

Internet Future

Recall

Firewall
Virtual Private Network

Privacy Issues...

Vendor Studies Its Consumers

Cookie -- use to track which pages a consumer visits -- develop a "profile" of their interests

This enables the vendor to send more appropriate marketing to the consumer

Bad for Consumer?

Is the consumer worse off if the vendor knows more?

Economics: Vendor "vs" Consumer

What is the zero-sum relationship between a vendor and a consumer?

Zero-sum model (like basketball) -- in that case the vendor better or makes the consumer worse off

However, that is the wrong model for the more typical mutual-benefit vendor/consumer relationship

It's more like the relationship between plants ($\text{CO}_2 \rightarrow \text{O}_2$) and animals ($\text{O}_2 \rightarrow \text{CO}_2$), see below...

1. Bakery

Suppose your town has many bakeries, and they all sell a dozen donuts for about \$5

One year, someone creates a donut making machine, that ultimately can make a dozen donuts \$1 more cheaply than before

There is \$1 in value "on the table" between the bakery and its consumers -- who will get the dollar?

With competition, the consumers get almost all of the dollar -- a dozen donuts drops to \$4 a dozen

Without competition, the bakery gets all of it

e.g. the "green revolution" of the last 50 years (fertilizer, hybrid plants) ... has resulted in: cheaper and cheaper food and farmers making the small percentage profit they were making before the green revolution. The benefit "passed through" to the consumers.

2. Toxic Waste Dump

Suppose a company is coming to your yard once a week and illegally dumping toxic waste -- it costs \$1000 to rent the truck and whatnot to do this

Suppose they get a cheaper truck, and so they are able to do it for only \$500 a trip. They may continue doing it once a week and keep the \$500 savings. More likely, they will reach a new equilibrium where they dump 2 times every 3 weeks and still pay less than they did before.

This relationship is not the "mutual consent" type

Instead, it is a true zero-sum situation, so technology allowing the vendor to do a better/cheaper/more-efficient job is worse for the (non-consenting) consumer

This sort of situation is rare -- try to think of one -- it will typically involve some sort of externality which is either illegal or which (IMHO) should be illegal

This is also why rent control is a bad idea -- it treats the landlord/tenant relationship as being type (2), when in reality it is type (1). Declaring that doctor visits should be, by law, \$1, does not result in plentiful, cheap doctor visits. It results in zero doctor visits.

Advertising Supported Content

The dominant model for content distribution at this time -- TV, newspaper, Internet

Not books, not college, mostly not movies

There is consenting trade between you, budweiser, and "friends"

Budweiser "pays" you by paying for the production and distribution of a "friends" episode

They attach their ads to the friends episode

Or put from Budweiser's point of view, they buy some of your attention with the friends episode

Amazon

Amazon sells books, but they also sell advertising (like the Friends show)

They consume some of your attention in exchange for providing a service you want (books, reviews, etc.)

Suppose you see 20 ads during a typical trip -- many of the ads are not for thing you would want -- a waste

Suppose Amazon knows the sorts of books you like, and so can show you 20 targeted ads

It's just like the donuts -- if amazon is in competition, then the system should eventually re-equilibrate where they can now show you 10 targeted ads instead of 20 random ads. (or put the other way, they have to pay you more content to see each ad)

If amazon does not have competition, then they just show you 20 targeted ads and pocket the extra money.

Spam

Spam is exactly the "externality" case

The spammer sends out ads without "paying" you anything

Technology that helps the spammer, hurts the "recipients" (consumers is not quite the right word)

Conclusion: Ads Ok

Outlaw "stealing" attention from the consumers -- Spam. Don't lump consenting and non-consenting systems together.

Realize that if vendors learn more about their consumers, this value can ultimately pass through to the consumers...

Higher "pay" to the consumer per ad

More targeted ads are less annoying -- I'm never going to buy an SUV, so stop showing me those pathetic feel-less-insecure-with-our-gigantic-SUV ads

Conclusion: Ads Bad

On the other hand, ads compete for attention with things like going for a walk, spending time with kids -- they have no budget to compete in the bidding war for your attention.

Unfortunately, advertising is an information activity, so the ability to attack your attention is going up exponentially.

Ads everywhere -- in the floor of Safeway, pressed in to the beach sand with a I think this is unfortunate.

Policy: remove the tax-deductibility of marketing expenses.

The 1st amendment requires us to allow the speech, but we don't have to subsidize it!

Current Payment Scheme

Buy attention with content, use to sell ads

Direct to Artist Economy

Content consumer pays the artist for the content -- no advertising

Depends on some sort of "micropayment" scheme where a person can send some small amount to the artist

Challenge 1: Micropayments

Need technology that can transfer very small amounts

Now, advertising is the "micropayment" -- you seeing an add is worth \$0.005

Challenge 2: Napster

Need people to actually pay -- if Napster exists, they probably won't.

Although if the payment is small, sufficient honest people may pay anyway

It just needs to pay the artists more than than the current advertising scheme

Challenge 3: Content Holders

The content holders are risk averse

History lesson: the movie industry fought the development of the VCR with incredible ferocity for years. Ultimately, the VCR made them billions.

Challenge 4: Advertisers

The advertisers are used to consuming your attention -- they will not go away

Example: you pay for Cable and it still has ads

This is my nightmare -- I want a direct to artist economy, but it may never be one of the available options. Pay for the content **and** it has advertising. Advertising everywhere

CS193i Themes...

Cheap Information Tech

Getting cheaper all the time -- imagine a world where bit technology is the cheapest thing possible. It's so cheap, it's everywhere. It's just given away -- like a drinking fountain.

Standards

Developed by non-profits, the government...

Freely implementable

Lead to participation-> Network Effect

Network Effect

N^2 value

Trumps tech merit

Best: Public network effect: TCP/IP

Ok: Private network effect: Win32

Information Problems

Most interesting Internet applications use technology to solve genuine information problems...

Amazon

Obvious: Sell books

Non-obvious I-prob: exchange unbiased review information with others to select the best book. Amazon is the catalyst for this free-exchange between people.

Ebay

Obvious: Connect buyer and seller

Non-obvious I prob: provide consistent anti-privacy identity so that people who do not know each other personally can trust each other enough to exchange goods.