디지털 혁신과 규제

강정수

도전 1: 표현의 자유

잭 볼킨 Jack Balkin

http://www.yale.edu/lawweb/jbalkin/

표현의 자유를 규제하는 낡은 방법과 새로운 방법 (Old School/New School Speach Regualtion)

New School Speech Regulation

규제 대상이 언론/방송에서

망, 포털, SNS로 바뀜

New School Speech Regulation

언론/방송의 표현의 자유 = Business Model

망, 포털, **SNS** 표현의 자유: **BM**의 문제 아니다
데이터 요청, 블라인드 처리: 비용 문제일 뿐

New School Speech Regulation
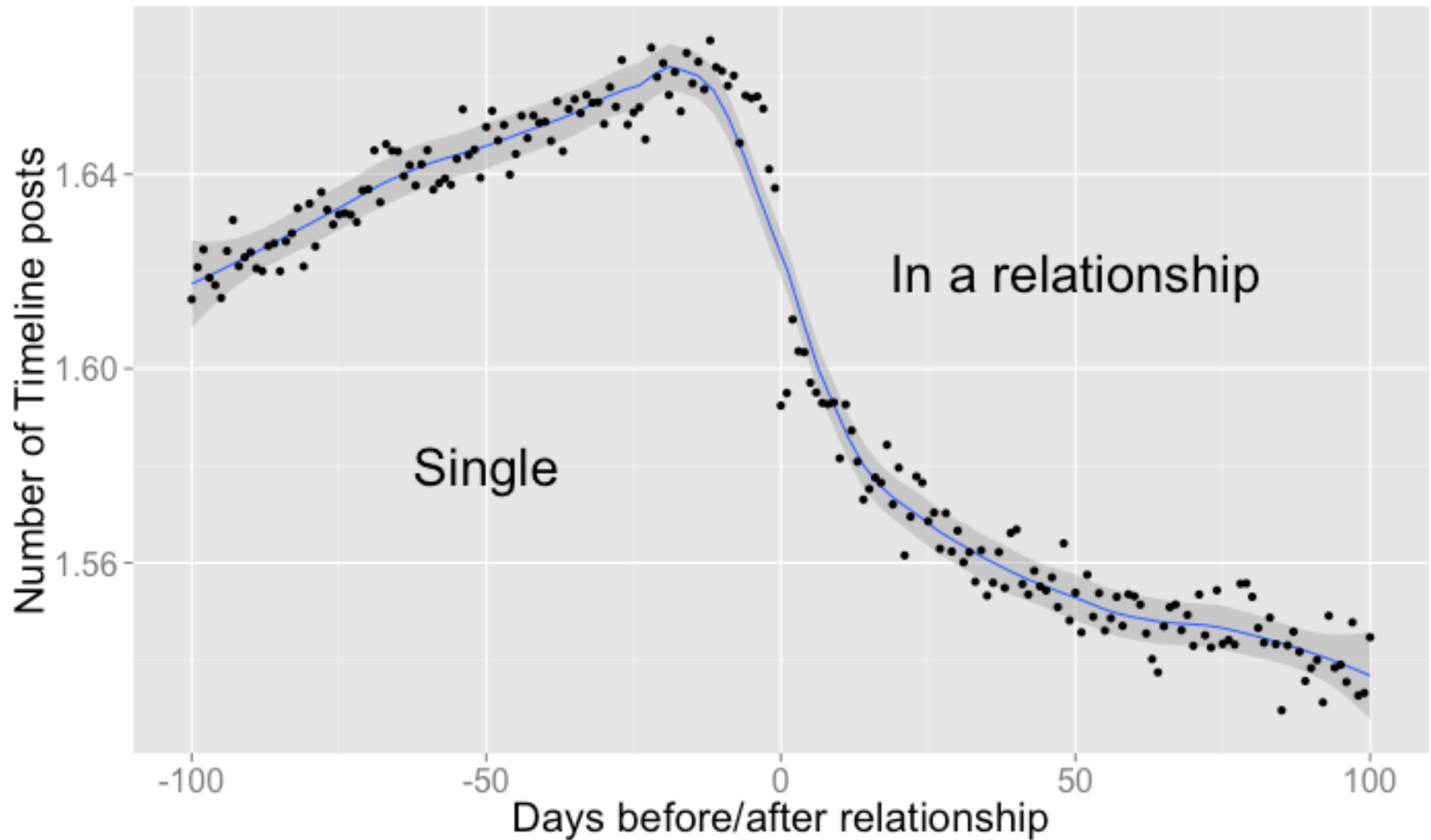
개인/이용자의 표현을 직접 억압하기 보다는

이들의 목소리가 들리지 않게 알고리즘 조정 가능

도전 2: Information Privacy
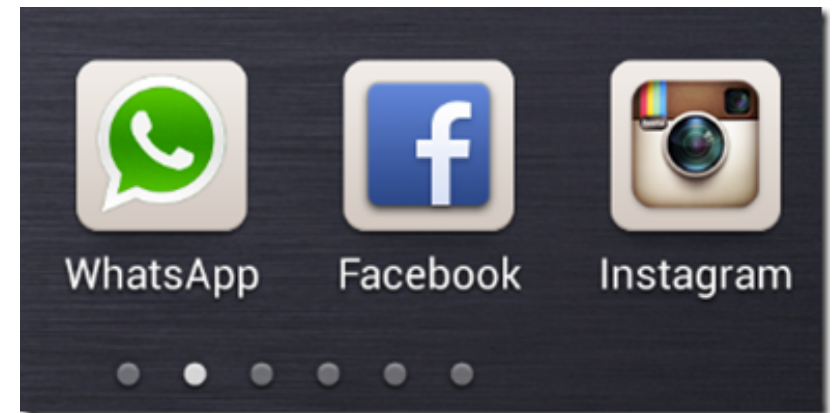
46만 쌍, 1,800만 포스트 분석

두 쌍이 알기 전에
페이스북이 아는 것은 가능할까?
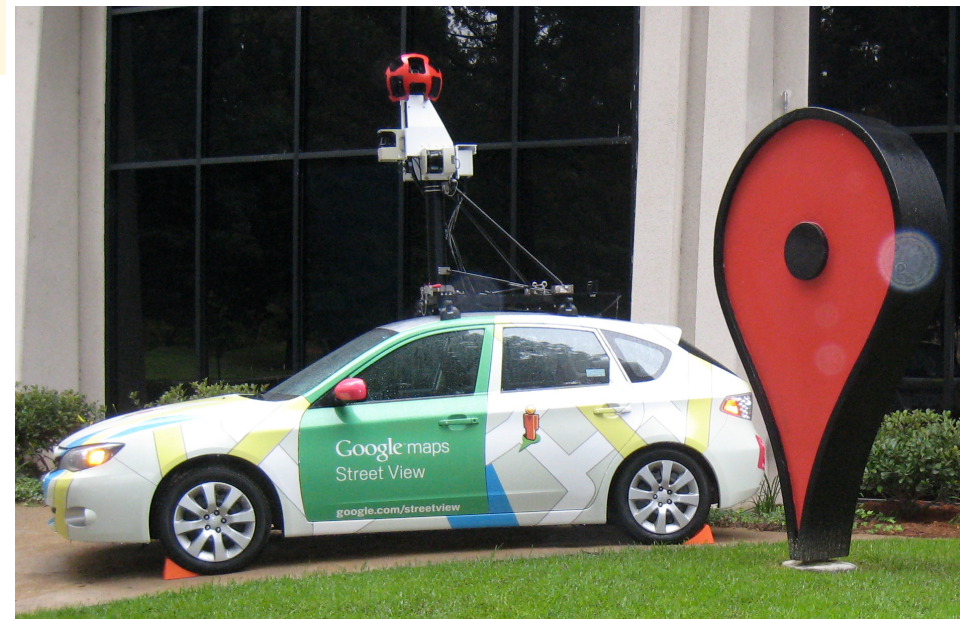
아밋 싱할(Amit Singhal)

"I want my search engine to be the expert who knows me the best.

