

Online Video Presentation FCC March 21 2016

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TV or Not TV: Market Trends and Outlook of Online Video

Outline:

Beyond Linear TV: Technology

Beyond the TV Industry: Cloud TV

Beyond TV Regulation: the Re-emergence of Telecom-style Regulation

Presentation

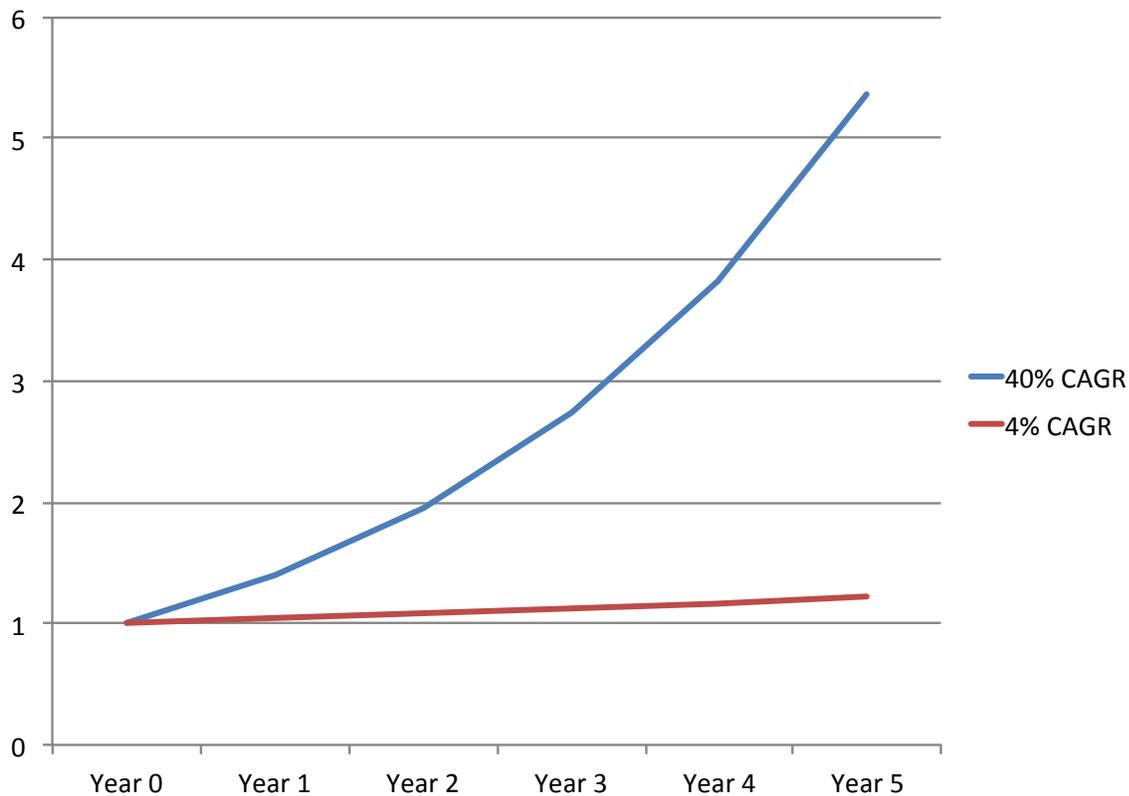
1. Beyond Linear TV: Technology

Information technology has been progressing at an exponential rate. Moore's law. Butters' Law. Nielsen's Law. About 40% a year. So everything is speeding up correspondingly, right? Not really.

Television has *not* been progressing at that rate. It has been around as a mass consumer product for about 70 years. From broadcast TV to multichannel TV, and now to digital TV. Many countries are still partly analog. One could use 70 year old TV sets. It has taken 30 years per generation. For the IT world that is a glacial pace.

In those 70 years, the pipe throughput has increased, if we are generous, from 12 to 200 channels. That's a CAGR of 4%. If we include recent 5x compression, that would be an overall 6% CAGR.

I dedicate that TV rate of change to David Sarnoff, the dominant corporate leader of early American TV. "Sarnoff's rate" is about 4-6% per year. Contrast this with the IT rate of change of 40%.



