



# Social Clouds

Creating a research agenda

Andrew Lippman  
MIT Media Lab  
October, 2010

# Clouds and Mists: 1<sup>st</sup> Cloud

Defined by *access*

Familiar as the internet

Result of a nexus: PC, backbone, ISPs

Web

Opened vast doors to creativity

# Clouds and Mists: 2<sup>nd</sup> Cloud

Hosting of virtual processes and storage

Enabled by

- fine-grained accountability
- agency (trust)

Centered around composition and specialization:

Using common resources and standard utilities

Simple cost equation, manageable harder issues

An infinite back-end

# Clouds and Mists: 3<sup>rd</sup> Cloud

Defined by *Interaction*

Bandwidth between people and processes

Result of a nexus: Sensors, Mobility, lightweight  
but not flyweight nodes

Portable identity

Social and Public Environment

# Third Cloud

Applications built on a model of *relationships*

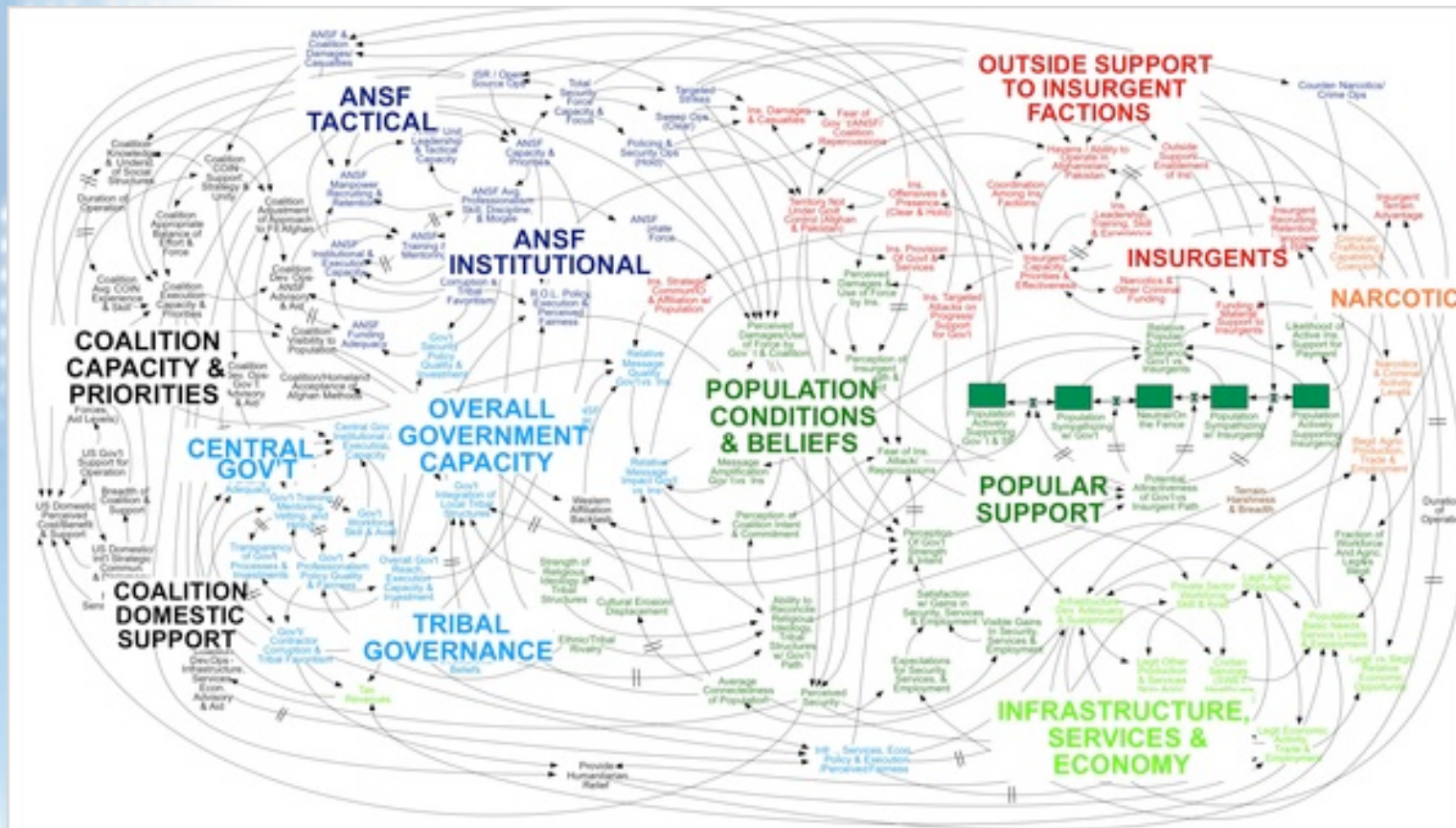
Context-based

Socially-based

Locality-based

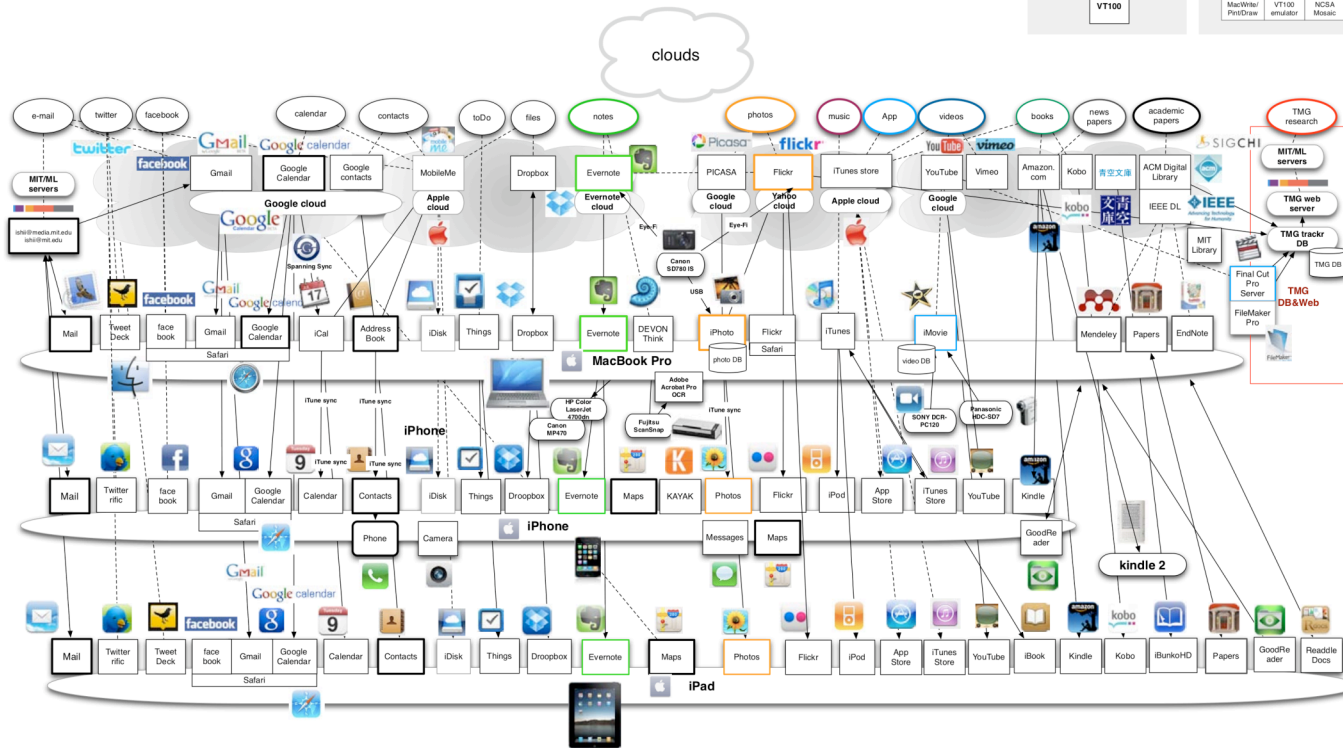
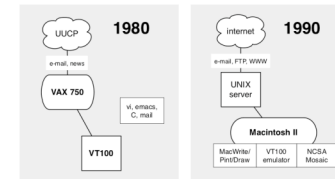
Publish to a space