It needs to know you so well that sometimes you don't need to ask it the next question."
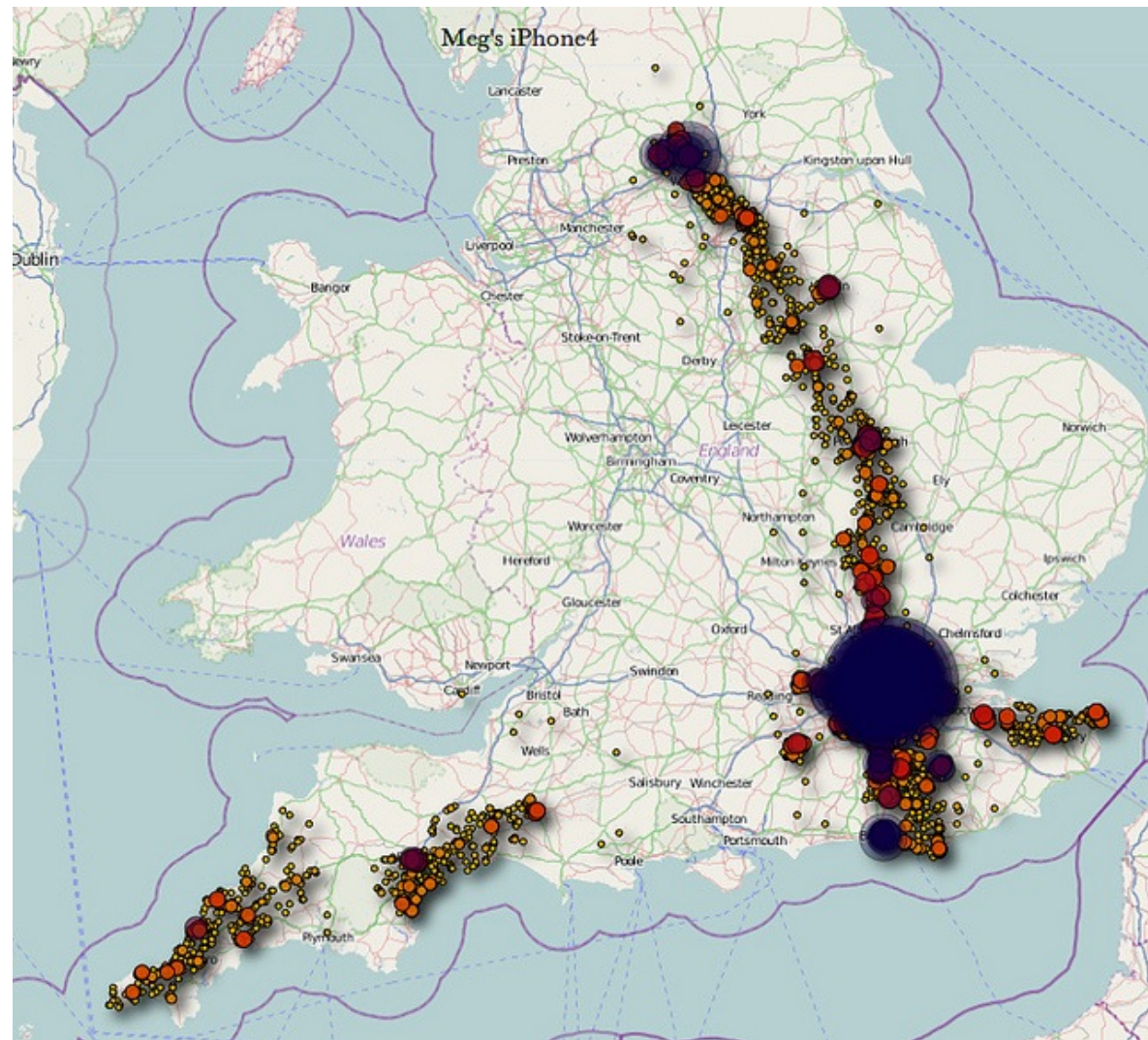
데이터 수집 기술의 진화

데이터 수집 기술의 진화

데이터 수집 기술의 진화

데이터 수집 기술의 진화

anticipatory technologies

예측 기술

United States Patent

Scofield et al.

(10) **Patent No.:** US 8,073,460 B1

(45) **Date of Patent:** Dec. 6, 2011

SYSTEM AND METHOD FOR PROVIDING
ADVERTISEMENT BASED ON MOBILE
DEVICE TRAVEL PATTERNS

Inventors: **Christopher L. Scofield**, Seattle, WA
(US); **Elmore Eugene Pope**,
Sammamish, WA (US); **Brad E.
Marshall**, Bainbridge Island, WA (US);
Eric B. Merritt, Seattle, WA (US)

Assignee: **Amazon Technologies, Inc.** Reno, NV
(US)

6,801,778	B2	10/2004	Koorapaty
6,806,830	B2	10/2004	Panasik
6,903,685	B1	6/2005	Arndt
2002/0002504	A1*	1/2002	Engel et al. 705/26
2002/0050927	A1*	5/2002	De Moerloose et al. 340/539
2002/0077130	A1*	6/2002	Owensby 455/466
2002/0094787	A1	7/2002	Avnet et al.
2002/0111154	A1	8/2002	Eldering et al.
2002/0183059	A1	12/2002	Noreen et al.
2003/0126150	A1	7/2003	Chan
2003/0200128	A1*	10/2003	Doherty 705/8
2004/0044574	A1*	3/2004	Cochran et al. 705/14
2004/0127217	A1	7/2004	Aoki et al.

(Continued)

예측 기술

Amazon files patent for "anticipatory" shipping

WSJ.D ☰ | TECH

Digits Tech News & Analysis From the WSJ

COMPANIES ▾ | MOBILE | PRIVACY | SOCIAL MEDIA

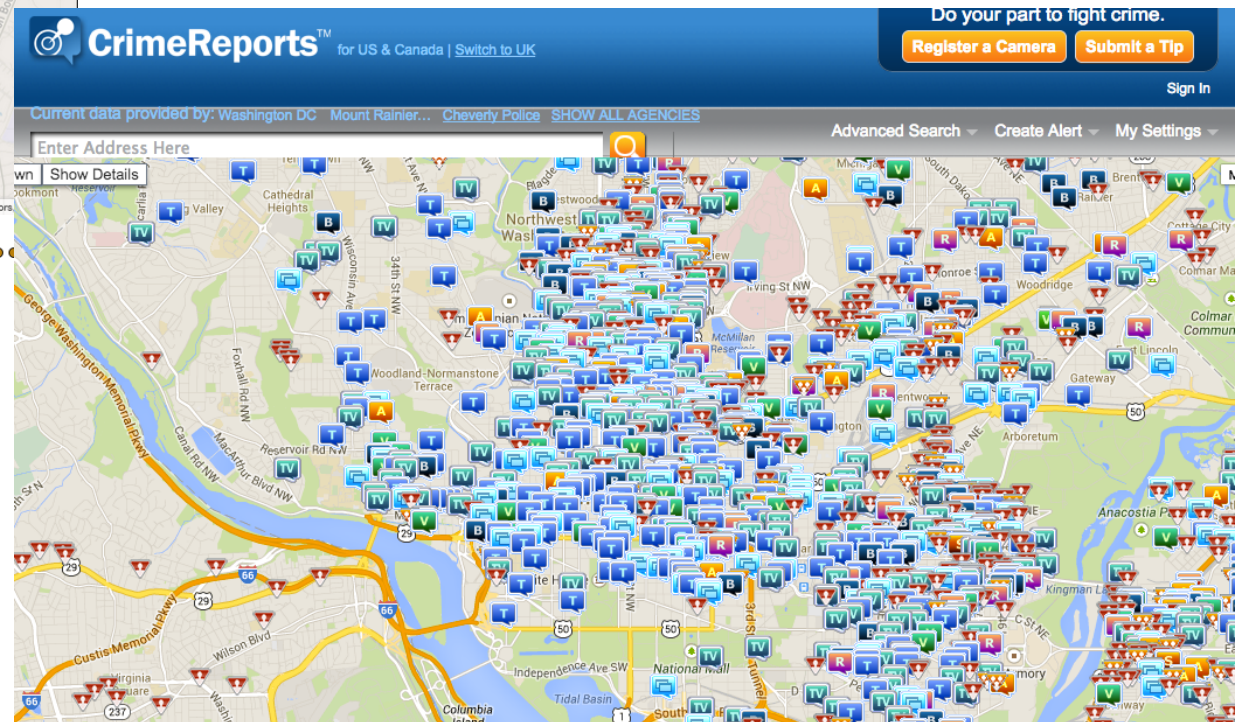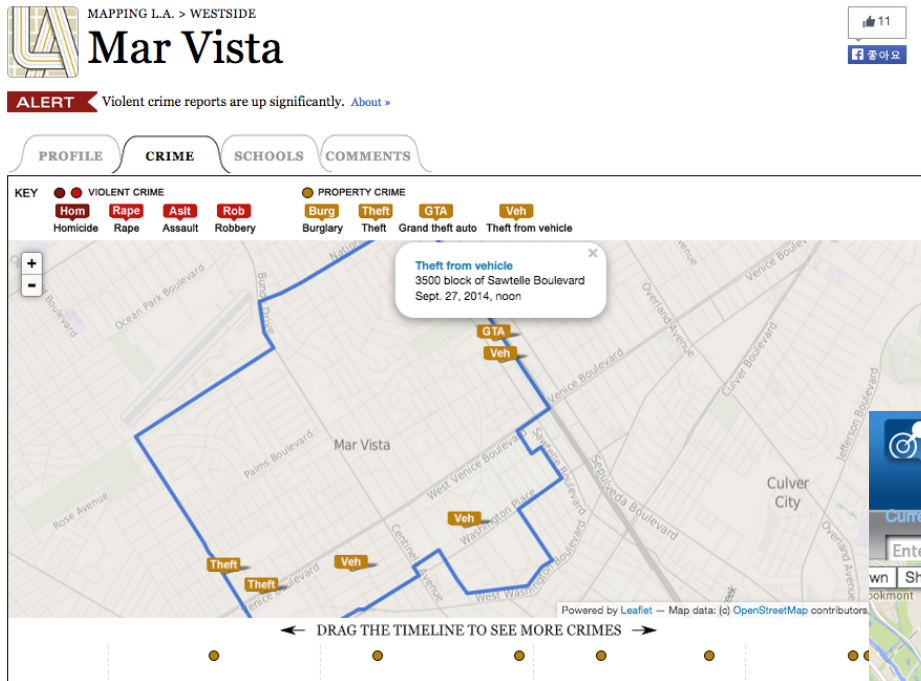HOT TOPICS: PERSONAL TECHNOLOGY VENTURE CAPITAL APPLE GOOGLE ALIBABA B

