



Privacy, Online Advertising and Cloud Services

SafeGov.org

February 2013

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Ad Targeting Business Model

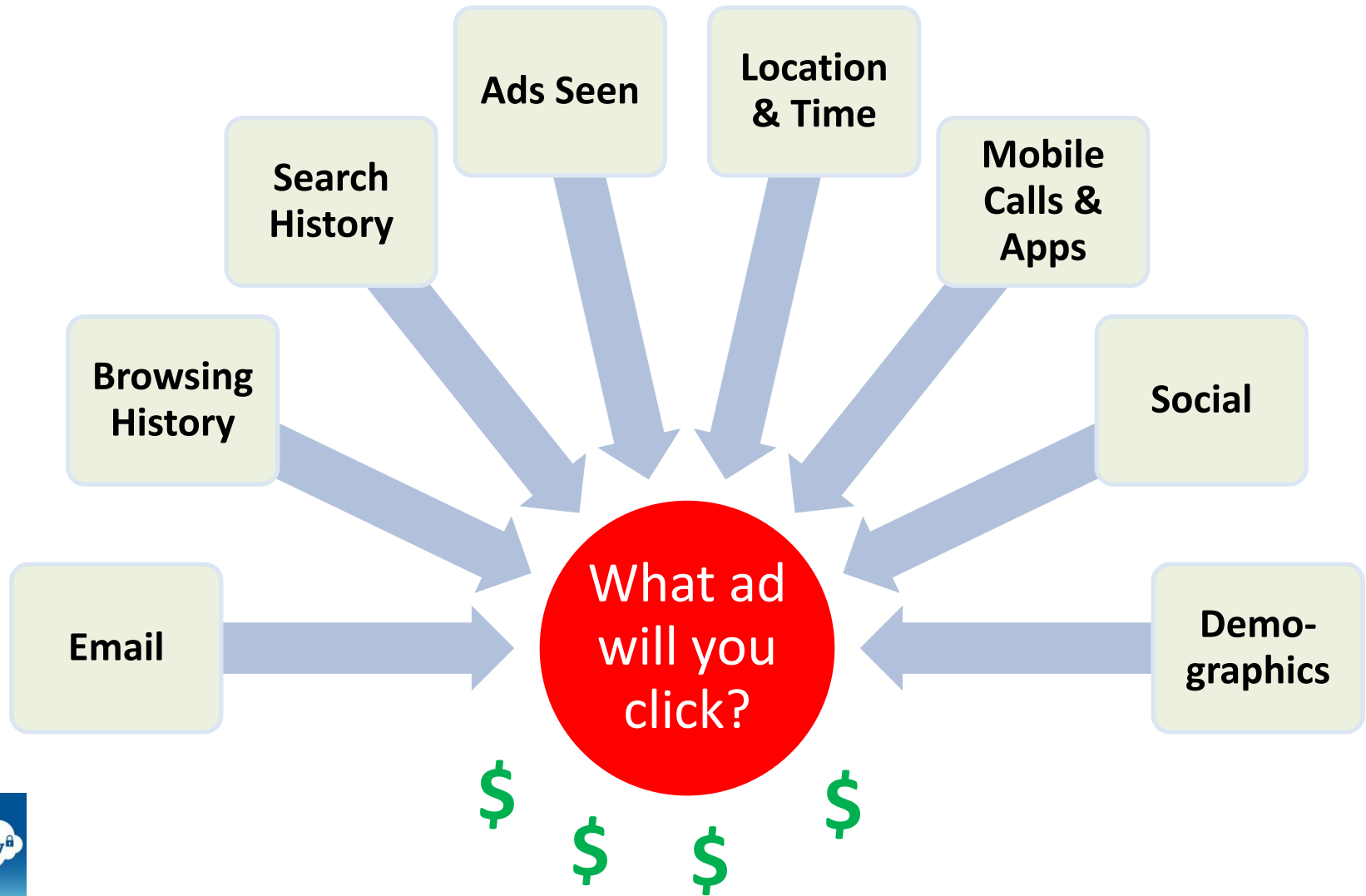


We give you
a free service

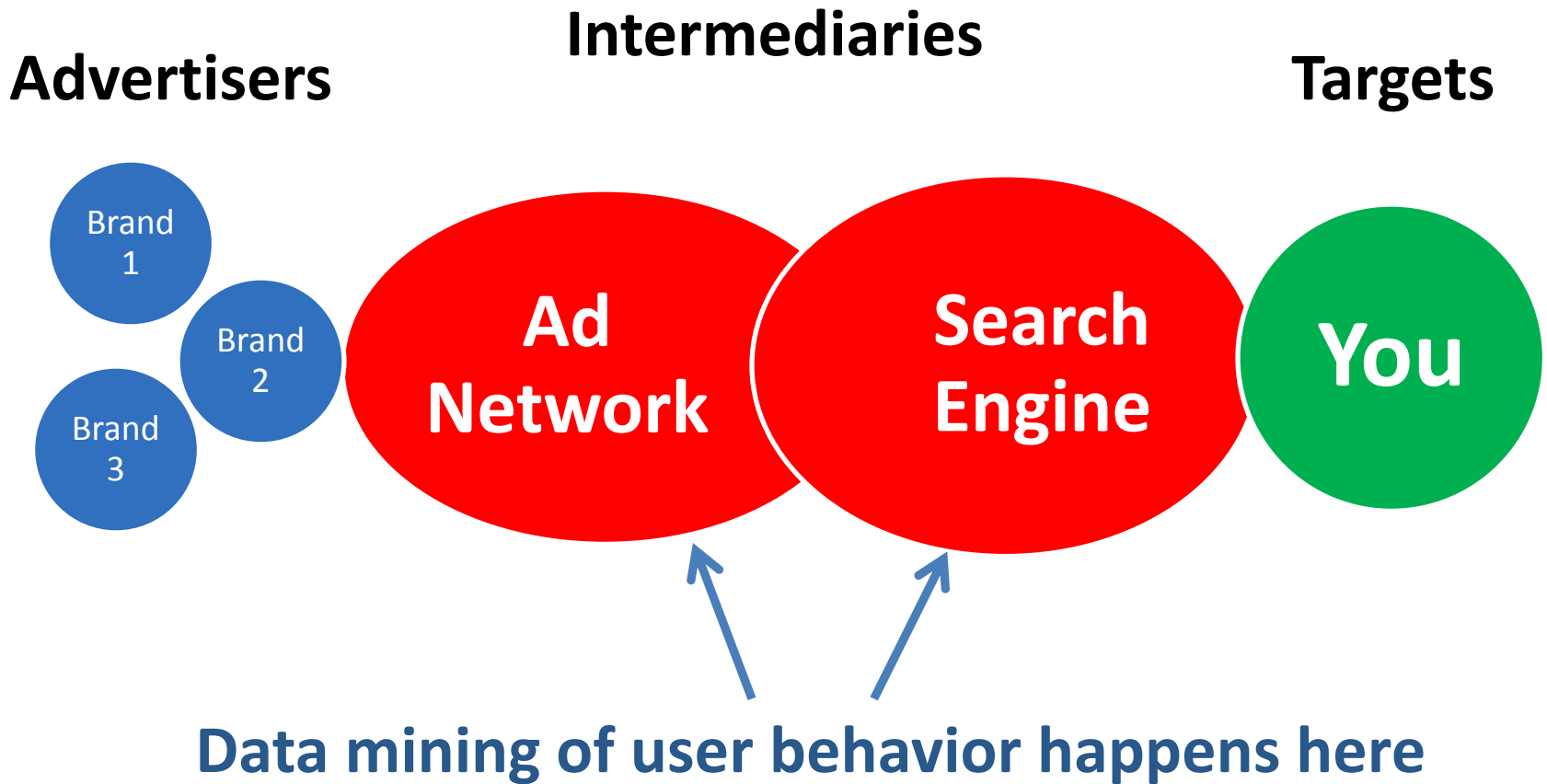


You allow us
to track you

How Ad Targeting Works



Online Ad Industry Structure



How Google Reads Your Email

Internal e-mail Information	External e-mail Information
Subject line	-----
Body of the e-mail	Concepts derived from body
Sender name	-----
Actual sender e-mail address	-----
Concepts from sender e-mail address (e.g. e-mail address based on hobby)	-----
Recipient type (e.g. direct, CC, BCC)	-----
Business card file (e.g. vcard)	-----
Directory paths of attached files	Concepts derived from attached files
Attached files (e.g. word processing files, pictures, etc.)	-----
Information from a web page link included in e-mail	Concepts derived from files web page links
	Time e-mail was sent
	Geographic location of sender
	Geographic location of recipient
	Information derived from search results of a query on extracted e-mail information (i.e. a Google search on the derived concepts)

On the Internet, nobody knows you're a dog



"On the Internet, nobody knows you're a dog."



Peter Steiner, The New Yorker, July 1993

**“There is no such thing as
anonymous online tracking”**

- Arvind Narayanan, Stanford University, July 2011



How to “de-anonymize” data

- 3rd party = 1st party, e.g. Facebook, Twitter, Google+
- 1st party leaks ID information to 3rd party
- 3rd party buys ID information from "matching service"
- 3rd party exploits security vulnerability to learn ID
- 3rd party "deanonymizes" by matching identified data

Source: Jonathan Mayer, Stanford University, “Tracking the Trackers: Where Everybody Knows Your Username”, October 2011

<http://cyberlaw.stanford.edu/blog/2011/10/tracking-trackers-where-everybody-knows-your-username>