# Third Cloud

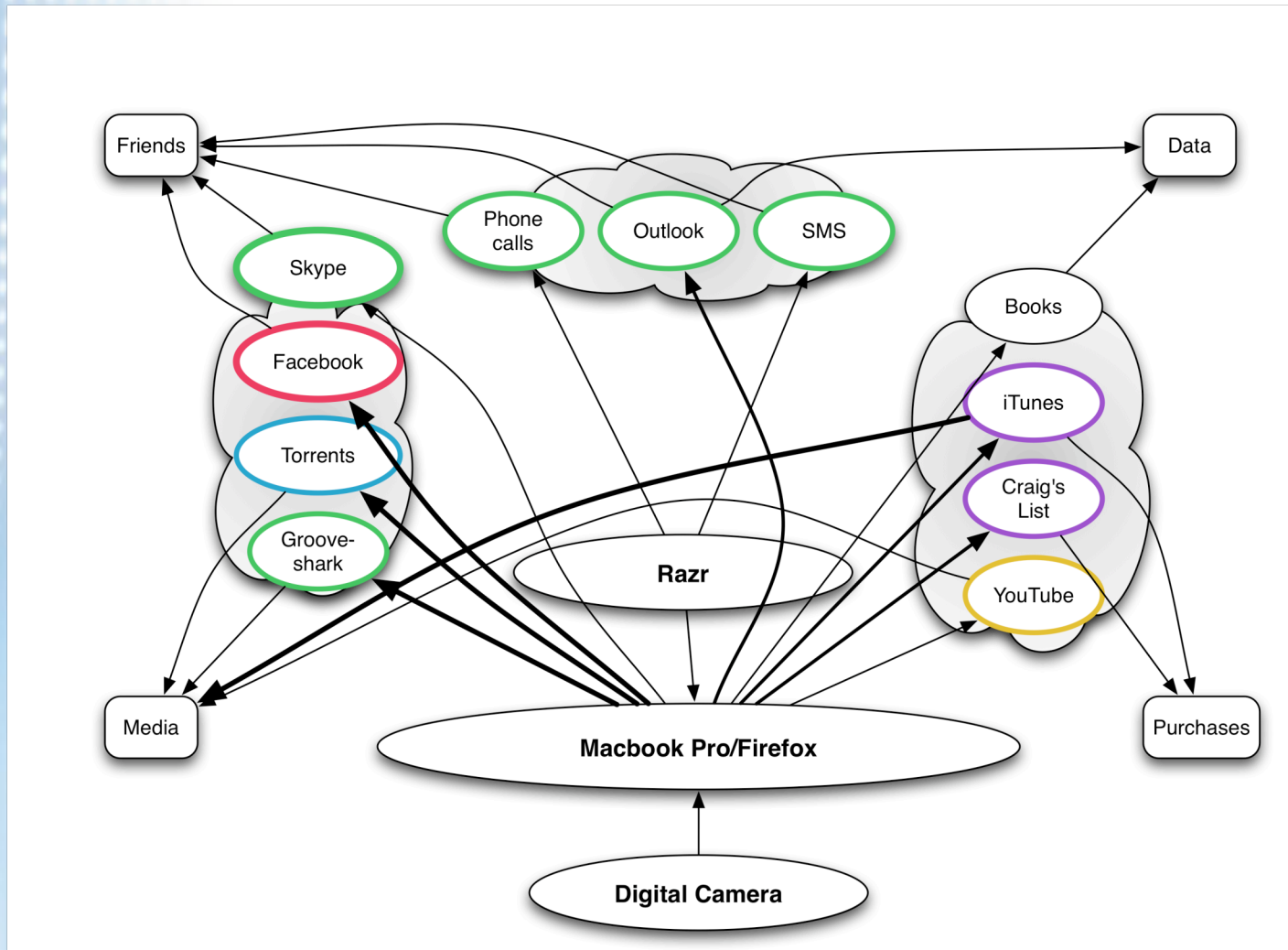


# Third Cloud

Hiroshi ISHII's Digital Life  
 Information Ecology 2010  
 June 12, 2010 Tokyo  
 January 9, 2010 Cambridge MA  
 (c) 2010 Hiroshi Ishii (Please do not distribute)