3:12 pm ET
Jan 17, 2014   AMAZON

Amazon Wants to Ship Your Package Before You Buy It

예측 기술

anticipatory technologies

based on tracking technologies

트랙킹 기술

쿠키

IP 주소
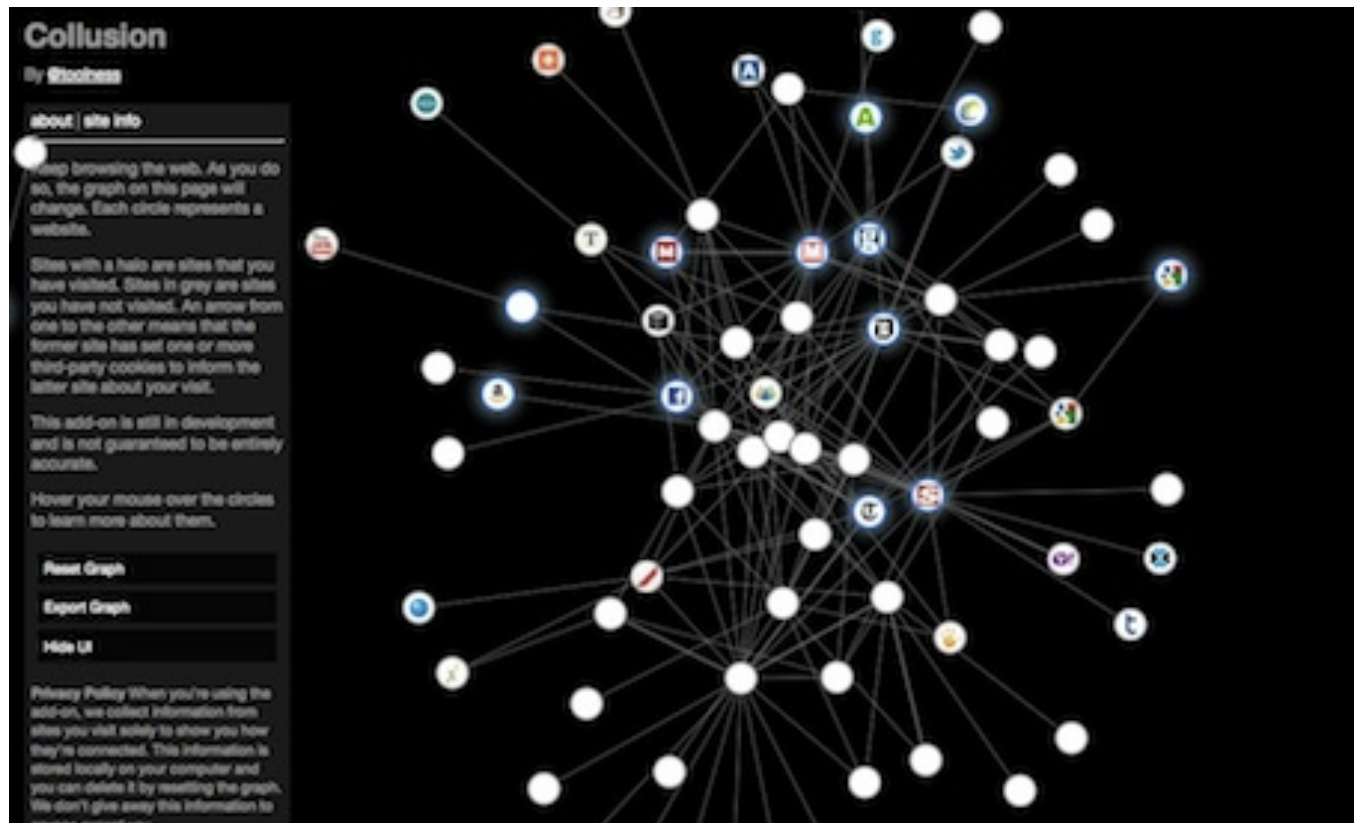
이메일 트랙킹

앱 트랙킹

(초기) 트랙킹 기술 목표

광과 효과 증대

웹사이트 운영 교훈

쿠키 남용 가능성

제3자 쿠키

기업 트래킹/프로파일링의 국가감시 전이

기업에 의해 수집/분석: 이용자 프로파일링

New 국가감시:
이용자 개인에 대한 감시가 아닌,
이용자 프로파일링 데이터 소유한 기업과 협력

PRISM of NSA

Information Privacy

쿠키를 통해 수집된 정보는 개인식별정보인가?

Personally Identifiable Information?

Information Privacy

'개인정보보호법' 한계

Information Privacy

기업단위 데이터 분석의 투명성 확보를 위한

새로운 사회 관리 체계 필요

도전 3: Data Monopoly
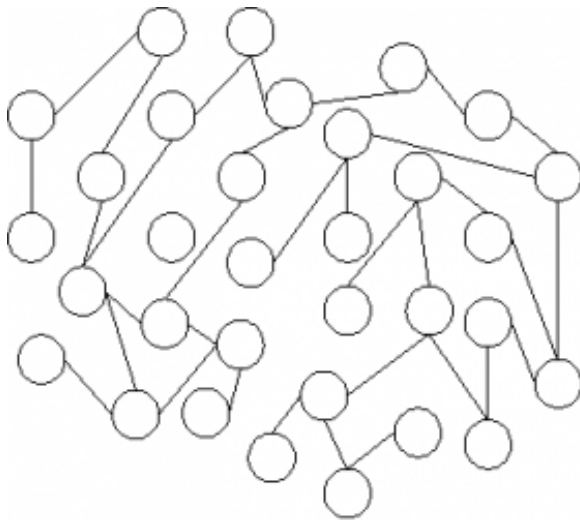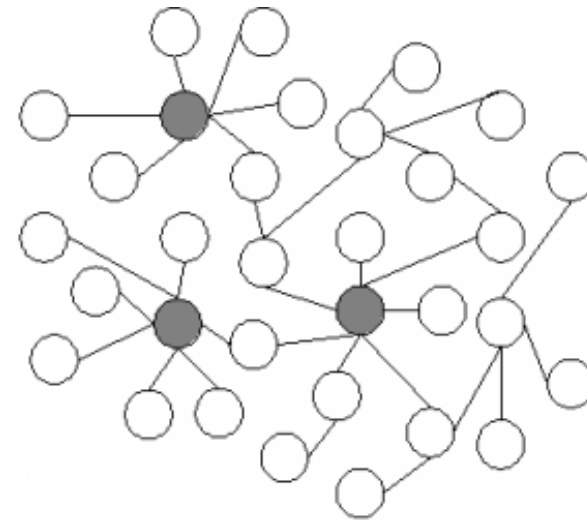
위험성 2: Data Monopoly

