



Entertainment: The Broadband Killer App A FirstMile.US Perspective

What is Broadband?

Broadband is a way for you to connect to information sources like the web and the Internet. Using a big broadband connection will allow you access to the state-of-the-art entertainment, education and e-medicine – stuff you can't do over today's typical dial-up, DSL or cable connections.

Big broadband means instant gratification – getting the information you need, now. When we talk about big broadband, we are referring to a variety of broadband connection characteristics that allow great strides in the types of applications used. These include both fiber and wireless, size of the bandwidth, latency (bottlenecks) as well symmetry (same speed both up and downstream). Most experts agree that we need at least 100 megabits of broadband bandwidth to provide instant gratification for the kind of applications we expect in the next five years.



America Needs Broadband in the Home

Broadband in the American home represents an advance in technology that is sorely needed to keep pace with the technological advances across the developed world, and to help to bring the status and images of the developing world to everyone's living room and desktop, absent the filters of the mainstream media – or anyone else.

It is time to ensure America's technological prowess and our continued advancement in the standard of living Americans enjoy – the highest in the world. Given the power of images to shape our ideas and policies, broadband will help open the eyes of many to the status of others in less-developed locales. Once eyes are opened and communication channels established, economic growth will accelerate in developing countries, advancing the standard of living for all, likely at an ever-increasing rate.

But first, America needs a broadband-capable infrastructure to the home.

Building the Infrastructure

Putting broadband into the American home requires a significant investment in communications infrastructure. Having already been an advanced economy with advanced communications when the communications and Internet revolutions began, we had a copper-based wiring infrastructure already in place. Replacing these local copper connections is required to provide entertainment-quality broadband to the home (fiber or wireless).¹ Our long-haul communications already were on microwave or fiber, both broadband technologies.

Given our size, diversity and economic model (a government inclined to simply let market forces rule), a killer app² must be identified that will cause people to invest their own money into these broadband

¹ One could posit that DSL-type technologies will continue to advance, providing broader-and broader bandwidths to the home on the current wired technology. This incremental approach, however, will squander time and capital for short-term solutions. The long-term solution, and the only one worthy of massive investment, is fiber to the home.

² A killer application (commonly shortened to killer app) is a computer program that is so useful that people will buy particular computer hardware, a gaming console, and/or an operating system simply to run that program. From en.wikipedia.org/wiki/Killer_app

implementations, free providers from some levels of regulation and/or taxes, or cause the local communications infrastructure providers, be they cable, telco³ or satellite, to begin replacing the copper wire local loop with fiber.

What is this killer app? Entertainment.

Americans Support Entertainment

Entertainment is inarguably of economic primacy to Americans. Americans are more than willing to support advertisers and sports stadiums – where sponsors are providing multimillion dollar salaries to those playing games to entertain us. We are more than willing to lavish \$20M salaries on A-list film celebrities for their three months of work making a movie to entertain us. We are more than willing to support multiple magazine publications devoted to celebrities to the tune of over \$1B annually. We are willing to make gambling on entertainment, both legal and illegal, a multibillion-dollar business. Contrast this with our unwillingness to pay higher taxes to provide better education for our children (a different discussion.)

Broadband can provide consumers with more entertainment, in a more convenient way. With appropriate business model changes, entertainment is the *killer app* that will drive broadband forward and increase the standard of living of Americans still further.

Changing the Entertainment Business Model

So – how to approach this app? How to get the content (movies, television, live concerts, sporting events, etc.) available to be delivered into the home? Broadband is the technology, but it is the business model changes that make the implementation of the technology a profitable reality.⁴

The Current Media Content Business Model

The current model of media content being pursued in America by our studios and content providers is to:

- create a piece of content with costs ranging from \$20M to \$200M,
- distribute it very narrowly to reach all 280M people (think 200 theatres for an independent film to 3,000 theaters for blockbusters)
- control its play for a specific period of time,
- and then slowly broaden the distribution window to pay-per-view, cable, airline, rental and finally DVD sales to consumers,
- and *never* to distribute via current distribution technology: the Internet.