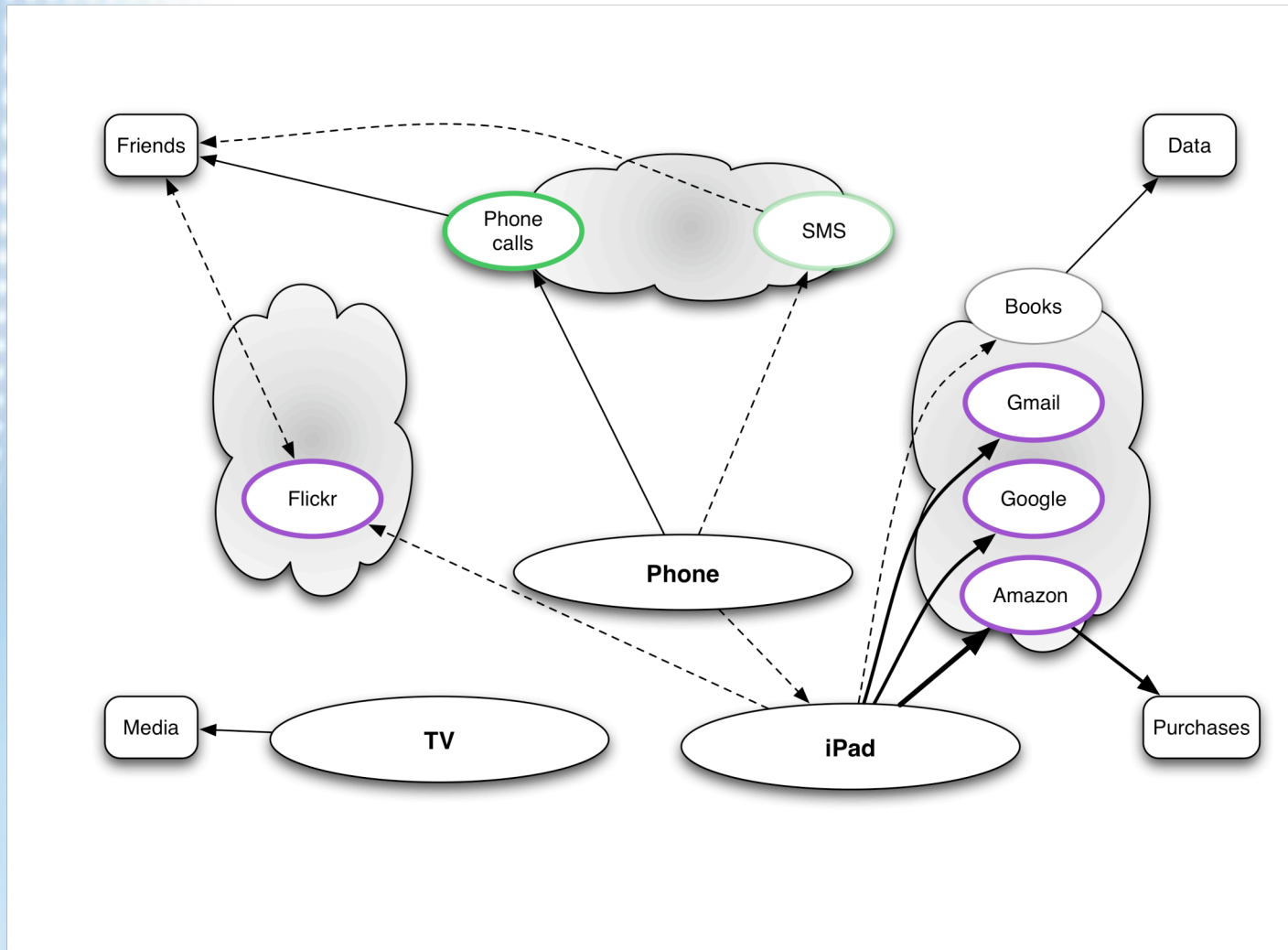


# Third Cloud





# Third Cloud

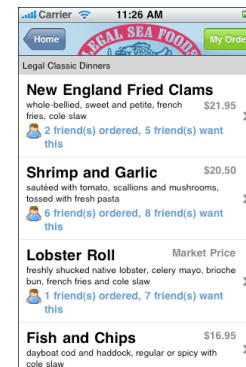
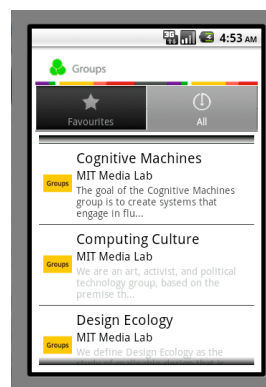
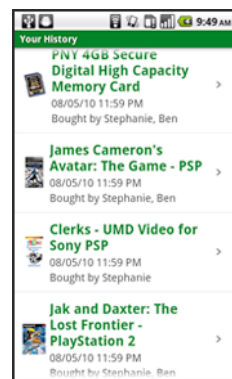
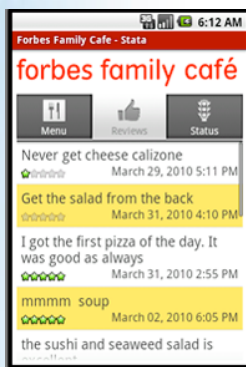




# Just-In-Time Social Networks

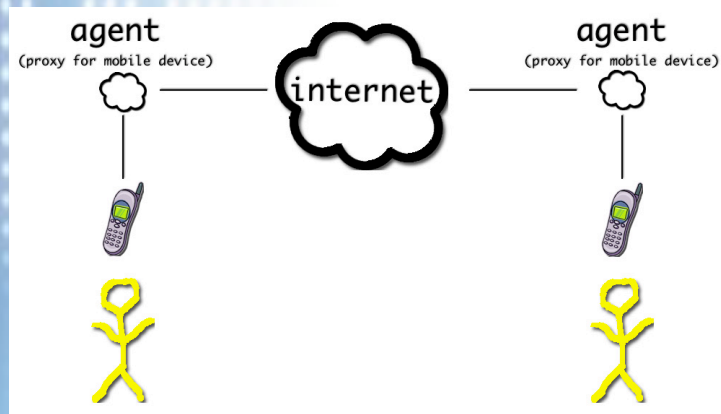
A mix of present and virtual social influences

- Anonymous, individuals, groups affect people in different ways
- Prototypes developed and experiments deployed via smart phones in restaurant, campus and consumer electronics contexts



Intra-app annotations

# EGO: Agency, locality



What agents do:

- Represent humans and objects
- Run in the cloud
- Form a decentralized architecture
- Act as proxy for your context

Ego powers the “Glass Infrastructure”

# Barter – Incented Exchange

— Barter is a marketplace for exchanging knowledge and creating innovation inside an organizational boundary

## Working markets –

- iKnow – Question/Answer market
- iDoc – Document exchange
- iDea – Idea market
- iBay – Auction market
- iDesign – Design for self-design market
- Barter is being used by the “Development Ventures” class at the media lab (Joost/Sandy)
- Will be deployed among other organizations & classes

•URLs: <http://iknow.mit.edu>, <http://barter-dv.mit.edu/>, <http://barter.mit.edu/>

