

Was Comcast's All-Encrypted All-Digital Transition Ethical?

Last year, Comcast received approval from the Federal Communications Commission to complete its transition to an all-encrypted¹ digital cable television network. This upgrade was “sold” to regulators and consumers on the grounds that it would drastically improve service: customers would receive better picture quality and sound, and since digital channels can be compressed to use less network bandwidth than analog signals, the upgrade would free up a vast amount of bandwidth with which Comcast would supposedly return to customers in the form of more TV channels or faster Internet access for the same price. On the surface, the all-digital transition² seemed like a win-win situation for everyone involved. However, time has clearly shown that this is not the case. The unnecessary transition resulted in lower-quality picture and sound, an increase in cost for all customers, and a sizable and measurable increase in Carbon Dioxide “Greenhouse Gas” emissions across the United States. As a result, Comcast’s transition raises significant ethical questions for not just Comcast’s customer base, but also all other U.S. citizens as well. Using key elements from Moor’s Just-Consequentialist Framework (Tavani, 56), Comcast’s all-encrypted all-digital transition is analyzed to illuminate the ethical issues involved in the transition.

The first step of Moor’s Just-Consequentialist Framework requires that deliberation occur from an impartial point of view to determine whether Comcast’s transition meets the criteria for being ethical. More specifically, the policy must not cause any unnecessary harm to individuals and groups; and the policy must support individual rights, the fulfilling of duties, and so forth. To address Moor’s criteria, readers are directed to consider both sides – including Comcast’s side of the deliberation.

It should be noted that Comcast chose to encrypt its entire network in order to strongly protect against unauthorized access (“stealing cable”). With the old method of installing channel-restricting filters, most people could simply remove the filter on the side of their house after the cable installer left in order to receive more channels than they paid for. Comcast could potentially argue that this situation resulted in a loss of revenue for the company (assuming that most who steal cable would be willing to pay for it). Since Comcast didn’t want to pay to hire inspectors to physically check these filters on a regular basis, and since Comcast had an economic interest in the matter, the company chose to require their subscribers to participate in their all-encrypted network to digitally guarantee that only authorized users were receiving content. In fact, the transition ended customers’ ability to freely connect as many

¹ Actually, channels available locally via broadcast were not allowed to be encrypted. However, the FCC did grant Comcast permission to encrypt everything else, including basic cable channels in 2009.

² Readers are reminded that this paper discusses the all-digital transition occurring on the Comcast Cable TV network – not the February 2009 Broadcast DTV transition.

TVs in their home as they wished – because every TV set must now either have a set-top box³ or a new and still very obscure technology called a built-in CableCard slot to decrypt the channels.

To be fair, it should be said that Comcast's intention was noble. They have a right to protect their network against piracy and therefore protect their economic interests. However, the method that Comcast chose to do so is seriously questionable. Consider for example the following three harms experienced by customers: reduction in picture and sound quality, increased cost, and sizable/measurable increase in CO₂ "greenhouse gas" production.

Before the all-encrypted transition, some customers had the ability to view the digital (and sometimes high-definition) cable TV channels without the need for a set-top box. These customers weren't receiving unauthorized content, because the channel-restricting filters on their cable line prevented viewing of content outside of their subscription level – just like analog cable. After the transition, all channels introduced encryption, requiring a set-top box or CableCard for every TV. Some HDTVs and almost all Media Center TVs did not (and still do not) come with CableCard slots for decryption, and in the case of the Media Center TV, high-definition inputs are simply not commercially available. As a result, users of Media Center TVs without CableCard readers (most of them) can no longer receive cable channels in high-definition: the best picture and sound available to most of these consumers is a standard definition picture through a cable box's S-video connection and Stereo RCA cables for sound. For these users, Comcast's all-encrypted all-digital transition did not benefit them: while Comcast benefitted from reduced piracy, these users only received a significantly lower quality picture and sound product at the same price as before.