Even this comparison is very generous to TV, because it was not individualized but was a big, fat, dumb, synchronous pipe that just got fatter. (Only a few years ago did Digital ATSC broadcasting provide some limited flexibility.)

Part of the reason was that analog technology required a standardized broadcast channel product. And standards are slow to change. Lots of countries, device makers, broadcasters, content producers must come to an agreement. And part of it was the regulatory system that operated, until recently, on a one-size-fits-all.

But now, TV is migrating to the Internet. The 4th generation.

The change is not that the bandwidth is wider, at currently up to 1 Gbps for broadband. That's less than exists for the 1 MHz cable TV pipe. But these channels are synchronous. The differences now are with Internet usage is individualized. So now there are hundreds of thousands of options. It's pull, not push. One can watch at one's own time. It enables a meaningful 2-way. It permits P2P.

But even more important, it need not be a standardized channel definition. So for the first time there is a real technology competition in the core product. TV evolution now joins the IT revolution. We have to think through what it means for TV to move away from Sarnoff's Rate to Moore's Rate.

For example, the technology acceleration will also lead to an acceleration of content types. If the medium is the message, then as the medium changes, so does the messages. We will therefore experience an acceleration of culture.

Scale economies change. We will therefore lead to a change in the industry structure of the media sector.

And all this leads also to acceleration in the emergence of policy-relevant issues.

Unfortunately, the regulatory system has progressed slowest of all. In fact, and I say this without polemics intended, its rate of change of speed has probably been negative in recent decades. Too many procedures, too many cooks, too many contributors to the delay industry. So as the underlying industry and societal issues pick up speed, the gap with the policy and regulatory system widens.

One conclusion therefore has to be to for the process to be accelerated. Internal think tank operations. Collaborations with universities. Breaking up issues into manageable chunks where the stakes are lower.

Right now, what the FCC and Brussels seem to focus on is the low-hanging fruit: creating regulatory symmetry to the past standardized model. So we won't have different treatment of close captions. Content access. Good faith negotiations. Etc.

But dealing with that asymmetry, as heated it now is, will be the easiest set of issues. (Sorry for the bad news.) If we think of this OTT as just as another distribution platform for the same stuff, we are not thinking far

enough. The underlying medium itself is changing because technology and economics make it possible.

The “Widening”—more of everything—is just part of it. Much more significant is the Deepening. The Greater “Richness” of content. The greater sensory impact of media. More bits/second.

If we look at the history of media for centuries, it is a history of continuous decline in the price per bits delivered to the user.

So the user keeps consuming more and more bits because they become more affordable.

Thus, at an accelerating pace, TV will not be standardized products anymore. All kinds of variables will emerge in a competitive and creative environment. Personalized story lines, angles, and advertising. Interactivity, virtual reality, immersion, virtual worlds, massive P2P, super-high and low resolution, distance- insensitivity, new business models, Put all of these elements together, and it enables TV as an immersive, participatory, and personalized medium. The content moves from storytelling to experience. If the medium is the message, then the changed medium creates changed messages.

Obviously not all of video will be like that. Linear will be around but shrinking. The transition will be soft. But immersive content will be the frontier of technical and cultural creativity.

And the standard-product TV will be a shrinking subset. One reason is because when someone wants to escape an undesirable classification they will game the system and change the product slightly.