From an international standpoint the window model has yet another step. If you can think of buying a book in London, but not being allowed to read it in America, you have an understanding of the international region codes on DVDs limiting the expansion of content viewing across the globe.

While it is truly difficult to understand why consumers are willing to put up with this limitation on their freedom, and why those creating content want to limit the access of those who want to watch it (especially paying access, which more than likely will prove to be a historic anomaly; more on that below) – this indeed is the case.

Add in the current business model of the MPAA⁵ – sue their best customers, the ones who really *really* want their product to the point they are willing to break the law to get it – and you have an understanding of the business reality of the industry that happens to be the number one US economic export by dollar volume: filmed entertainment.

³ Telco is short for telephone companies.

⁴ As digital music files are so small that broadband really isn't required, and as the distribution of these files is a fast-maturing market, where video content (movies, TV shows) means both very large files and a nascent market, this article deals primarily with visual entertainment.

⁵ MPAA stands for the Motion Picture Association of America which was founded in 1922 as the trade association of the American film industry. Today the association advocates for strong protection of the creative works produced and distributed by the industry, fights copy-right theft around the world, and provides leadership in meeting new and emerging industry challenges.

Intellectual Property Protection is a Business not a Technology Issue

Protecting intellectual property is a *business* issue being dealt with as a *technology* issue, when it is anything but.

Napster, Kazaa, Grokster and all their brethren exist because consumers want entertainment – and because the owners of this entertainment don't want them to have it in any business model other than the current, decades-old one. It doesn't matter that file-sharing services are being shut down by American courts; they are regrowing, Medusa-like, every single day.

So consumers are getting their entertainment content elsewhere at a cost they are willing to pay in dollars and convenience. And this leads the discussion in a different direction.

For all of Hollywood's talk of multiculturalism, it is a decidedly Western enterprise. The concept of intellectual property itself is a Western one; it simply doesn't exist in the minds or cultures of the majority of the world's inhabitants. Why does so much piracy happen in non-Western countries? Because the idea of intellectual property, and hence of stealing it, is a very Western, and very recent historical concept. Who is to say it will survive the digital revolution? Who is to say it *must*?

While it is entertaining to listen to the most voluble of celebrity "multiculturalists" complain about digital piracy of their IP, it is difficult to take it particularly seriously. It is, after all, a multicultural world, right?

The greatest flowering of art, music, writing, of what is termed "high culture" itself, occurred without the protection of what has come to be known as "Intellectual Property," during the Renaissance, and the flowering of the arts occurred under patrons, not under IP protection.

Who is to say that this will not again occur? Some celebrity? Why will a concert not become the primary money-making venue for musical artists? Because they won't be able to command zillion-dollar deals with music studios that cause those studios to not seek out new talent? Please.



Back to Broadband

But – what has this to do with broadband?

Once the realities of global commerce and of our digital future are understood, the distribution of filmed entertainment will change dramatically. Once the reality that offensive technology will *always* beat defensive technology is internalized, the necessity will switch from *minimizing* viewing of that content through region codes, distribution windows and encryption, to *maximizing* viewing of that content by making it available at a reasonable cost, much as Apple has done with music via iTunes.

And making that content as ubiquitous as the consumer devices on which people want to watch it will – is fast becoming – the watchword. And this will usher in a whole new age of entertainment, and truly take us into a digital future.

This brings us back to broadband to the home, and to a change in business models that can make it a profitable reality for all, for it is broadband to the home that will allow the consumer to download the content they want to watch on these soon-to-become ubiquitous video devices, or simply to watch it on their schedule rather than one dictated by others.

Telcos and cable providers both are capable of providing broadband communications to the home. Cable providers are doing it now to a limited extent via shared pipelines. Many consumers will bet on Internet Service Providers (ISPs) and cable providers to compete successfully with the telcos.