Comcast's all-encrypted all-digital transition should also be analyzed in terms of cost. Should customers be responsible for an increase in their cable bill due solely to the introduction of a new technical measure that they didn't need in the first place? [After all, not all customers steal cable: It is probably safe to assume that most cable customers did not remove their channel-restricting filters.] Since these customers did not need the new technology and did not ask for it, should they still be required to pay for the upgrade? Certainly the answer to this question should be no. However, by shifting the cost of power to run the system onto consumers (by requiring an extra "digital transport adapter" for every TV set), even if Comcast doesn't charge more for the new service, their customers are still having to pay more for their service after the upgrade. Those with more than 3 TV sets in their homes actually do experience an explicit cost increase from Comcast in the form of an extra cable-box lease. Even in the best case scenario, where a subscriber has fewer TVs than the maximum number of free cable boxes, these customers still must pay more for the same service they had before because they will need to pay extra to their power utility to support the extra cable box. Since the intent of the encryption is to protect Comcast's economic interests, and the transition makes it explicitly and implicitly more expensive for customers to receive just the same level of service as before, one might argue that these benefits are not equal and in fact biased towards Comcast when it comes to cost.

³ "set-top box" and "cable-box" are used interchangeably throughout this paper. This is partially due to laziness on the author's part and also due to the fact that they are basically the same thing, with the one exception that Comcast does not allow DTAs to access any premium content.

In the last paragraph, the cost implication of increased power consumption was touched upon. Readers are now directed to consider the environmental impact of this power consumption. The sticker on the bottom of my digital transport adapter says that it consumes 6 volts at 0.7 amps. Doing the math (bear with me...), this equates to 4.2 watts. Multiplied by 24 hours and divided by 1000 to give us a figure that is standard in the industry and therefore easier to compare, each day just one digital transport adapter consumes 0.1008 kWh (kilo-watt-hours) of electricity. According to Wikipedia, Comcast has 25 million subscribers, and after the transition each subscriber is eligible for 3 free digital transport adapters.⁴ Multiplying our 0.1008 kWh figure by the number of subscribers and the number of boxes they can receive, we receive a number: 7,560,000 kWh. This number is astounding, even for people who don't understand what a kilowatt hour means! Over seven and a half million kilowatts of power are consumed every day in the United States by Comcast's digital transport adapters. To give a comparison, this figure is close to the daily output of an average municipal coal-fired power plant. Holy freaking cow! I do not mean to bore readers with environmental mumbo-jumbo, but readers should be left with the impression that Comcast's small decision to encrypt their network has a significant effect on the country's power grid and is directly responsible for a sizable and measurable increase in greenhouse gas production. This is clearly not in the best interest of U.S. citizens and it can be linked to explicit harm (For example, a community may experience increased acid rain due to a need for increased coal-power production).⁵

Through an analysis of change in picture and sound quality, changes in cost, and effects on the environment, it is clear that Comcast's decision to encrypt their cable TV network has harmed consumers. Through the practices of not providing CableCard readers for Media Center TVs, by restricting the number of TVs subscribers can connect to the network without added cost, by not crediting customers for power costs due to the changeover, and by negatively affecting the environment in a sizable and measurable way, Comcast may not be fulfilling its obligations or appropriate duties to its customers. Adding to this, the transition does not keep constant or improve individual rights. Since the required criteria in Moor's Just-Consequentialist Framework are not met, Comcast's decision to encrypt its network is seen as unethical – especially considering that the old, cheaper, and less environmentally damaging method of restricting access to appropriate channels was not ineffective itself.

Works Cited

Wikipedia, Comcast, Tavani Book.

⁴ One might argue that some customers will not need any extra digital transport adapters. However, readers are reminded that while this may be true, it is also true that some customers, like nursing homes for example, might need hundreds of digital transport adapters. To keep the math simple, this paper uses the number of free DTAs provided by Comcast for a simple rough figure.

⁵ The implications here are innumerable, and quite disturbing. Unfortunately, this paper is not focused on environmental implications of technology, and therefore further discussion of this topic at this time is outside the scope of this paper. Readers are encouraged, however, to consider the implications and possibilities.