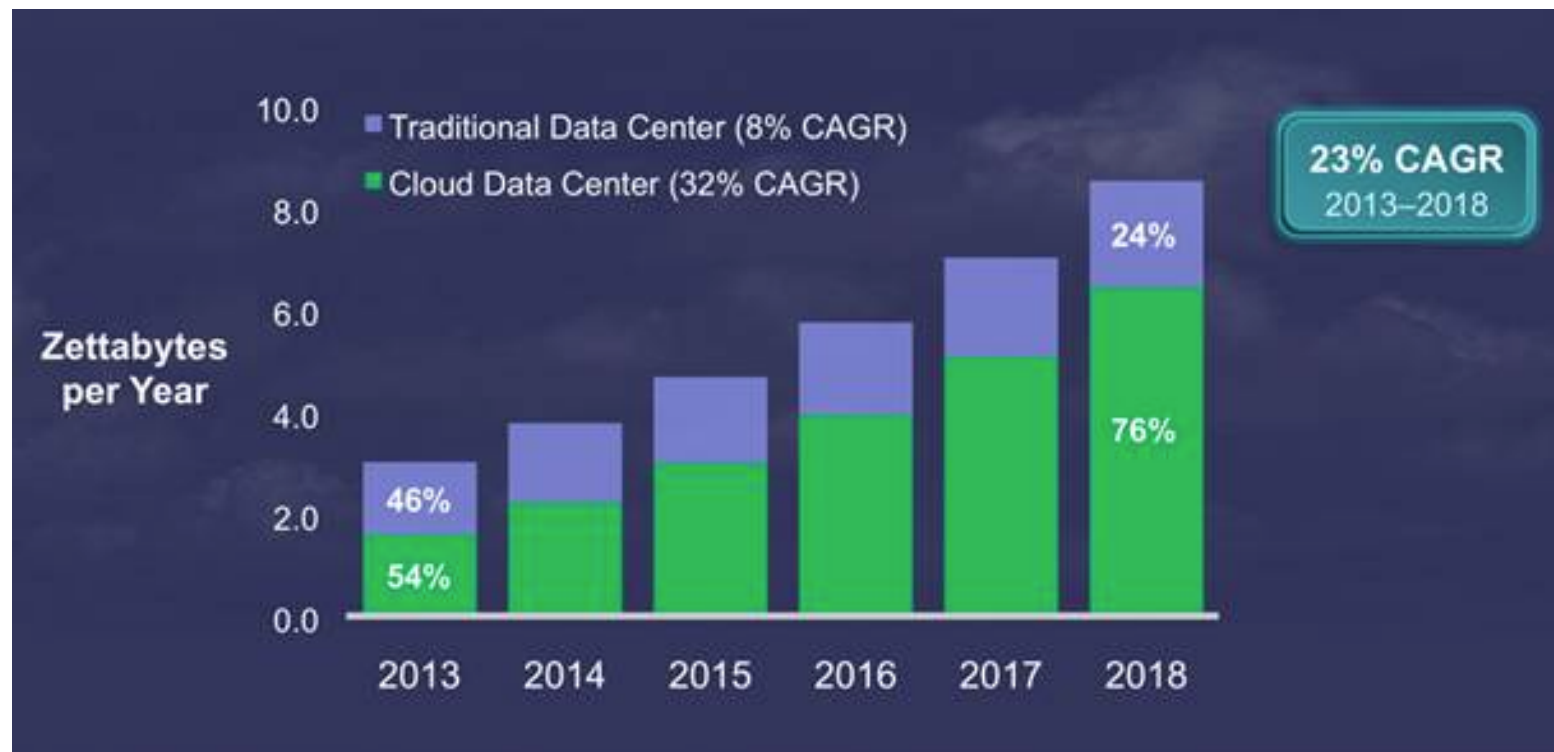## Albert-László Barabási:
A Winner Takes All.

(a) Random network   (b) Scale-free network

Data Monopoly

2013년 아마존 AWS, Cloud 시장 점유율 70%

Car OS based on Cloud

주행 데이터 통제권

IoT Data

데이터 통제권

Uberfication of everything

Software as a Service

Platform Business: Two-Sided Markets

Disruptive Technologies

Filter Control by Algorithms

Google Search Algorithm

Facebook Newsfeed Algorithm

Filter = Access-Control

도전 4: Medicine Data

Clinical Practice Research Datalink

영국 거주민 모두에 대한 의학 데이터 + Mashup

Memorial Sloan-Kettering Cancer Center
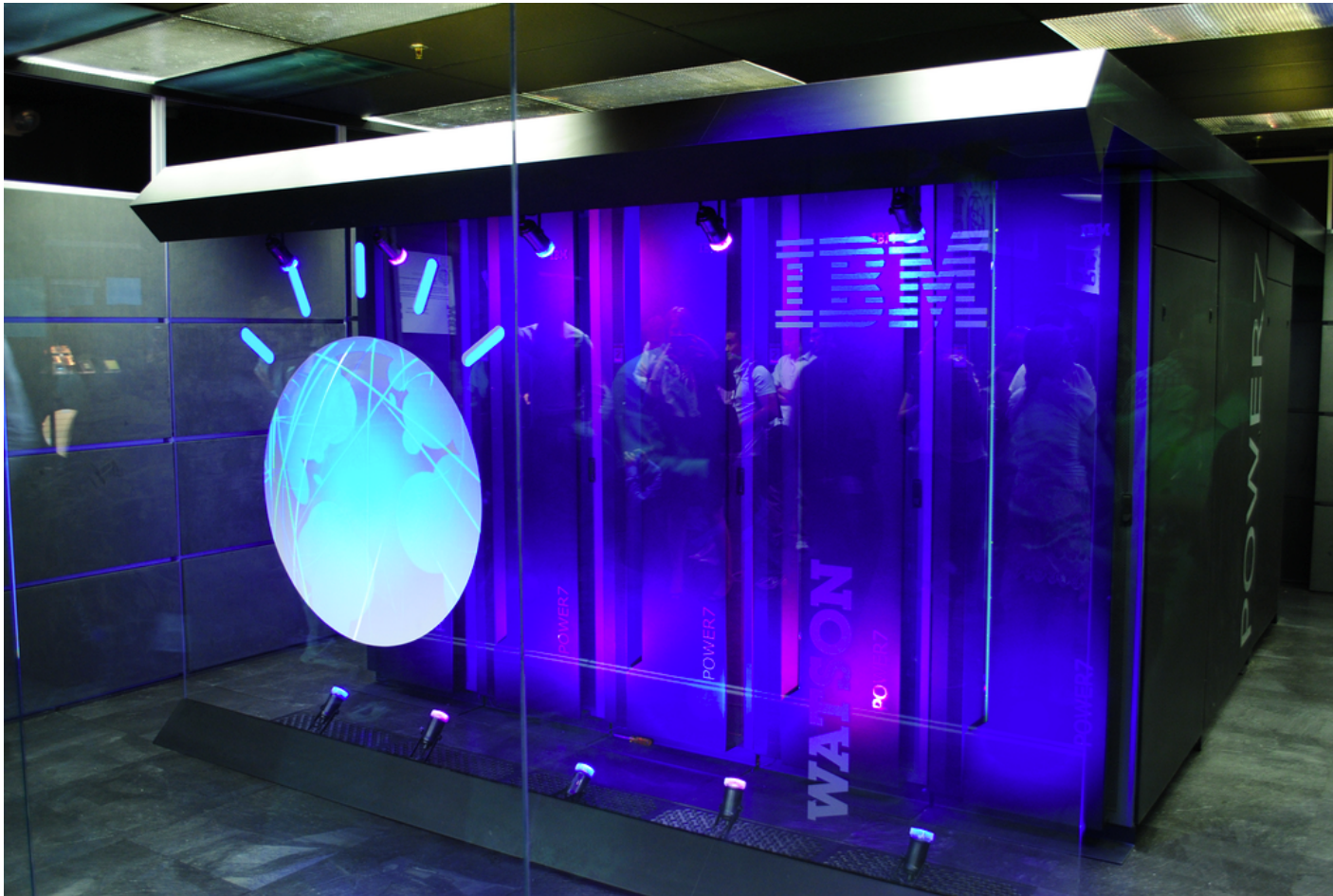
15억 명 암 환자, 암관련 학술연구 데이터 분석