There are problems with this bet, however. Regardless of the penetration of Voice over Internet Protocol (VoIP), and of telephone service provided by your cable company, the fact remains that when a power outage occurs, your phone still works, and your cable and DSL and satellite modems will not. Try calling 911 when your VoIP modem is down and your cell provider doesn't cover your neighborhood.

Telcos always will have communication capability, just as they now do. Whether one will be able to count on promises of a cable future of always-available digital "dial tone" is an unknown. The current level of customer service of ISPs has inspired more than a few jokes. The level of customer service of the cable industry has inspired its own movie.

What are the steps that need to be taken to modify the business model, opening up the studios to enable their prospects to become their customers? To provide those who want to watch their product, with, well, their product?

One Solution – Global, All Formats, All Media Release

Filmmaker Steven Soderbergh and industry maverick Mark Cuban already have that answer, and it will be interesting to see how it plays out in their capable hands. But let's go back to digital piracy to discuss it.

Professional pirates, in addition to working often in cultures that do not respect the Western notion of digital piracy, also require working capital. This capital is gained by selling pirated products. In a global day-date release, all media, all formats, where will the pirates get their money?

An executive at Universal Studios once told me that they believed a \$50 bribe to a Malaysian telecine⁶ operator caused him to make an exact duplicate of the digital transfer of the film *Jurassic Park 3* and give it to professional pirates in China. This cost Universal the Chinese market for that film, estimated at around

\$750M -- three-quarters of a billion dollars. Even if the pirated version was sold for 1% of that figure, that represents a profit to the pirates of \$7.5M. Can this really be prevented in a part of the world where annual earnings are on the order of a few thousand dollars, at best?

As Detroit discovered decades ago, if one's industry is going to be cannibalized, it is best to cannibalize it oneself rather than allow others to do so - either way it's going to change. Detroit began building smaller, better cars. What will Hollywood do? How does it fit with the Cuban/Soderbergh's plan?

Working with Mr. Cuban and others, Mr. Soderbergh is going to release his next few movies in what is called in the industry, global, day-date release. That means opening the movie globally on the same day. Rather than 3,000 or even 5,000 screens in the U.S., open the movie globally, all formats, all media.

The Future of Content Delivery

Like the movie? Buy the DVD at the concession stand on your way out. This is an impulse buy currently absolutely lost to the studios. Will people buy the movie later when it reaches - finally - the current consumer purchase window, *months* later? Not as many; interest will have waned, the impulse will be gone. Lost opportunity cost. Ask retailers how much of their sales come through impulse purchases. In the entertainment industry the answer is, "Zero." Not a good business model.

Not sure if it's worth a trip to the megaplex? Download the trailer and see. Not a big-screen value? Download the movie for \$5.00 and watch it at home. Again, if it isn't worth going to the theater to see (dinner, tickets, concessions and \$3.00 gas to get there and back), right now the studio isn't making any money on it at all. \$5.00 is a zillion-percent increase over that, right?

But - once out there, will people then transfer it all over the place, to all their friends, making the *first* \$5.00 the *only* revenue booked for that movie? Are you or your friends really going to go to all that

⁶ A telecine is the machine used to transfer film images to digital images.

trouble for \$5.00? But seriously... Do people still buy CDs even though the songs are on the Internet? Yes. Do they buy as many? No. Is Internet content delivery going away? No. Is Apple making money with iTunes? Yes. It is better to cannibalize oneself than to allow others to eat you.

If people want to see a *Gladiator* on the big screen, or see any large-format movie in a large-format theater, great. If they like it, they'll also like the DVD they buy on the way out. If they're unwilling to see it on the big screen, give them what they want on a format they desire, and make money doing so. Is that so difficult?

What You Want at the Price You Want

Everyone will be able to get the content they want for a price they are willing to pay, and in a format in which they want to watch it – and at a quality they expect. As people migrate to HD televisions, their quality expectations will rise – so will all the jobs to invent, design and build new systems at that definition level. And we're not even discussing home media servers, a computer server on which enthusiasts already are copying DVD (and other) content to then pipe around their homes to watch or listen to whenever and wherever they want. This is a market all technology companies are trying to conquer right now as the next big splurge in consumer device spending, based on: entertainment.