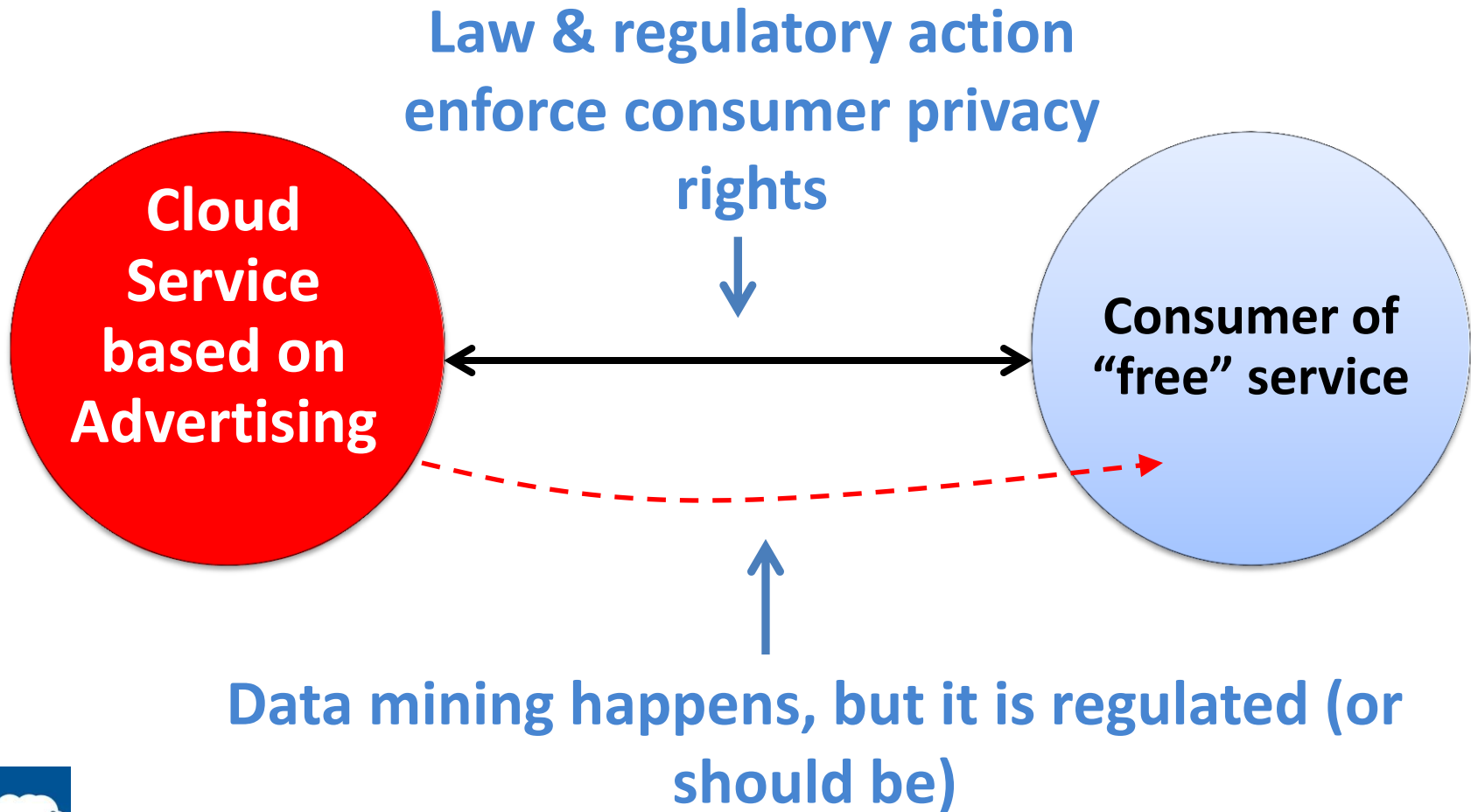
Online Consumer Privacy Rights

- Right to know that ad networks are tracking you
- Right to see what they know about you
- Right to limit what they know about you
- Right to opt out of tracking and ad targeting