문제점

개인정보 침해

의료 정의

도전 5: Technology Gap

Technology Divides
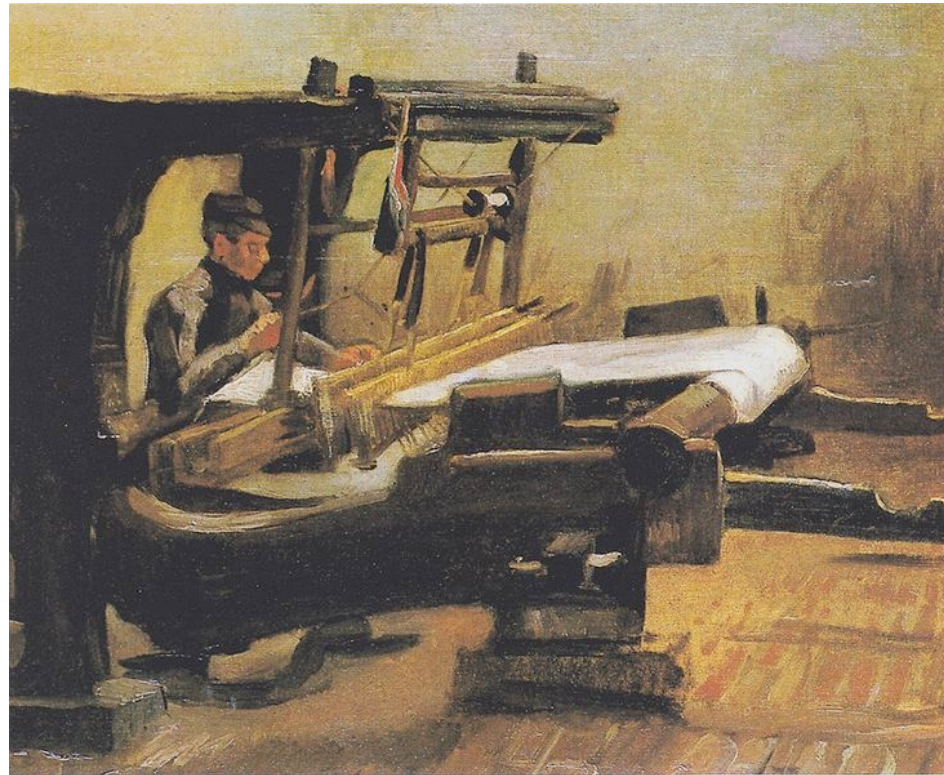
Flying Shuttle (1733)

Technology Divides
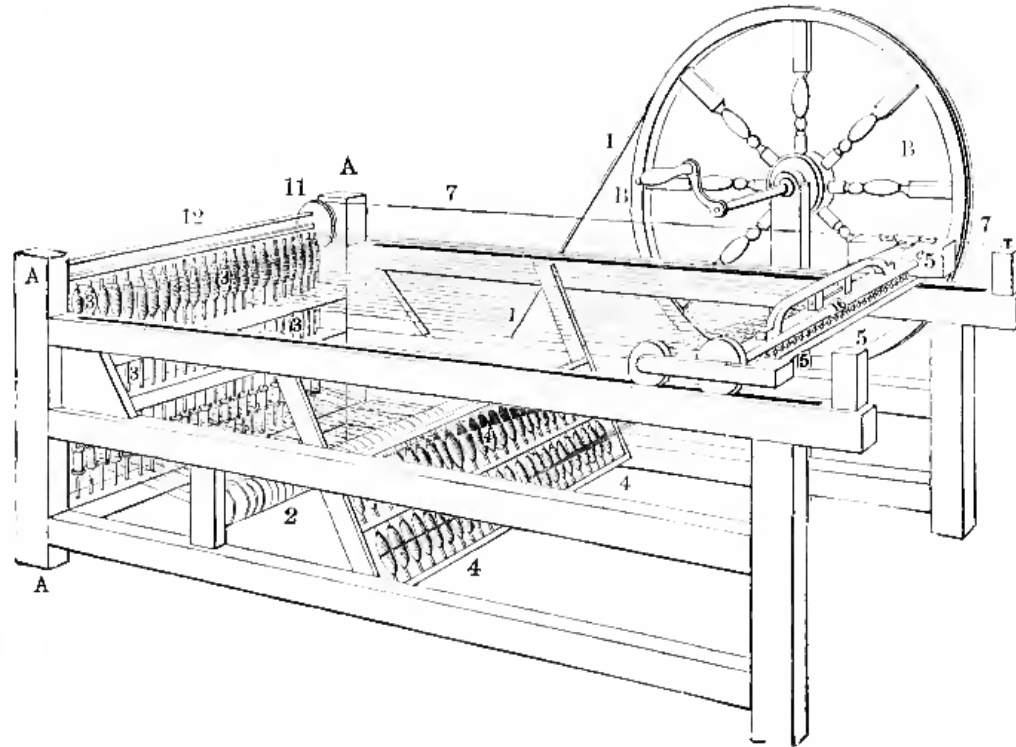
Spinning Jenny (1764)

Technology Divides
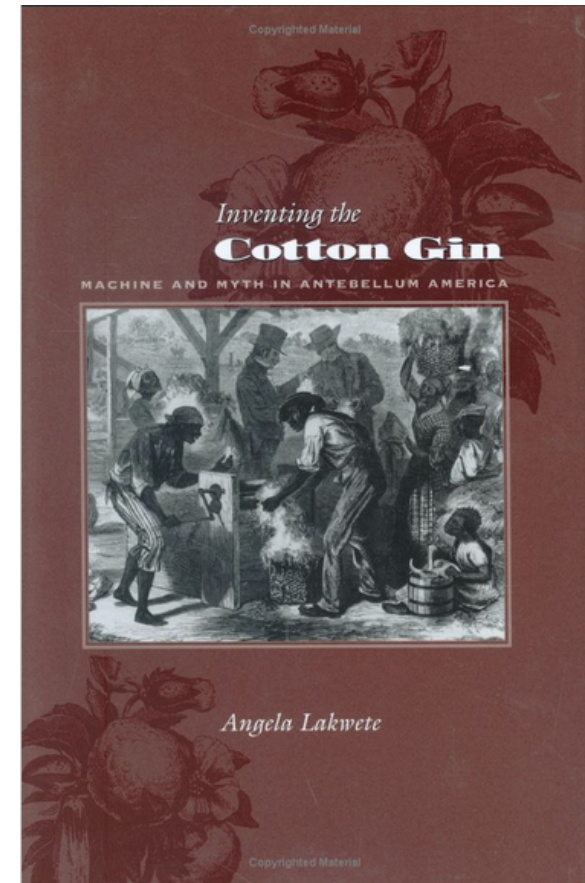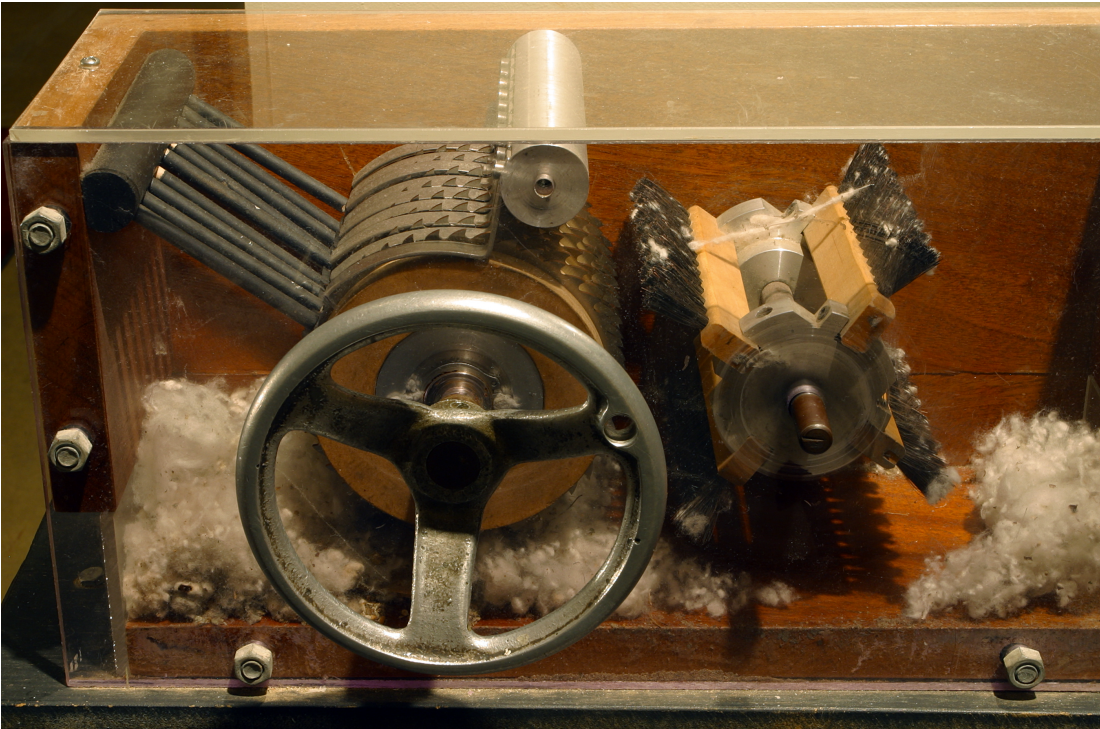
Inventing the Cotton Gin (1796-18309)

