## For or Against?

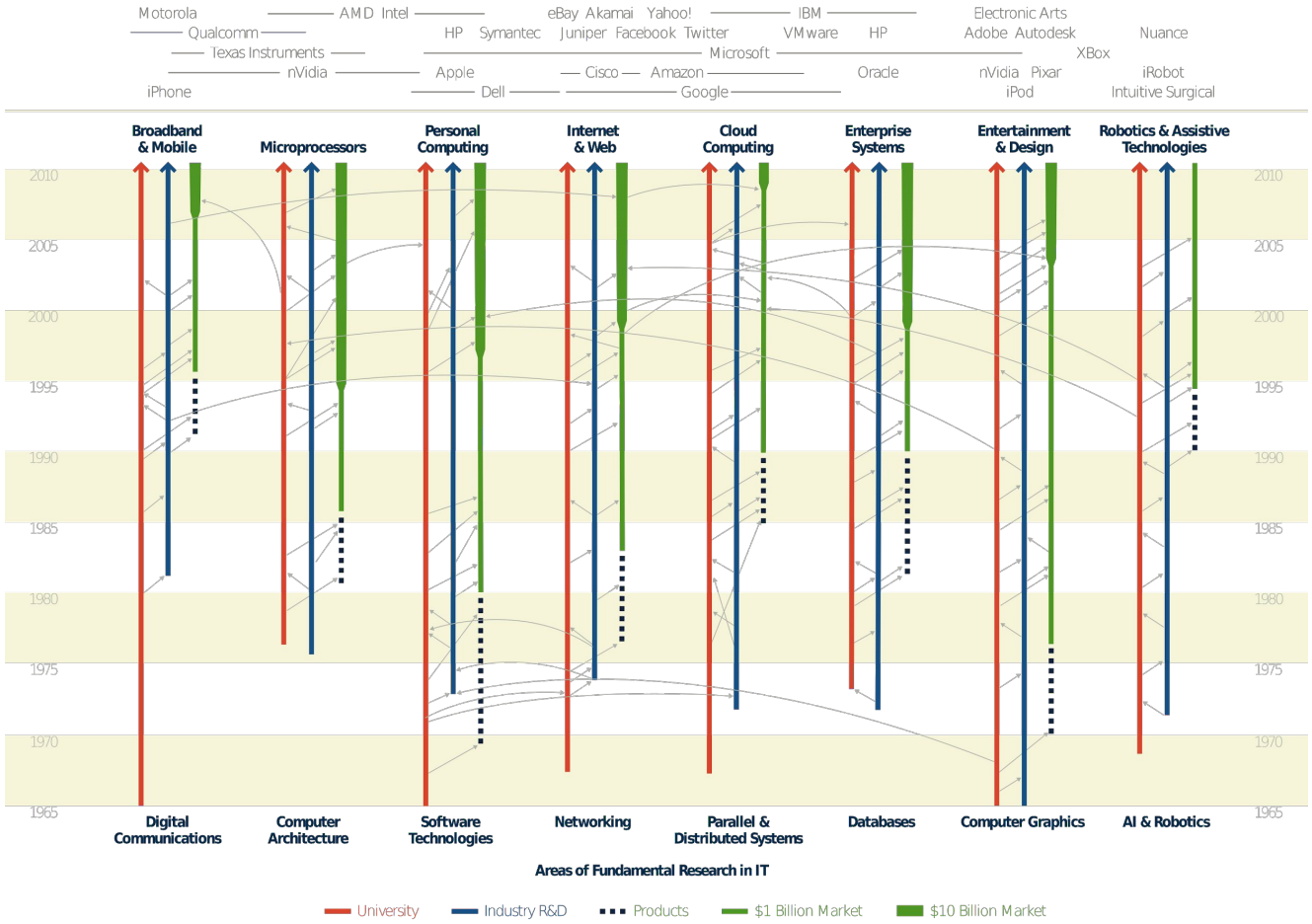
"Tech transfer of privacy research is doomed to fail."

# Past visions of the present...

"Tech transfer" of *research* on computing/communications technology has been **extraordinarily** successful… in due time.

- **Web:** Memex (MIT), NLS (SRI), Hypercard (Apple), Gopher (Minn.), WWW (CERN)
- **Web browser:** [U. Illinois → Firefox & Internet Explorer], [KDE → Safari & Chrome]
- **Public-key cryptography:** Stanford + MIT → RSA, TLS, HTTPS, Bitcoin
- **TCP/IP:** U.C. Berkeley, USC, UCLA, Stanford
- **Practical PC virtualization:** Stanford → VMware, Xen, AWS EC2
- **GNU/Linux and open-source software:** University of Helsinki, MIT, U.C. Berkeley

# IT Sectors With Large Economic Impact



## *Q*: Is privacy research different?

- "Tech transfer" of *research* on computing/communications technology has been **extraordinarily** successful… in due time.
- … even sometimes when it goes against commercial interests.
- Is *privacy* research uniquely prone to being ignored or co-opted?