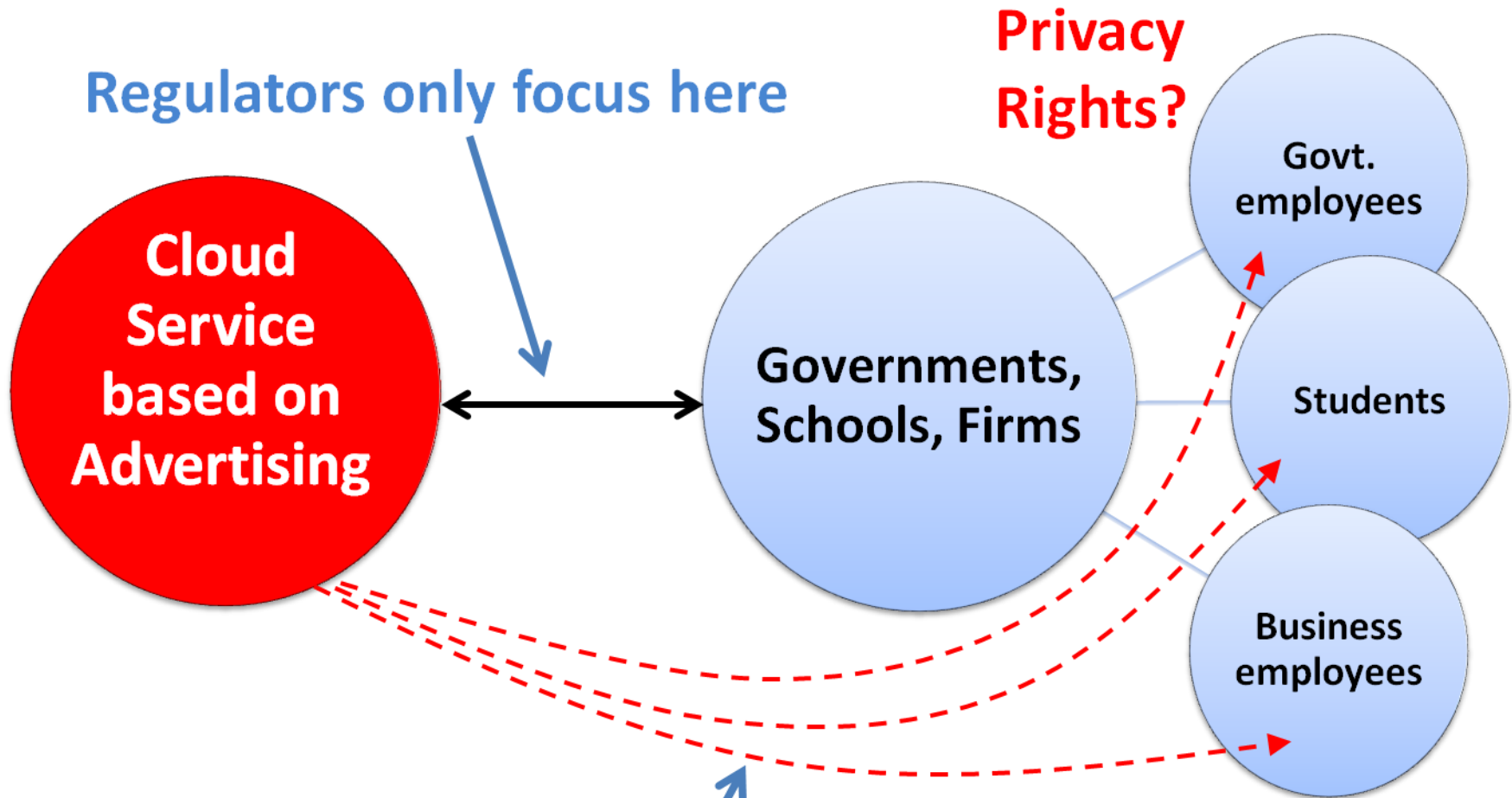
Enforced by law & regulator action



Consumer Privacy Protected



User Privacy Compromised



Regulators only focus here

Privacy Rights?