Technology Gap

노동질서

소득분배질서

시장경쟁질서

Technology Divides

노동의 재조직화

사회질서 재조직화

국민경제 차이

Silicon Valley's Tech Elite

사건 1

The Winner Of TechCrunch Disrupt SF 2014 Is…Alfred!

Alfred is … a service on the shared economy
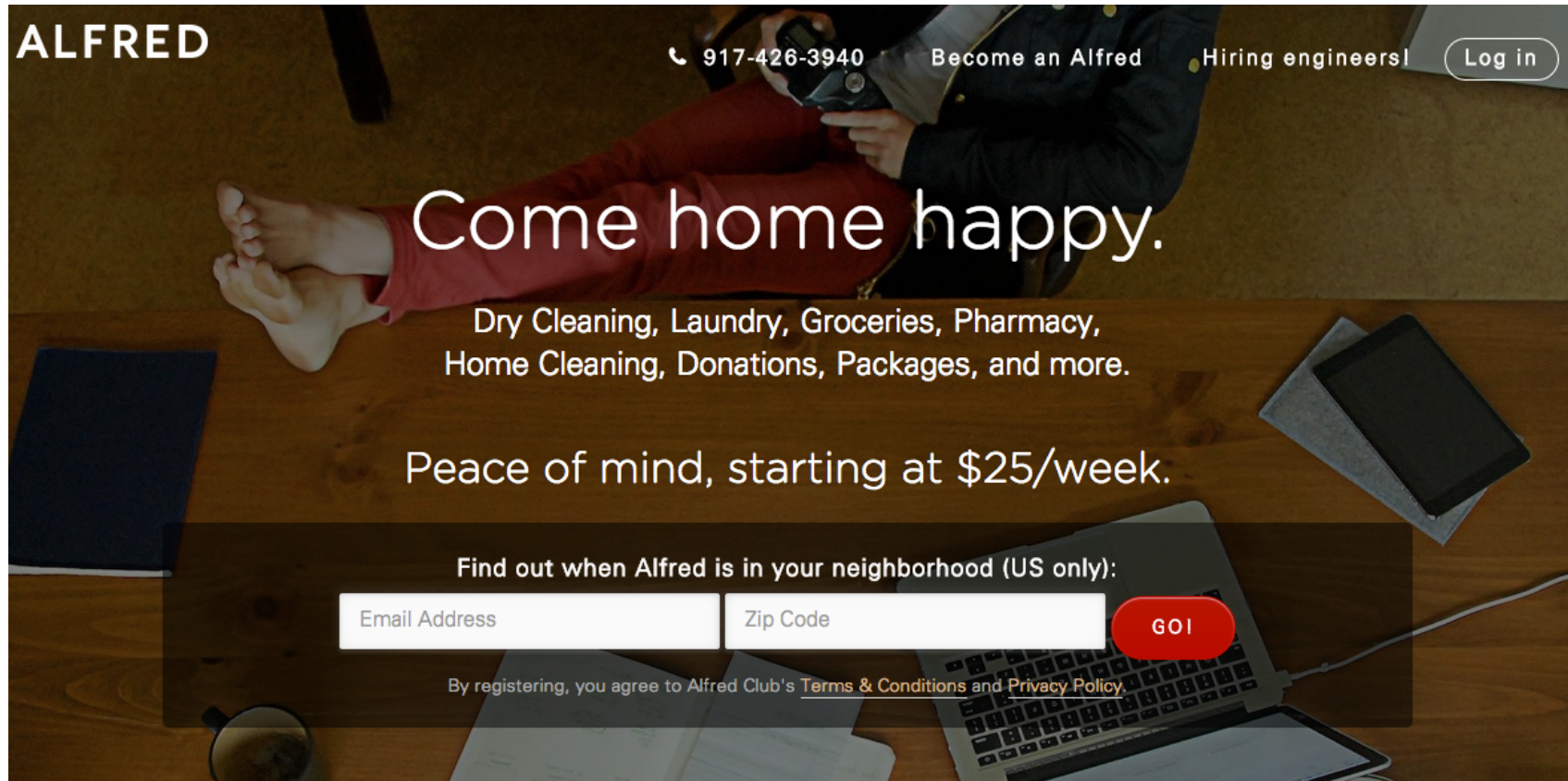
Unlimited Weekly Service

집사(butler) 서비스

보편적 서비스가 아닌 특정 계층위한 서비스

TechCrunch Disrupt

실리콘벨리 방향을 보여주는 행사 중 하나

Alfred:
Silicon Valley's tech elite를 위한 서비스

SF: Sharing Economy 진원지

On-Demand Service = Lazy Tech

Commons vs. Sharing Economy

Commons à la Ostrom

1. collective resources, 2. community/ relationship, 3. commoning

Knowledge Commons such as Wikipedia, Open Source

Commons vs. Sharing Economy

Sharing Economy à la Weitzman

collaborative consumption

On-Demand Service = X as a Service
자원의 동적 활용, 경제 효율성 증대

사건 2

TechCrunch Disrupt 2014 시민저항

배경: 심각한 주택난

Anti-Eviction

유사성: 2013년 12월 구글 통근버스 시위

참조:
"구글 꺼져버려!" 디지털 부르주아지에 대한 분노 (강정수),
http://slownews.kr/17426

On-Demand Service

경제 효율성 증대

우려: 빈부격차 활용한 서비스로 전락할 가능성

Startups, investors race to bring on-demand valet parking app across cities

Aug 1, 2014, 1:52pm PDT

✉ 🐦 in f g+   ★ Save   📰 Order Reprints   🖨 Print

Patrick Hoge
Reporter-
San Francisco Business Times
Email | Google+ | Twitter | LinkedIn

Like a rockstar, you roll up to your destination and hand the keys to a waiting attendant you have summoned with a few swipes on your smartphone; and when you are ready to go, no matter where you are in the city, your vehicle reappears.

That intoxicating vision of on-demand valet parking for the urban masses is a potentially multi-billion dollar opportunity that a pack of Bay Area tech entrepreneurs and venture capitalists is suddenly chasing with great urgency.
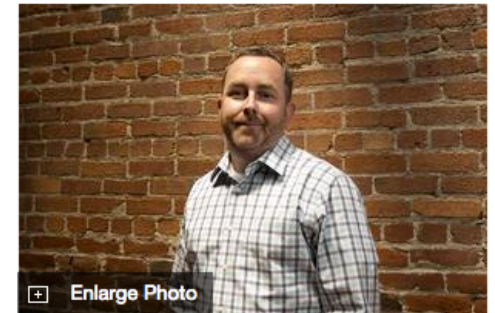
➕ **Enlarge Photo**

Carolyn Seng

Sean Behr, an early executive of the video ad exchange Adap.tv, is co-founder and CEO of Zirx, one of a pack of startups racing to bring smartphone powered on-demand valet parking to the urban masses.