# Possible reasons why privacy research might be uniquely disfavored

- Privacy breaches are like earthquakes—people are disinclined to pay a penalty now for prevention over long term.
- The difference between real privacy and fake privacy is too technical for customers to understand, so companies can pay merely lip service to privacy without consequence.
- Nobody knows how valuable machine learning will be in the future, and what data it will depend on—so playing it safe means collect all the things!!!1
- Exposure is just too valuable for consumers to be able to give up without the alternative being worse.

POLLY SPRENGER SECURITY 01.26.99 12:00 PM

# SUN ON PRIVACY: 'GET OVER IT'

THE CHIEF EXECUTIVE officer of Sun Microsystems said Monday that consumer privacy issues are a "red herring."

"You have zero privacy anyway," Scott McNealy told a group of reporters and analysts Monday night at an event to launch his company's new Jini technology.

"Get over it."

McNealy's comments came only hours after competitor Intel (INTC) reversed course under pressure and disabled identification features in its forthcoming Pentium III chip.

Jodie Bernstein, director of the Bureau of Consumer Protection at the Federal Trade Commission, said that McNealy's remarks were out of line.

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# NSA has massive database of Americans' phone calls

Updated 5/11/2006 10:38 AM ET



Enlarge By Roger Wollenberg, Getty Images

Gen. Michael Hayden, nominated by President Bush to become the director of the CIA, headed the NSA from March 1999 to April 2005. In that post, Hayden would have overseen the agency's domestic phone record collection program.

**REACTION**

**By Leslie Cauley, USA TODAY**

The National Security Agency has been secretly collecting the phone call records of tens of millions of Americans, using data provided by AT&T, Verizon and BellSouth, people with direct knowledge of the arrangement told USA TODAY.

The NSA program reaches into homes and businesses across the nation by amassing information about the calls of ordinary Americans — most of whom aren't suspected of any crime. This program does not involve the NSA listening to or recording conversations. But the spy agency is using the data to analyze calling patterns in an effort to detect terrorist activity, sources said in separate interviews.

**QUESTIONS AND ANSWERS:** The NSA record collection program

"It's the largest database ever assembled in the world," said one person, who, like the others who agreed to talk about the NSA's activities, declined to be identified by name or affiliation. The agency's goal is "to create a database of every call ever made" within the nation's borders, this person added.

# What might cause privacy research to face fewer headwinds?

1. Consumers begin to regard their privacy as more important.

2. Companies begin to regard privacy technology as more important.

3. Everybody realizes that consumer data is just **not that valuable.** The “strong financial incentive” is illusory.

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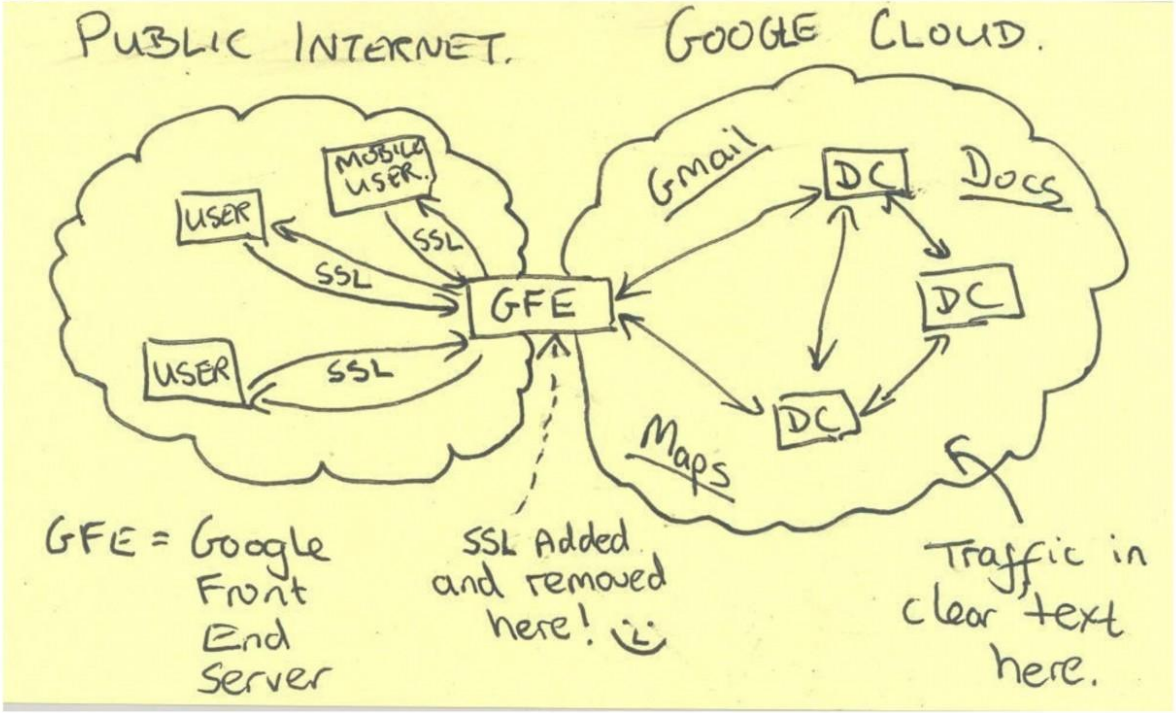
# Current Efforts - Google