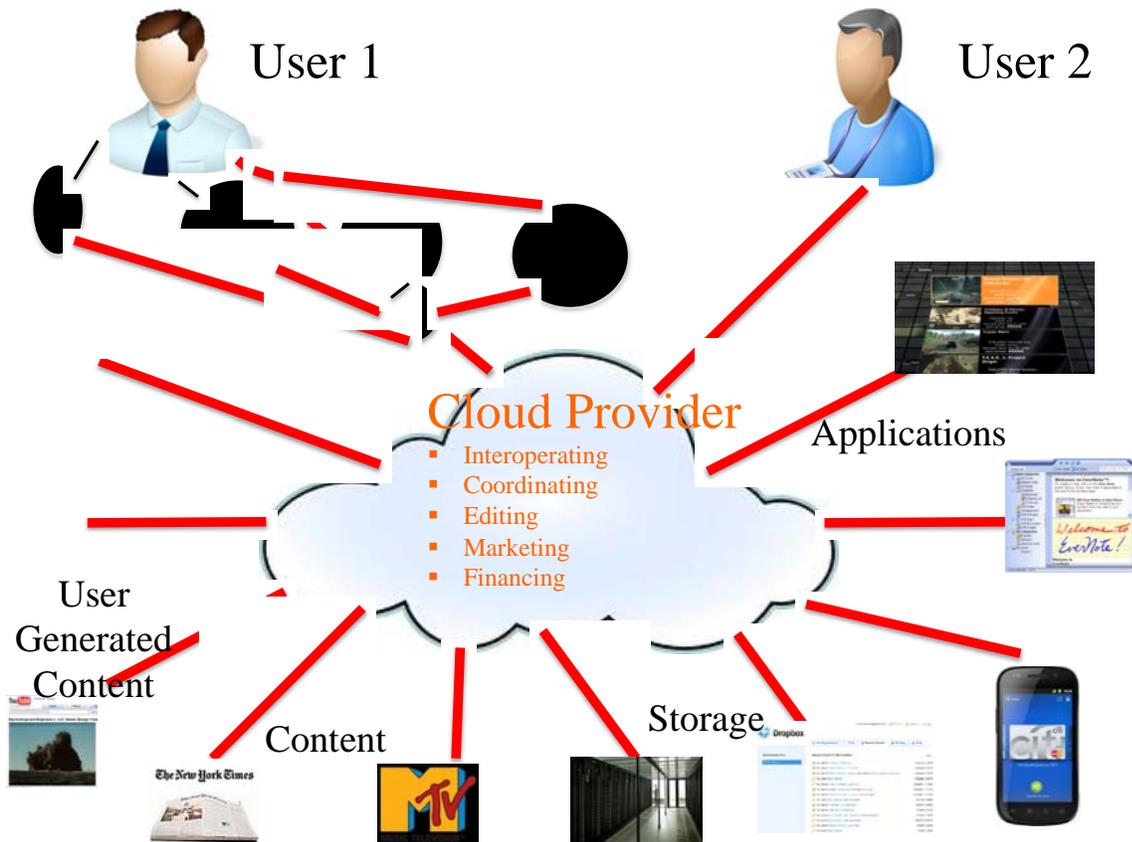
So the creation of online video regulation will almost certainly be on a mission creep if it wants to keep being symmetrical.

2. Beyond the TV Industry: Cloud TV

A central question is the media industry structure of the 4th Generation of TV, who will be the central actors? How competitive will be that market? This has a lot of regulatory implications.

I will argue that in the future, intermediaries which may be called “video clouds” will become the main media players. They are offered by companies such as Amazon, Netflix, Apple, Google, Microsoft. Not primarily because they provide access to storage servers and content. But rather, because they will be providers of intermediary bridging and integrating functions. They will be the integrators of functions and modules and content that is being provided by many other firms. These are smaller companies that make or develop new types of content, or provide supportive modules such as for interactivity , billing, e-

commerce, games, product placement, language translation, and many more.

