markets will differ from those that are intended for commercial applications. These agreements, however, will need to be mutually consistent in order to preserve the integrity of end-to-end transmission.

Lehr and McKnight (1998) anticipated many of the developments already occurring in bulk transport markets. These include the maturation and growth of bandwidth exchanges, the emergence of bandwidth brokers and speculators, and the creation of derivative financial securities such as futures, options, and bandwidth indices. In conjunction with these developments, substantial progress has been made towards

[1] This includes traditional telecom carriers such as AT&T, British Telecom, and Telefonica; new carriers such as Qwest, Level 3, and Global Crossing; and new types of service providers such as content-delivery networks offered by Akamai and Digital Island.

developing such standardized technologies as Diffserv, IntServ, and other mechanisms to expand the range and flexibility of QoS guarantees that may be supported.[2] Adoption of these technologies within service provider networks means that the basic technical and physical infrastructure is emerging within the core of the network and in the access services available to large commercial customers to support the holy grail of end-to-end QoS across multiple carrier domains. Extension of this market framework to mass consumer and small business markets at the edge of the Net is essential to complete the picture.

The goal of this paper is to identify important aspects and issues that will need to be addressed by SLAs for mass market consumer applications and relate these to what we know about current contracting trends elsewhere in the Internet. The transition to broadband access will make the development of such consumer SLAs more critical, but also potentially more problematic for a variety of reasons that we explain further below. Consumer SLAs will need to accommodate the reduced sophistication, lower tolerance for transaction costs, and smaller scale (less dollars and traffic per contract) that will characterize mass market services. We explain why the traditional telecom-derived approach to SLAs based on a detailed technical specification of the service's performance characteristics (*e.g.,* delay and jitter bounds, minimum and maximum guaranteed information rates, bit error rates, etc.) may prove unsatisfactory. Consumers and the eBusinesses (including content providers) who wish to communicate with them care about the quality of the user-experience and the end-to-end performance of specific supported applications (*e.g.,* Web calls to a customer service representative, streaming video, assured-delivery messaging services, interactive gaming, etc.) and not the underlying Internet services that make these possible. The business models of content-delivery networks such as Akamai and Digital Island are based in part on the need to fill this void.

Section 2 introduces a simple taxonomy for classifying SLAs based on the identity of the contracting parties. In Section 3, we use this to track developments in commercial contracting and to highlight some of the commonalities as well as differences that are likely to arise in consumer SLAs. After reviewing the history and trends in commercial SLAs, we explain in Section 4 why the transition to broadband access increases the need for consumer SLAs and explore the problems that arise. Section 5 offers summary conclusions and suggestions for further research needed to more fully understand the changing markets for consumer SLAs.

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[2] For more information on the Internet Engineering Task Force's work on quality of service-related protocols including RSVP, Int Serv and Diff Serv, see www.ietf.org. For more information on some of the current approaches being considered, see the papers presented at the MIT/Tufts Workshop on Internet Service Quality Economics, at: .http://www.marengoresearch.com/isqe

II. A Taxonomy of Service Level Agreements

In its most general form, a Service Level Agreement (SLA) is a formal contract between a service provider and customer[3] that characterizes the service that will be provided. This includes specification of the duties and responsibilities of both parties in the various future states of the world that are expected to prevail during the life of the contract.[4] SLAs are for a specific term which may be long or short, and may be renewable in a variety of forms.[5] And, SLAs are associated with a price. Through customization, this means that SLAs may be used to facilitate price discrimination.[6]

An SLA must be enforceable to be useful, which means that it must be verifiable. Otherwise it is just marketing hype. To accommodate this need, SLAs typically specify observable performance metrics. In the context of telecom-derived SLAs, this has meant specifying limits for key technical parameters that describe the characteristics of the traffic being handled and that are amenable (at least in principle) to third party measurement. The reliance on hard engineering metrics such as end-to-end delay limits, committed information rates, bit error rate thresholds, maximum burst size, average bandwidth provided and the like reflect a natural extension of the types of service-level descriptions used to characterize such traditional telephone services as leased lines, frame-relay, or ATM services. These metrics characterize the service providers commitment to provide service of a guaranteed quality. Failure to meet these promised standards (except under special circumstances) frees the customer from a duty to pay and may also incur penalties. Failure by the customer to adhere to his promised traffic behavior can result in denial of service or increased charges.

The economic role of these agreements is to lower the transaction costs associated with contracting for a particular quality of service and to allocate the risks and costs of producing and consuming the service. Such contracts are especially important in markets for intangible goods such as communication services which present a more complex challenge for trade than do tangible goods (like a loaf of bread or a personal computer). First, tangible goods are storable which means the production and consumption can be separated in space and time. This often simplifies the evaluation and verification of product attributes[7] and the operation of anonymous markets.[8] Second, much of the value of the service contract may be vested in the right (but not the obligation) to consume. For

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[3] As we will make clear below, the customer may be another service provider and the SLA may be reciprocal as in the case of a peering arrangement among backbone ISPs.