# *Apple Encryption Engineers, if Ordered to Unlock iPhone, Might Resist*

By John Markoff, Katie Benner and Brian X. Chen

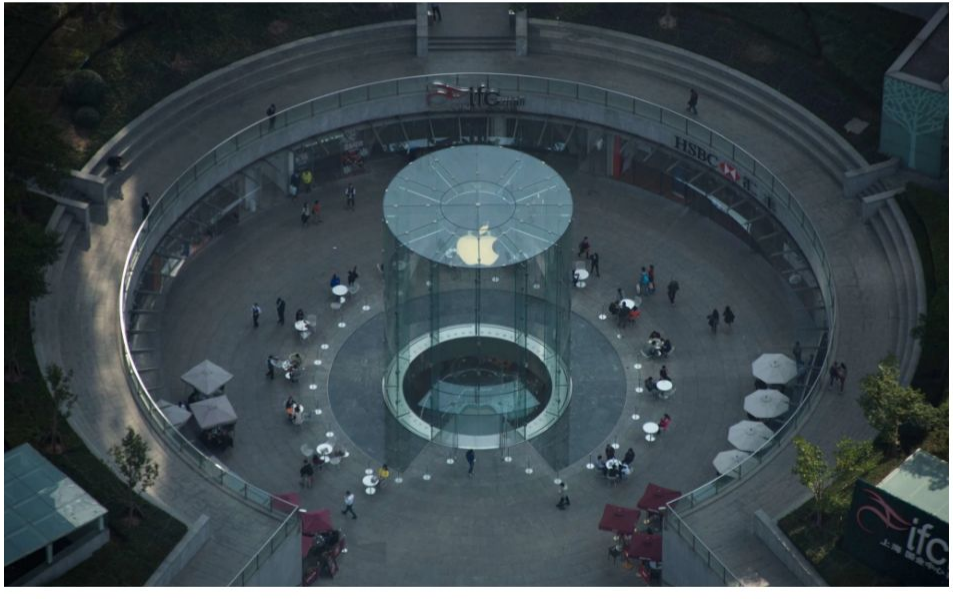
March 17, 2016

425

SAN FRANCISCO — If the F.B.I. wins its court fight to force Apple's help in unlocking an iPhone, the agency may run into yet another roadblock: Apple's engineers.

Apple employees are already discussing what they will do if ordered to help law enforcement authorities. Some say they may balk at the work, while others may even quit their high-paying jobs rather than undermine the security of the software they have already created, according to more than a half-dozen current and former Apple employees.

# *Justice Department Calls Apple's Refusal to Unlock iPhone a 'Marketing Strategy'*



An Apple store in Shanghai. Prosecutors said that Apple's refusal to help unlock an iPhone "appears to be based on its concern for its business model." Johannes Eisele/Agence France-Presse — Getty Images

**By Eric Lichtblau and Matt Apuzzo**

**The New York Times**
@nytimes

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Apple is said to be working on an iPhone even it can't hack nyti.ms/1QFxv80


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# Apple products are designed to do amazing things. And designed to protect your privacy.

At Apple, we believe privacy is a fundamental human right.

And so much of your personal information — information you have a right to keep private — lives on your Apple devices.

Your heart rate after a run. Which news stories you read first. Where you bought your last coffee. What websites you visit. Who you call, email, or message.

Every Apple product is designed from the ground up to protect that information. And to empower you to choose what you share and with whom.