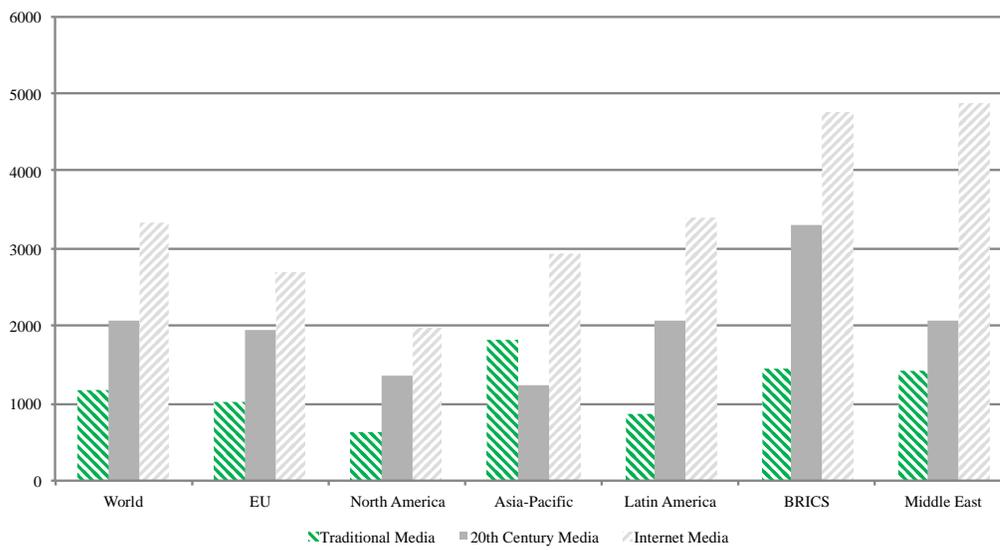


There are several reasons why such video cloud providers will become central, beyond simple storage.

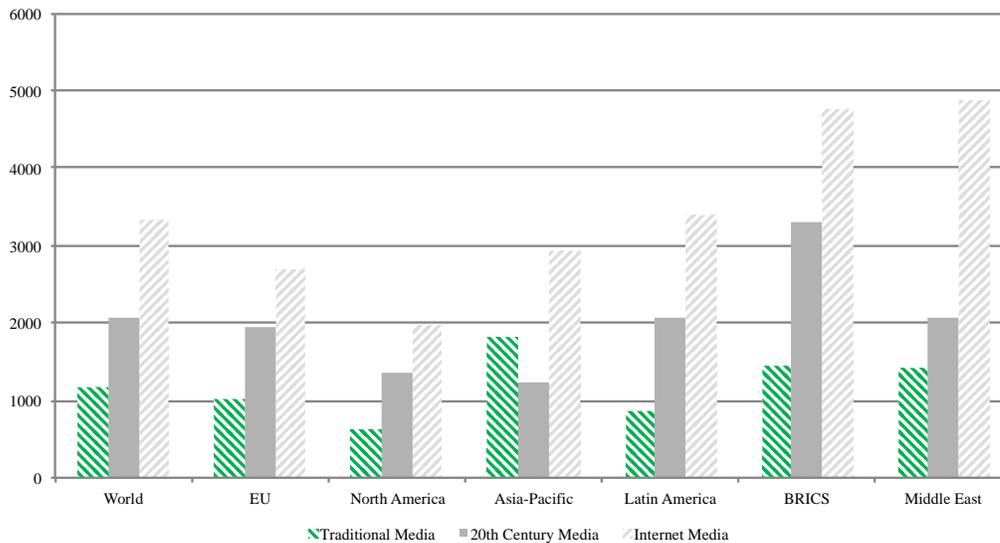
1. Bridging Standards
2. Convenience for users
3. Bridging regulations of various countries
4. Finance: allocation of revenues to various participants
5. Marketing, branding, quality control
6. Privacy and security
7. Personalization through data mining

Thus, such video clouds will be central players in the media environment. And, importantly, there will not be many of them, for reasons of the very high scale and scope.

Old and New Media - Average Concentration by Region



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And that means that the media of the future will be actually more concentrated than that of the past. Particularly if one looks at it globally. The conventional wisdom is, of course, that the new media system is less concentrated than the old. But that is not what the data shows in a long book I've just published on media concentration trends around the world.

These are the industries that were believed to be wide open and competitive, and which would open things up for the rest. But they exhibit strong concentration trends. The underlying economic factors are

easy to describe: High fixed cost and low marginal cost on the supply side, and high network effects on the demand side. This creates very high advantages to scale and an oligopolistic market structure.

If so, there would be market power of strong cloud providers

- Over users of their cloud
- Over providers of hardware, software, and content
- To gatekeeping power over content

And if it is difficult for consumers to move from cloud to cloud, which will negatively affect media pluralism and slow technology innovation

The implications are that, unavoidably, the FCC will be asked to deal with these clouds. In particular, it will be deal with the interoperability between the various clouds, assuring a “cloud of clouds.”

3. Beyond TV Regulation: the Re-emergence of Telecom-style Regulation

As mentioned, the danger of regulating online video is that it will have a built-in mission creep. And since everything will be online, all of America’s (and for that matter, the world’s) video content and its distribution will be FCC and Brussels regulated.