Suppose they download a movie for \$5.00, like it, and then burn it to DVD, or copy it to the media server? This is a bad thing? Your customer likes your product so much they want to keep it forever and watch it wherever they go? Like laws already on the books are going to stop them? Get the \$5.00! Make it up on devices consumers buy to watch the stuff.

Industry Convergence

Does this mean studios may gravitate toward mergers between content owners and consumer electronics? Did Sony just buy MGM's library?

Not only will titles from Sony and MGM be released as packaged media (DVDs, Blu-ray Discs), all of these titles are now owned by one of the premier consumer electronics companies in the world. Doubtless these titles will begin showing up

on PlayStations and any future consumer video-delivery device they invent. *That's* convergence.

So now that studios have all this cool digital video content they want consumers to watch, how much will a studio spend to keep them from doing so? They are spending millions annually right now. This is intelligent?⁷

The Farce of Protecting the Content

What about the costs to protect their content? Copying is a business problem that needs to be addressed by changes to business processes. Engineers inventing whiz-bang technology, promising the next version of "unbreakable" encryption, are not businessmen. Frankly, they are wasting the time and money of those whose business is making stuff people want to see, by trying to make that stuff impossible to see – except under their terms. This is freedom of the marketplace? It doesn't even make sense.

Making copying of studio content redundant, by making their movies available globally in the format their customers want, will increase their earnings, just as did the VHS revolution, against which they also fought tooth-and-nail. This stuff isn't rocket science.

Hollywood right now is suffering from one of its periodic downturns. They could use a change that would let them stop throwing money down this particular technology rathole. Recognizing that A-list talent isn't the only way to open a movie, that impulse purchases will bring in entirely new revenue streams, that opening up distribution channels their customers already use and are

⁷ Had the music industry, as recommended by countless insiders and technology vendors, put their catalogs up on their own servers as soon as the power of the Internet began to be recognized, allowing all of us to create our own playlists from the tens of thousands of hours of content gathering digital dust on their computer tape cartridges, no one would ever have heard of Napster. Unwilling to go back to a previously-successful business model (remember 45s?), sticking their heads in the sand of a business model based solely on the album, they were unwilling to do so. Now they are reduced to suing their best customers and complaining that people don't understand that talent must be paid to create. Like *that* argument will make it when talent is paid and behaves it does...

The DRM Roll Please: Filmed Entertainment and Digital Piracy

In addition to the distribution window model, content providers are dealing with the issue of digital piracy – which, again, is a business model issue. The only asset content providers have is, interestingly enough, their content – their intellectual property, or IP. In order to maximize their revenue from that IP, they need to maximize the eyeballs watching it. Digitization allows just that. Once digitized, content can be viewed and listened to anywhere at anytime and on a fast-increasing family of digital entertainment devices, from video iPods to PlayStations to advanced cell phones.

Why haven't the content owners digitized all of their IP and ensured its availability for a price? After all, Steve Jobs is making a bundle with digital music in a sustainable business model, even though free files sharing services abound. The content owners share in this revenue.

The answer lies in the extraordinary conservatism of the filmed entertainment industry. This is an industry, remember, which would rather greenlight James Bond 85 or Rocky 62, than to make an original movie; would rather find a vehicle for celebrities, no matter how silly (Gigli, anyone?) than to take a chance on a literate product. This is an industry that never would make 12 Angry Men, On the Waterfront, To Kill A Mockingbird today, other than as remakes. When the cost of an original negative is over \$80M, and no one knows if the movie will be a success, this strategy seems sane. But those finances are eminently fixable.