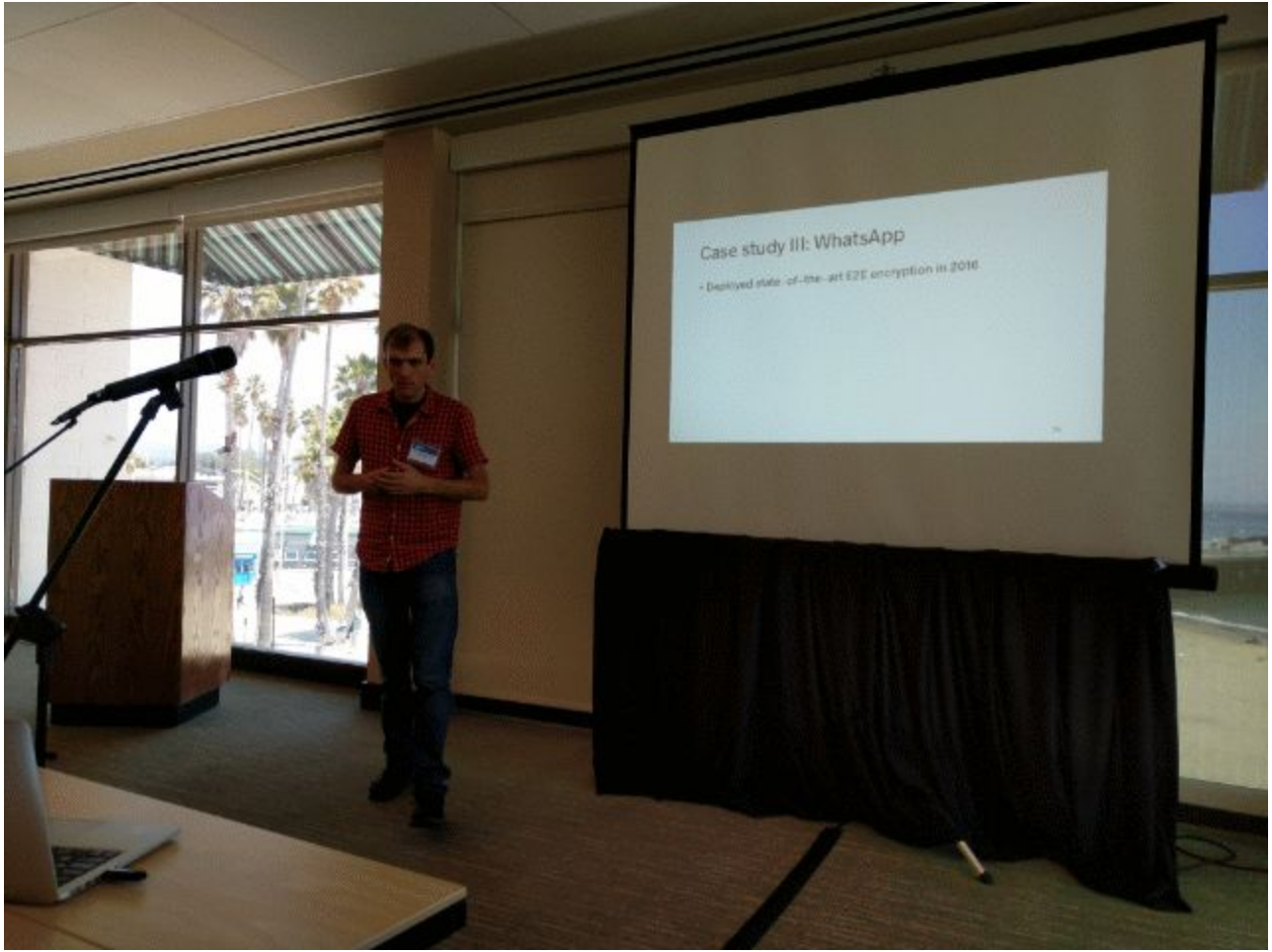
We've proved time and again that great experiences don't have to come at the expense of your privacy and security. Instead, they can support them.

# 5 Easy Ways to Protect Your Digital Privacy in 2018

You can lessen your chances of falling victim to the next data breach

By Allen St. John
January 17, 2018

# Increasing pressure on companies...


Case study III: WhatsApp
• Deployed state-of-the-art E2E encryption in 2016

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(EU privacy rules)

# Trends led by people “in this room”

1. Using a personal computer
2. Using the Internet
3. Using the World Wide Web
4. Using a portable handheld connected computer

# Trends led by people “in this room”

1. Using a personal computer
2. Using the Internet
3. Using the World Wide Web
4. Using a portable handheld connected computer
5. **Ignoring/blocking/not buying things because of ads**

# Tech transfer of privacy research is not doomed to fail.

- Tech transfer **in general** of computer science research has been **extraordinarily** successful.
- No strong reason to think privacy is that different.
- Current practice of "overcollecting" is led by:
  - **overoptimism** and conservatism about future machine learning, therefore **collect all the things!!!1**
  - **overoptimism** (or a bubble) in the efficacy of data-driven advertising
- ***This too shall pass.***
- Meanwhile, there are reasonable commercial and consumer pressures (breaches suck!) that will lead privacy research to see similar uptake as other fields of computer security and systems.