My conclusion from that is not to drop all regulation and get government out of online. That kind of principled internet libertarianism has lost its virginity in the net neutrality debate.

But rather, that the regulation by broad classification category, by these broad silos such as MVPD, will prove to be untenable.

Regulators need to focus on specific problems and deal with them, regardless of distribution platform or technology. In some cases jurisdictional limitations need to be updated by legislation to be symmetrical. But I would not let that run strategy. And all must be governed by the lodestar of the 1st Amendment.

So what are some of the problems?

It has been said that in literature there are only 20 plots. In ICT and media there are even fewer basic plot lines – about four:

- **Power** (monopoly, competition, vertical integration, ownership);
- **Access** (net neutrality, free speech, pluralism, interconnection, compatibility, standardization, non-discrimination, affordability, universality, diversity);
- **Protection** (children, privacy, security, copyrights, morality, reputation).
- **Growth** (innovation, infrastructure, development, industrial policy, trade, national culture)

Most of the regulatory issues are old friends. In no particular order:

- Inclusion of the poor and the rural
- Inclusion of the digitally challenged
- Morality, violence, and child protection
- Privacy
- Network upgrade
- Ownership restrictions (ceilings, cross-ownership, vertical, national)
- Libel and copyright enforcement
- Restrictions on certain ads, and truth in advertising
- Device attachment
- Interconnection and interoperation
- Content Diversity. Source Diversity.
- National culture, for many countries
- Revenue generation.
- Innovation.
- Interoperability.
- Protection of competition.
- Protection from spam.
- Cyber-security.

This is a formidable list, and it keeps growing. How would one go about dealing with these and other problems when they emerge? Some observations about how to proceed:

- A. not in advance
- B. by enabling competition as much as possible. But realistically, competition will not solve all issues.
- C. By not trying to solve every problem
- D. By proceeding in a common-law style of small but steady steps rather than big omnibus laws and regulations

And if we do so, what do we get?

In the past we had transmission networks of two types:

1. Networks that moved a relatively small number of bits, on an individualized basis—telecom , with telecom regulation
2. Networks that moved a lot of bits shared by many: the mass media of television, cable TV, and satellite TV. They were regulated as TV media.

And now, the individualized networks are becoming bit-intense media platforms. And the question is, what regulatory regime is applied. Telecom or TV? Which type of these two regulatory approaches will predominate?

We are not likely to pick one approach over the other in an explicit way. That would be a huge fight. Nor can we split the baby in half, one approach for the platform, the other for the upper layers. Different regulatory treatments for different layers. This kind of techno talk tends to intimidate a lot of people. But the reality is that the neat separation exists only in theory. Operations, companies and industries cross the layers all the time. Regulatory history shows us that a clean separation does not happen.

More likely, we will deal with the regulatory issues in a piece-meal fashion, dealing with issues as they come up. Over time, how will that add up? What all upper level services have in common is that they run over the lower-level infrastructure layer.

For regulators, it is often difficult to go after the electronic part of communications. But if one cannot reach the bits themselves and their source, one can still reach the physical elements of delivery: the networks.

Factors leading to infrastructure as the nexus for video regulation

1. Least mobile
2. Fewest participants

3. Market power
4. Existing sophisticated regulatory tools
5. Enforcer of content restrictions
6. Effective revenue source
7. Source of in-kind contributions
8. Customization of regulation

One of the principles of regulatory enforcement is that it is easiest to regulate the least mobile and elastic elements, such as land and physical goods. A second principle is that it is easier to regulate the element with the fewest providers. Both of these principles favor, for online activities, the choice of the delivery networks as the nexus for regulation.

And indeed the FCC has been moving in that direction. Common carriage. Universal service. A subsidy system. A Carterfone-style device connectivity. These are all derived from telecom regulation. Online regulation will come to resemble many elements of traditional telecom regulation.

In that process, what used to be television regulation will gradually become more and more telecom regulation. This, to me, is not a happy conclusion. But it is a reality to which you contribute in small steps. And today's discussion is one of these steps.