Cloud Service based on Advertising

Governments, Schools, Firms

Govt. employees

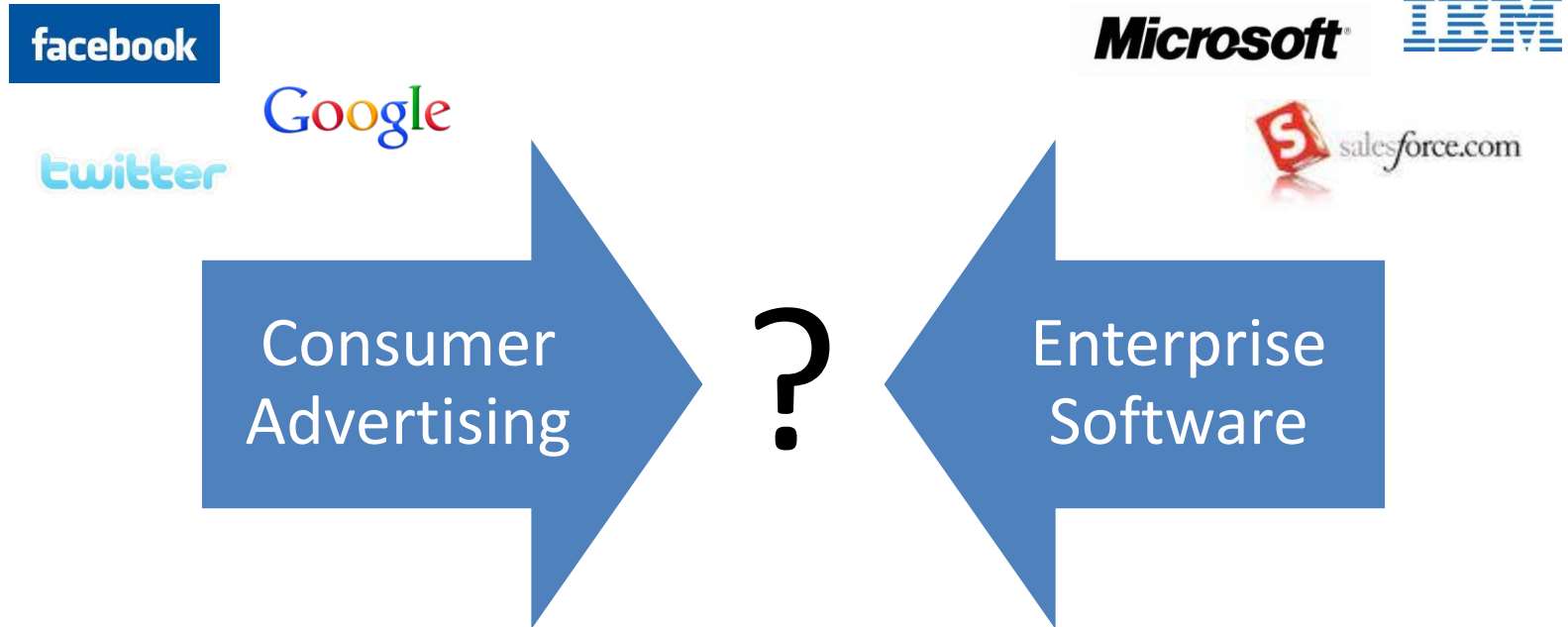
Students

Business employees

Data mining still happens, but it shouldn't



Clash of Cloud Business Models