NORTHERN CALIFORNIA's
PREMIER COMMERCIAL REAL

Silicon Valley's tech elite

Wallstreet's bankers

It's A Wonderful Life, For A Few Of Us

Posted Dec 21, 2013 by *Jon Evans* (*@rezendi*), *Columnist*

87   **f Share** 1.6k   **in Share** 76   **Tweet** 826

So where were we? Oh yes: everybody hates us. San Francisco's recent Google-bus and "homeless trash" kerfuffles are symptoms of an increasingly broad, deep, and bitter anti-tech animosity. *The Economist* predicts: "The tech elite will join bankers and oilmen in public demonology." *The New York Times* concurs: "Tech workers have, rightly or wrongly, received the blame. Resentment simmers."

Such ingratitude! What's wrong with these warped, blinded haters?

Silicon Valley's Liberalism

Gated Communities

Peter Thiel & Patri Friedman

Peter Thiel's Dream of a Lawless Utopia Floats On

On Friday, the Seasteading Institute—a non-profit group cofounded by Peter Thiel and Patri Friedman (grandson to Ronald Reagan advisor Milton Friedman)—successfully closed its Indiegogo campaign to design "the world's first floating city" for "pioneers who wish to demonstrate new ways of living together."

Gated Communities

Tim Draper

WIRE

Tim Draper Wants to Break California Into 6 States BY ABIGAIL TRACY @ABIGAILTRACY

The venture capitalist plans to present a initiative to the California Attorney General to break the nation's most populous state into six smaller ones--including a state of Silicon Valley.

159 SHARES
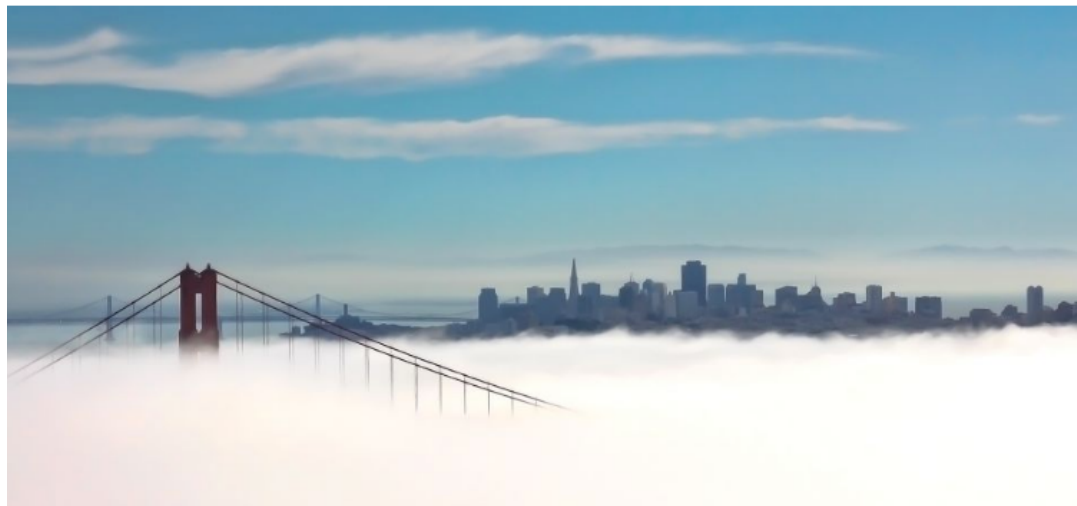
Peter Thiel
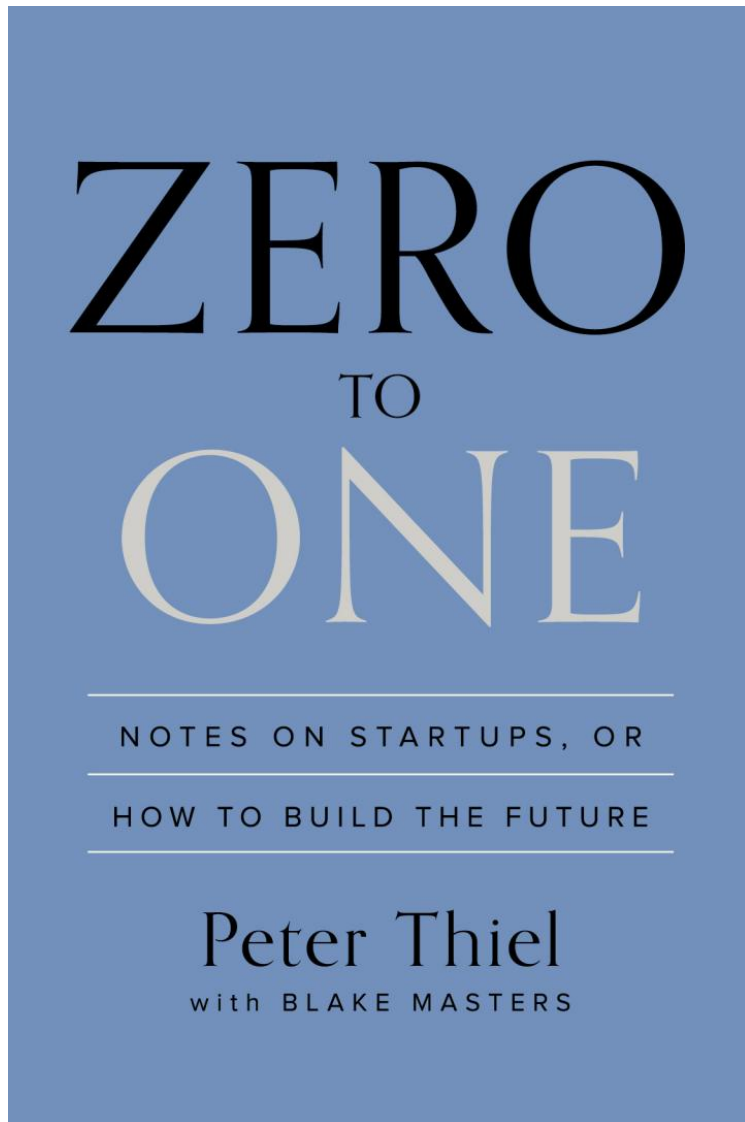
경쟁은 선이고 독점은 악이다?

"disruptive monopoly"

새로운 시장 = 사업자 1

알고리즘 규제 사회

Tim O'Reilly: algorithmic regulation

예측기술 진화 -> 범죄율 급감
-> 공무원 필요성 감소 -> 세금율 인하

디지털 불평등 심화 가능성

디지털 혁신에 따른 사회변동 가능성 확장

디지털 혁신 -> 기술 집중 -> 네트워크 집중 -> 데이터 집중 -> 지식 집중

사회 질서 변동 및 국제 질서 변동

기술 자유주의

불평등에 기초한 경제질서 요구

기술우위에 기초한 사회질서 요구

현 질서와 충돌 심화 -> 이론 정립 동력

규제와 경제 간섭

Regulation

financial regulation, bank regulation

media regulation, medical regulation

trade regulation

시장 실패 market failure

neo-classic

economic interventionism (필요조건)

시장의 자원 배분(allocation) 기능: 문제

시장 실패 현상

정보 비대칭

비경쟁 시장: 독과점 시장

외부효과: 공급자 관점

시장 실패 현상

정보 비대칭

비경쟁 시장: 독과점 시장

외부효과: 공급자 관점

economics of networks

"There is a central difference between the old and new economics: the old industrial economy was driven by economics of scale; the new information economy is driven by economics of networks."

