

# Analysis

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Continuing the discussion of the analysis of network effect economics

## Recall

Prisoner's dilemma  
Tragedy of the commons  
Scenarios leading to TCP/IP dominance

## Network Effect -- Winner Take All

Two common outcome in conjunction with the Prisoner's Dilemma...

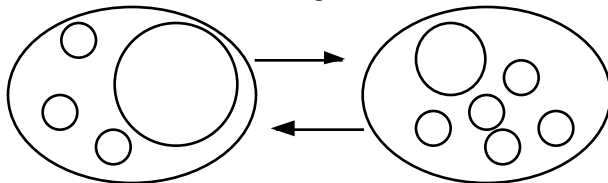
1. Dominant proprietary standard (Win32)
2. Dominant public standard (TCP/IP)

## Standards -- Commodities

Standards means you can replace the A solution with the B solution at any time. The vendors are in competition in the standard domain. The vendors do not like this, although it's a respectable living. The more I learn about the Internet, the more I appreciate standard compliant vendors.

The vendor can spend energy with proprietary standards, patents, genuine innovation, and anti-competitive contracts specifically to avoid selling a standard, commodity product with the attendant competition.

## Commodity/Standard -- Mutual Benefit



Mutual Benefit -- get competition/health on both sides of the standard.

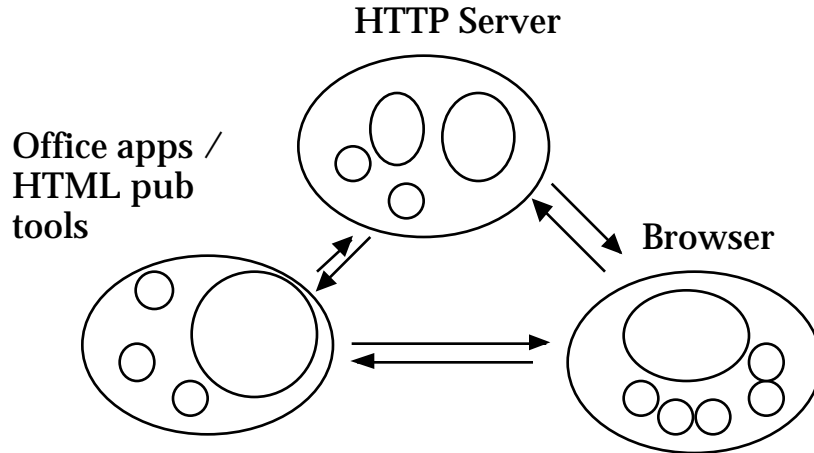
HTTP standard -- browser and server

Gasoline standards -- oil company and car manufacturer

Electrical plug standard -- electricity distribution and electric appliance makers  
(contrast to cell phones)

However, there is competition, so profits are somewhat limited (note that gasoline companies and car companies are both very profitable)..

# Competitive Internet



## Competition

The various domains are replaceable, therefore they compete

## Consumer Benefit

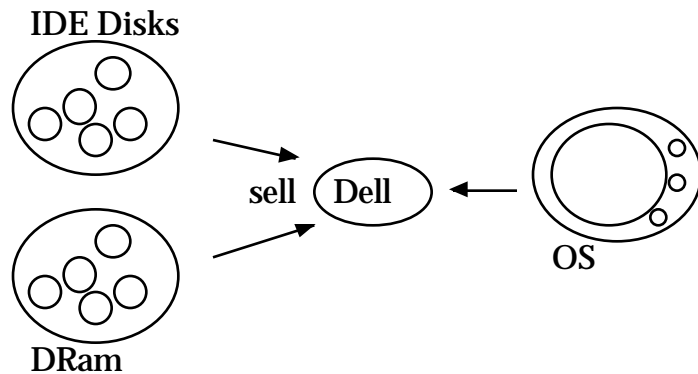
Consumers of the Internet benefit

## Vendors -- 2nd best outcome

They don't get a monopoly

But at least the overall market is big and healthy

# Consume Commodities



Consume commodities (they compete, you benefit)

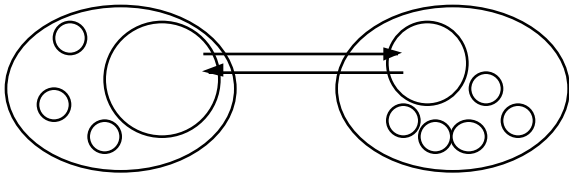
Produce non-commodities (avoid competition)

e.g. Dell and Gateway vs. Maxtor and Micron

e.g. Microsoft / Apple

What Dell does to Maxtor, Microsoft does to Dell.