[4] Provisions for handling unexpected events or breach, whether explicitly or implicitly included represent an important component of the SLA.

[5] For example, automatically renewed unless terminated by either party; renewable at the request of one or both parties, etc.

[6] Because of this, as we explain further below, the specific details of SLAs are often not disclosed publicly.

[7] In the case of a durable good like a car, a judge can examine the item after purchase to verify it meets the terms of the purchase agreement. In the case of non-durables (consumables), a disaggregated distribution chain (independent distributors) can provide a natural point for verifying product quality.

[8] Matching buyers and sellers can be facilitated if production by the seller and purchase by the buyer can be separated in time and space.

types of SLA trading protocols are required in broadband access and wholesale bandwidth markets.[27] This has important marketing, business, and policy implications. As traffic characteristics and aggregation issues vary between local access and wholesale backbone bandwidth markets, technical requirements would also be very different at the edge as well. On the other hand, scalability issues may be less problematic so RSVP type solution might work. Clearly, further research will be required to resolve these questions.

While SLAs for broadband access markets offer many attractive benefits, they face equally daunting challenges. Even as the technical capabilities and business experience needed to support consumer-level SLAs is becoming more readily available, there are strong marketing and provisioning rationales for why we should expect service providers to resist offering robust and complex SLAs to their customers.

V. Conclusions

This paper makes the case for why consumer grade SLAs are needed to sustain end-to-end competitive provisioning of QoS-differentiated services. We trace trends in backbone infrastructure and service markets that are helping to provide drivers for the development of such consumer SLAs for edge networks. The expansion of capacity and proliferation of service providers, and the emergence of new trading mechanisms and QoS standards is providing the requisite infrastructure and facilities to support robust wholesale markets in the core of the Internet. However, their sustainability is likely to hinge on the ability to extend the benefits of such markets to edge networks. This need is more pressing in a broadband access world.

Broadband access will unlock demand for end-to-end QoS differentiated services. Both content-providers and consumers will begin to find it attractive to take advantage of the sorts of interactive, multimedia services that the Internet has been promising for a long time (*e.g.,* Internet telephony, streaming video, interactive gaming, etc.).

If these services are to be competitive, then consumers will need to be able to choose among multiple service providers offering comparable services. Consumer-grade SLAs will provide the basis for such comparisons.

Consumers don't value access for its sake but for the services it supports. In sum, there are two broad classes of SLAs which we expect consumers to prefer: (1) Access SLAs that specify generic performance with respect to certain classes of standardized apps – ability to support streaming video (of specified quality), ability to support two-way voice, etc.; and, (2) Service-specific SLAs with service provider (that may be same as access provider or may be application or content provider; in either case, will refer to as if application/content provider).

For such agreements to support competition as we hope, they will need to be integrated with the evolving technical and business solutions being adopted in core networks. This means additional research on trends in bandwidth markets and derivative

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[27] For example, we could imagine that one type of SLA protocol could provide broadband access guarantees partially derived from the RSVP protocol, while the SLA trading protocol useful in the backbone market take a more Diff Serv-oriented approach.

securities will remain important. To develop automated trading mechanisms for edge networks, additional research is needed to develop the appropriate protocols, technical implementations, and business models to support the operation of such markets. The viability of competitive broadband access markets will depend in how broadband access markets evolve. This means we need additional research on emerging competition and trends in service offerings. If direct regulatory intervention in the specification of access SLAs is to be avoided – as we believe is desirable at this stage – then it is important to indentify (and encourage) promising market-driven innovations in this area.

Clearly there is much work yet to be done at the technical, economic, business and policy levels for a vision of competitive provisioning of end-to-end QoS to be realized. In this paper, we have identified a number of the forces likely to shape and the issues that will need to be faced if appropriate, pro-competive consumer-grade service level agreements for broadband access are to emerge. In future work and in related work being undertaken by others within the MIT Internet and Telecoms Convergence Consortium (http://itel.mit.edu), we plan to explore these issues further.

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www.tachyon.net

Exhibit 1: Simple Model of Internet

End-user	Residential consumer.
Access ISP	Provides access service (retail) to consumer. Manages local access facilities (currently, either cable or local telephone facilities, but in future will include wireless services) which may be owned by the access ISP or may be leased from some other facilities provider on behalf of the consumer.
Backbone ISP	Provides transport and termination services (wholesale) to the access ISP. The access and backbone ISP may be vertically integrated or may be separate firms.
Content/Application Provider	Business that provides Website or application service (*e.g.*, streaming media or some other service offered over the Web) that consumer visits.