How, speaking of which, is this very expensive IP being protected in the digital world now? Other than suing one's customers? It isn't. Sure, studios and technology companies are creating all kinds of cool applications to administer what is called Digital Rights Management, or DRM. But this is a battle of defensive technology (studios) trying to beat offensive technology (pirates). Offensive technology by definition, however, always is advanced over defensive technology, for the simple reason that until one knows the offense, the defense cannot be designed. Simple concept, but seemingly too complex for the movie industry.

Of course, levels of encryption likely can be introduced to ensure no one can see the content, but it needs to be seen to be seen to be valuable. And, of course, encryption systems can be designed that are next-to-impossible to crack. But piracy rarely relies on cracking an encryption algorithm. The CSS encryption for DVDs was hacked because a licensee left source code out on the web – by accident and against the requirements of their contract. Movies also are pirated often by small bribes to insiders. Film cans get "lost," digital files get sent to the "wrong" address. Happens all the time.

You don't think that a new release showing up on the web before it's released into its first theater is because of outside piracy, do you?

Studios refuse to implement technologies to protect their content during production. Why? Developing and implementing a security infrastructure at a studio costs money. Where will that money come from? Taxing each production? The production company will just go to a different studio; their production already costs enough, thank you very much. Remember – studios don't make movies; they finance and provide space for production companies to do so.

No one has decided to be able to "afford" to secure their product. As one studio executive pointed out to me, it's tough to keep going to Congress and ask for protection when "we don't even protect our own stuff on our own lot."



begging for content owners to use to fulfill product orders, will increase their revenues, cut their costs and increase their profits. But it must be enabled.

Or, they can stand around and watch others move ahead as they continue to try to cling to a past that is as long-gone in the technological twilight of history as is a star-studded movie opening in a first-run theater in Westwood or Hollywood, not being shown even in San Francisco for weeks, and not reaching Kansas for months.

Baby, those days are over.

Increase Users, Increase Profits

OK, so now we know the future of content creation and viewing. But what does that have to do with broadband in the home?

Simple. That's what this is all about.

Broadband to the home will allow the studios to meet the desires of their consumers, and that's where the money is - in the consumer's pockets. (It isn't in theaters, which regularly lose money on the movie and make a profit only from concessions.) Broadband to the home will allow the continuing flourishing of a very large industry, one that creates thousands of jobs.

Once global releases are occurring, the majority of viewers may be in homes watching movies they have downloaded, playing electronic games based on the movies, often in Internet-enabled groups spanning the globe, and communicating with others about their experiences. Movie-based games are profit-making enterprises for these same studios. Enabling their access and play globally via broadband infrastructure will increase users, increasing profits.

Entertainment Drives Broadband to the Home

Broadband in the home will drive an increase in purchasing of HD television sets and high-quality sound systems, advanced gaming devices, more capable software -- all of which will drive high-tech jobs in the US and abroad, raising standards of living everywhere.

Once entertainment has drawn broadband into the home, the uses of that bandwidth will multiply enormously, with applications of which we have yet to dream, providing information, help, data and experiences we otherwise would not get.

The jobs created by this added capacity will be many in known technology areas - and likely many more in areas we have yet to think of.

Let's Get It Started

How does this get started? If the expected value to the economy of the opportunities presented by broadband is sufficient, legislation ought to be considered to assist infrastructure providers in the implementation of broadband fiber local loops.

After all, today we subsidize entertainment by creating a football stadium for 80,000 folks to watch a game twice-a-month for four months a year. If we assist broadband implementation, we will provide entertainment to 280M people 12 months a year, and move our standard of living upward at the same time.

It seems a logical thing to do.

About the Author

The author of this paper is a long-time entertainment industry insider. Part technologist and part industry pundit, the author has watched the industry flail over the notion of broadband delivery of entertainment for many years. Because of the controversial nature of this paper, the author has asked to not have their name disclosed at this time.

About FirstMile.US

The FirstMile.US objective is to build demand for big broadband through grass-roots education activities - creating the "I need that. When can I get it?" broadband attitude across the nation. Visit us at <http://www.firstmile.us>.