## Anti-Standard Embrace and Extend Vendor Lock-In



It's natural for the vendors to set things up so you can switch to a competitor...  
Build technology that conforms to the standard, but works with the one vendors own products in some special way.  
e.g. Microsoft -- email client works with standard email, but integrates with Office apps in MS proprietary ways. This creates some value for MS customers, although it has lead to huge security holes. e.g. Microsoft email client generates HTML that happens to look bad on non MS email clients. This is especially ironic since HTML is all about portability.  
e.g. Oracle -- support standard SQL, but encourage customers to use Oracle proprietary extensions, so your applications will not work on other SQL implementations.  
Analogy: escalator into the building (the standard), but pit-of-fire to get out. (lock them in to your particular implementation)

## Strength in one area to build strength in another -- Illegal Monopoly

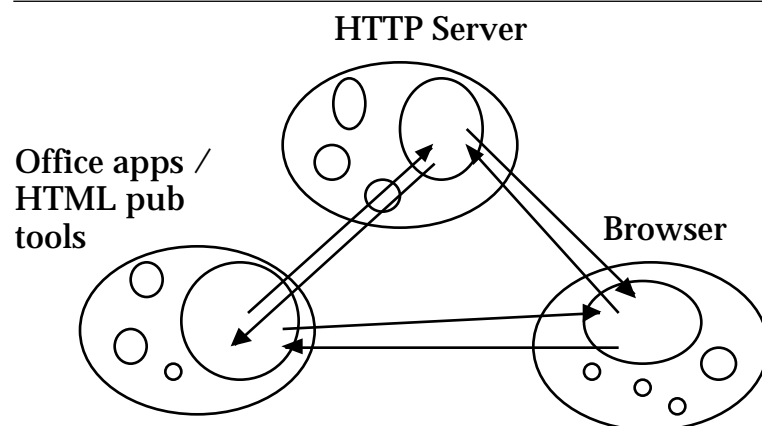
Disclaimer: I own Microsoft stock, but I still think they are extremely guilty of monopoly abuse that is costing us all.

Use strength in one area to build up strength in another.

It turns out this is one of the things that is illegal for a monopoly to do in the US. Suppose you want to make your "new" thing as popular as your old thing...

1. Bundling / Marketing -- bundle the new thing with the already popular thing
2. Tech Tying -- set up the new thing so it has special technical ties to the already popular thing

## How To Take Over The Internet



Use embrace and extend to interlink proprietary solutions in each domain. The proprietary solutions are not replaceable with other solutions, so the competition goes away

Microsoft is the only company in a position to do this at present, although any vendor would do it if they could.

## Commodity Failures

Examples where there is not a single dominant standard. Instead the market is partitioned among the vendors each with their proprietary standard. Each vendor avoids competition within their domain.

Tragedy: we (both the vendors and the consumers) are missing out on the network effect value, economies of scale, etc.

Inkjet Carts, Cell phone standards, Lens mounts (Canon vs. Nikon)

## Aside: Expensive Printer w/

### Commodity Ink

This product does not exist and it probably never will.

All the manufacturers sell cheap printers with expensive, proprietary ink where they make the money back. If the ink were a commodity, this economic model would not work.

The manufacturers are taking advantage that humans have a too much of a bias to save money up front. This is too bad -- it's the same sort of thinking that leads to global warming -- the wrong short-term long-term tradeoff.

## 1. Network Effect Value

Public standard

Proprietary standard

## 2. Network Effect Beats Tech Merit II

Hypothesis that, e.g. lens mounts, e.g. cell phone standards, we'd be globally better off with a somewhat inferior lens mount technology if it were a commodity. What you lose in technology, you more than make up from the competition over time.

e.g. IDE

e.g. TCP/IP

## 3. Intelligent Consumer/Engineer

Aware of network effect (the vendors certainly are)

Avoid vendor lock-in

The responsible engineer -- I think anonymous engineers are partly responsible for the adoption of standard. They implement to the standard, even if it is not in their company's self-interest, because the engineer realizes that it's globally the "right" thing.