Simple

Cheap

Not always safe...

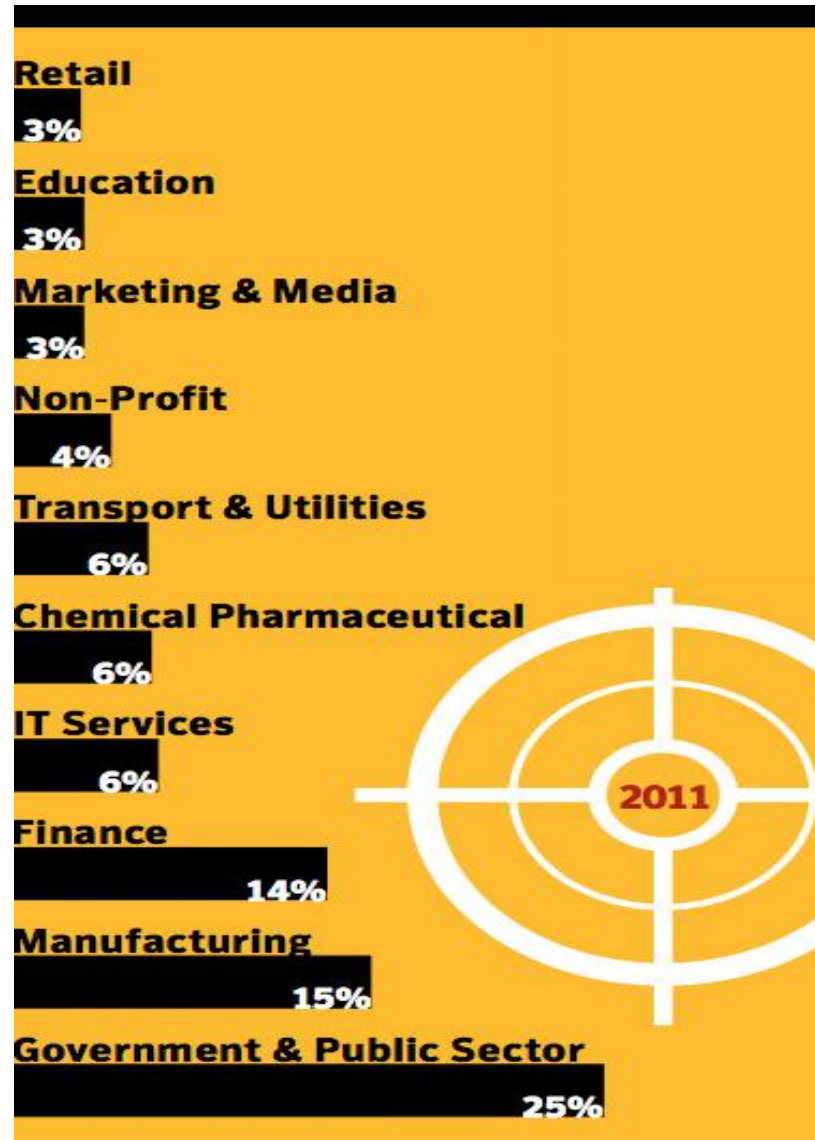
Secure

Feature-rich

Not always cheap...

Both sides can improve...

Govt Biggest Victim of Email Attacks



Source: Symantec