Carl Shapiro & Hal R. Varian, Information Rules, 1998. p. 173

규모의 경제

economies of scale, returns to scale

생산함수

모든 생산요소가 일정량 증가/감소할 때, 생산량의 변화

  positive EoS

  한계비용 체감, 대량생산

cf. 한계생산성(marginal product): '하나'의 생산요소가 일정량 증가/감소할 때, 생산량의 변화

네트워크: 그래프 이론

그래프(graph)는 노드(node)와 두 노드를 연결하는 선(edge/link)으로 구성

Degree: 하나의 노드와 연결된 선(edge)의 수 ➔ 상호작용
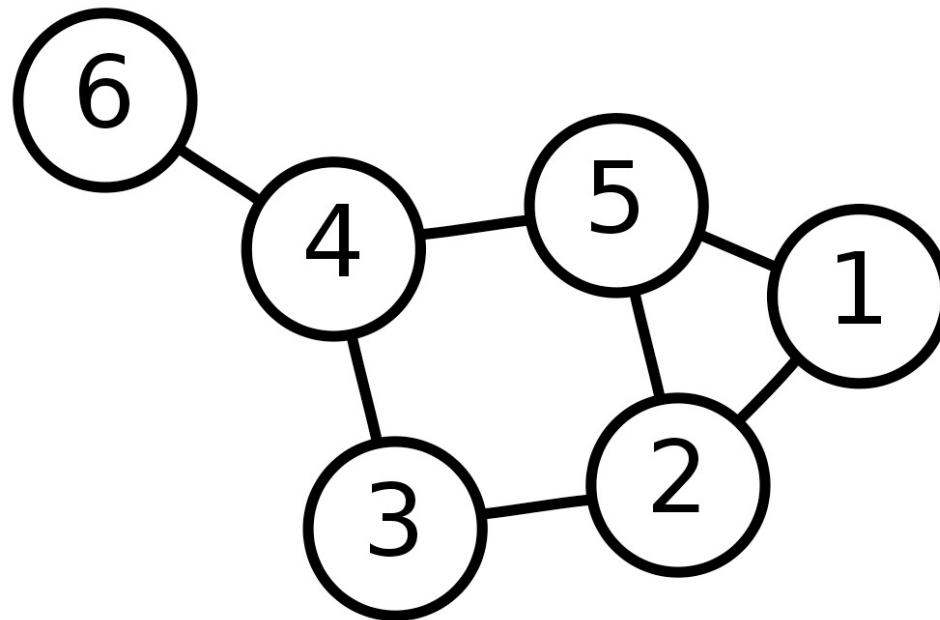
메칼프의 법칙

Metcalfe's law, 커뮤니케이션 시스템 효용 측정

효용성 또는 네트워크 가치는 사용자 수의 제곱에 비례한다.
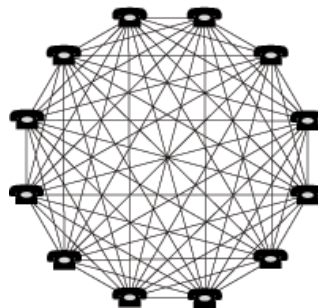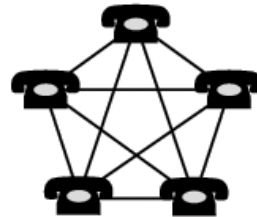
네트워크 효과

직접 네트워크 효과와 간접 네트워크 효과

긍정 외부 효과 (positive externality), 메칼프의 법칙

효용(utility)이 소비자/사용자 수의 증가에 따라 함께 증가

문제점 동시에 네트워크 효과의 힘: 경로의존성

　　path dependence

　　소비자/사용자가 하나의 결정을 내릴 때, 그가 과거에 내린 결정 또는 결정을 내린 환경에 영향을 받게되는 경우

잠금효과, 교체비용

Lock-in effect, Switching Costs

높은 교체 비용으로 인해 현재 상황 변화가 비경제적인 경우

Collective switching costs are far higher than all individual switching costs because of the coordination hurdle.

stickiness

how to increase lock-in?

직접 네트워크 효과

한 소비자 집단에 속한 소비자 수가 증가할 수록 '동일' 소비자 집단 소비자의 관련 효용이 증가하는 경우

간접 네트워크 효과

두 개 이상의 서로 다른 소비자 집단 존재

한 소비자 집단에 속한 소비자 수가 증가할 수록 '다른' 소비자 집단 소비자의 관련 효용이 증가하는 경우

양측시장

two-sided markets

간접 네트워크 효과 존재

두개 이상의 서로 다른 소비자 집단을 연결하는 플랫폼 존재: role of intermediation

single homing, multi homing

통신시장, 방송시장, 언론시장, facebook, app economy 등

구글 규제 타당성

to break up Google

The European Parliament just endorsed the breakup of Google

Updated by Timothy B. Lee on November 27, 2014, 11:57 a.m. ET ✉ tim@vox.com

TWEET (236) | **SHARE (659)** | +

PATRICK HERTZOG/AFP/Getty Images

DON'T MISS STORIES. FOLLOW VOX!

1. The European Parliament has endorsed separating Google's search engine from its other activities.

2. The non-binding resolution passed by a vote of 384 to 174.

3. However, the European Parliament doesn't have the power to directly break up companies, and one legal scholar tells me that Google is in no danger of actually being broken up.

4. The same resolution also called for protecting network neutrality.

Most R...

1. ISIS is lo...

2. John Legend: more b... correctional control... enslaved i...

3. Watch John Legend... heartbreaking Oscar... Selma's "...

4. Obama Derangeme...

5. Here's why Birdman... win the Best Picture O... did...

Get Vox in yo...

email address

By signing up, you ag...

POLICY

European Legislator Urging the Breakup of Google Has Ties to a Law Firm

By DANNY HAKIM   NOVEMBER 26, 2014 5:00 AM

Andreas Schwab is a German member of the center-right European People's Party. Geert Vanden Wijngaert/Associated Press

✉ Email

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🐦 Tweet

📁 Save

➤ More

Andreas Schwab, a German member of the European Parliament, has been making headlines in the last week after drafting a resolution that calls for the breakup of Google.

But Mr. Schwab is not just a legislator, he is also "of counsel" at the German law firm CMS Hasche Sigle, which has represented some of the German publishing interests that have been most eager to declaw Google. He earns roughly $15,000 to $75,000 annually from the firm, according to a disclosure filing. The firm's website lists his expertise as competition policy.

79

반대 근거 by 강정수

1) mobile: 구글 광고 매출 감소, 페이스북 강화

2) Mobile Messenger Networking Service

3) Firefox, DuckDuckGo

반대 근거 by 강정수

4) Microsoft is Back!

5) Self-driving Cars: not mass market product
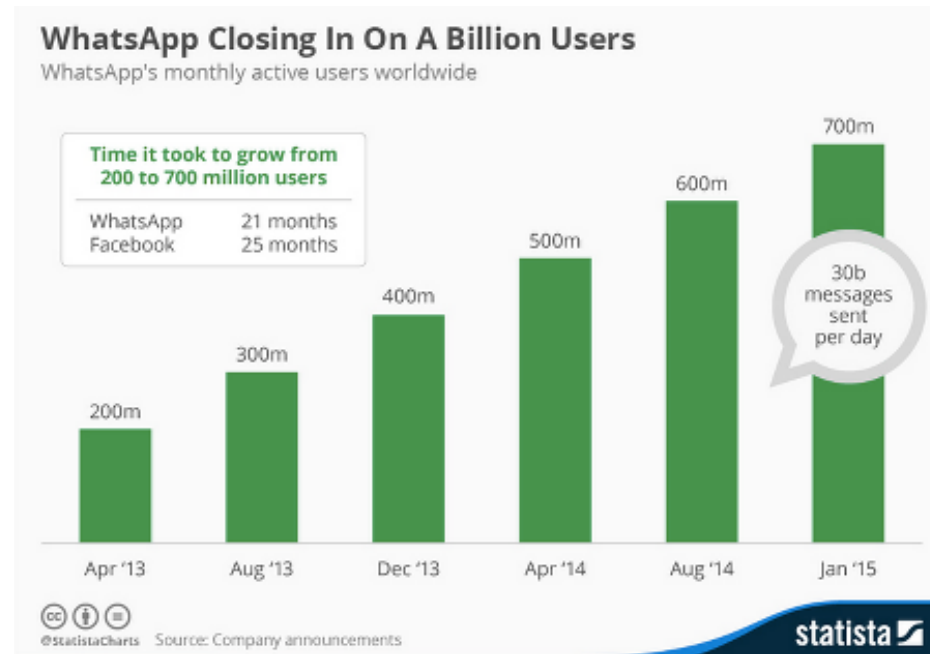
6) YouTube vs. Facebook

디지털 경제 기능 제약 요인

lockin effect

network effect

페이스북의 WhatsApp 인수?

Facebook & WhatsApp

WhatsApp Closing In On A Billion Users
WhatsApp's monthly active users worldwide

Time it took to grow from
200 to 700 million users

WhatsApp   21 months
Facebook   25 months

700m

600m

500m

400m

300m

30b
messages
sent
per day

200m

Apr '13   Aug '13   Dec '13   Apr '14   Aug '14   Jan '15

@StatistaCharts   Source: Company announcements

statista

consumer-oriented networking companies

for users: no other choice

Facebook & WhatsApp

data-concentration

competition restriction: "sugar daddy"

forward-looking regulation!