

Repository Entry Template Embedded EthiCS @ Harvard Teaching Lab

Overview

Course:	CS145/245: Cloud Networking and Computing	
Course Level:	Upper-level undergraduate/ graduate	
Course Description:	"Clouds have become critical infrastructures for many applications in business and society (e.g., social media, public health, and entertainment). In this course, we will take a look inside the cloud infrastructure and learn critical technology trends and challenges in the networking and computing layers. We will discuss the design choices of performance, scalability, manageability, and cost in various cloud companies such as Amazon, Google, Microsoft, and Facebook. This course includes lectures and system programming projects." ¹	
Module Topic:	Regulation of Cloud Service Providers	
Module Author:	Lyndal Grant	
Semesters Taught:	Spring 2021	
Tags:	cloud computing [CS], critical infrastructure [CS], public good [phil], free speech [phil], property rights [phil], and economic rights [phil], positive vs negative right [phil]	
Module Overview:	Cloud service providers (CSPs) provide on-demand computing resources to businesses, allowing them to meet their computing needs as they grow without making risky and expensive investments in IT infrastructure. This module considers how much power cloud service providers (CSPs) should have over how their services are used and, in particular, whether cloud service providers should be able to refuse service to particular customers on non-legal grounds. Should CSPs be regulated like public utilities (such as telephone companies), which are required to offer their services at reasonable rates to all interested customers? Or should CSPs, like most companies, reserve the right to refuse to do business with clients whose behavior they deem objectionable? We explore these questions through the lens of three illustrative case studies: Amazon Web Services' denial of service to Parler, Amazon Web Services' denial of service WikiLeaks, and the campaign of Amazon Web Services' employees to deny service to Palantir.	
Connection to Course Material:	In this course, students learn about the technical aspects of the cloud computing business, studying the design choices made by major players such as Google and Amazon. This module builds on that material by asking students to consider how a company's decisions regarding which customers to serve might affect those customers' rights and interests, and whether new regulation is needed to	This module covers a policy issue. An alternative module for this course discusses electronic privacy and security as they apply to cloud computing services.

¹ <https://minlanyu.seas.harvard.edu/teach/cs145-spring19/>

ensure they do not wield their power in ways that unjustly restrict the freedoms of others.

Goals

- Module Goals:**
1. Familiarize students with scenarios in which the interests of CSPs and cloud computing consumers might conflict.
 2. Introduce students to the distinction between positive and negative rights, particularly as it applies to free speech, property rights, and economic rights.
 3. Give students practice applying different conceptions of rights to concrete cases involving CSPs.
 4. Have students think deeply about the ethical responsibilities of CSPs, given their increasingly central role in commerce and social life.

Key Philosophical Questions:

1. What are the social roles and responsibilities of CSPs? What *should* they be?
2. How much power should private corporations have when it comes to regulating speech?
3. Given the importance and ubiquity of cloud computing to economic and social activity, should CSPs be regulated like public utilities—restricting their freedom to decide whom they provide services to?
4. Given that CSPs own their computing resources, do they have the right to determine who uses those resources and how?

Ethical concerns about whether CSP's should have unlimited power to refuse service on non-legal grounds arise primarily because of their increasingly essential role in public and economic life. It is worth making clear to students that these issues are not, therefore, unique to CSP's: similar issues can and have been discussed in relation to internet service providers, social media platforms, and others.

Materials

- Key Philosophical Concepts:**
- Negative and positive rights
 - Free speech
 - Property rights
 - Economic rights

The concept of free speech is useful as a way of illustrating the distinction between negative and positive rights. Contrasting a broadly “non-interference” account of free speech with a positive rights account akin to that proposed by many advocates of campaign finance reform, as in the case of *Citizens United v. Federal Electoral Commission* (2010), helps to make the distinction clear.

Assigned Readings: No readings were assigned for this module.

It is also worth drawing student's attention to the fact that not all relevant cases where a CSP refuses service to a customer on non-legal grounds appear to involve a right to free speech, as in the case of Amazon Web Services and Palantir. This module was running at the time that AWS was denying service to Parler, sparking debate over Section 230. Therefore, it is likely that there will be subsequent news coverage or other accessible readings that could be assigned for this module.

Implementation

- Class Agenda:**
1. Question for the day: Should CSPs be able to refuse service on non-legal grounds?
 2. Case studies:
 - Amazon Web Services and Parler
 - Amazon Web Services and Wikileaks
 - Amazon Web Services and Palantir
 3. Negative and positive rights; free speech rights.
 4. Argument that CSPs should be able to refuse service (based on their property rights).
 5. Argument that CSPs should *not* be able to refuse service (based on consumers' economic and social rights).
 6. Argument that CSPs should be regulated like public utilities.

It is helpful to begin the module with these three case studies, as students are unlikely to already have in mind any concrete examples of CSP's refusing service on non-legal grounds. The argument that CSP's should be regulated like public utilities is similar in important respects to arguments for net neutrality (for internet service providers), debates about common carrier law, and Section 230 of the Communications Decency Act. Students are unlikely to be familiar with these debates, and the issues involved are complex, so the Embedded EthiCS TA should choose the framing of the issue that they find simplest and most compelling.

Sample Class Activity: After introducing students to the central case study for the module—Amazon Web Services' denial of service to Wikileaks following Wikileaks' release of thousands of classified US government documents—students are broken up into small groups and asked to read the following statement by Amazon regarding their decision:

[By agreeing to our terms of service] "you represent and warrant that you own or otherwise control all of the rights to the content ... that use of the content

In response to WikiLeaks' accusations that Amazon Web Services had violated its free speech rights, Amazon responded that WikiLeaks had violated its terms of services by using its service to publish stolen government documents. This activity gives students a chance to evaluate that argument for themselves, and to begin thinking

you supply does not violate this policy and will not cause injury to any person or entity."

From AWS statement: "It's clear that WikiLeaks doesn't own or otherwise control all the rights to this classified content. Further, it is not credible that the extraordinary volume of 250,000 classified documents that WikiLeaks is publishing could have been carefully redacted in such a way as to ensure that they weren't putting innocent people in jeopardy. Human rights organizations have in fact written to WikiLeaks asking them to exercise caution and not release the names or identities of human rights defenders who might be persecuted by their governments."

Students are then asked to discuss the following question: in booting WikiLeaks off its servers, did Amazon violate Wikileaks' free speech rights?

about the broader implications of Amazon's handling of the case and whether its response was warranted. This activity also sets us up for discussion of a further case study later in the module -- Amazon Web Services was recently pressured by critics to terminate its relationship with Palantir (an American software company specializing in data analytics) due to Palantir's contractual relationship with US Immigration and Customs Enforcement (ICE). These critics cited Amazon's statement above in making their argument (and in particular the passage concerning putting innocent people in jeopardy), so having students engage with the statement does double duty as preparation for that discussion.

Module Assignment: No assignment for this module was given.

Lessons Learned: This module was well-received and generated enthusiastic discussion among the participating students, who were a mix of advanced undergraduates and graduate students.