The image collage illustrates the Barter marketplace. The top right shows a network of users connected by lines, representing the exchange. The middle section shows a screenshot of the Barter marketplace interface with various categories like 'Design', 'Economics', 'Books', 'iDea', and 'iKnow'. The bottom section shows a screenshot of a specific idea listing for 'Uganda Real Estate Database' with a rating of 3.4 and several comments.

Dawei Shen, Marshall Van Alstyne, Andrew Lippman

# Reach: Place, Context, Presence

The image is a composite of three panels illustrating the 'Reach' concept in a mobile retail context.

- Left Panel:** A product page for the iPhone 4. It features the Apple logo, the Best Buy logo, and the BestBuy.com URL. Below the logos is a photograph of the iPhone 4. Text below the photo reads: "Apple® - iPhone 4 with 32GB Memory - White (AT&T) Up to 7 hours talk time; 3.5" Retina color display; 8.0 megapixel digital camera with rear-facing camera; built-in GPS; Wi-Fi video calling-capable; Internet e-mail and browsing". At the bottom, there is a section titled "What people are saying about these products:" with several tweets from ShoppingApple and @eshnh\_02.
- Middle Panel:** A screenshot of a text message from "REACH". The message header shows "Messages REACH" and "Oct 16, 2010 3:51 PM". The message text says: "REACHd: Let us sell your Macbook through our retail system while you shop. Many deals close in minutes! Msg back the asking price and we'll get selling". A green bubble response says "\$800". A second message says: "Thank you for allowing us to post your item in our retail environment, we will notify you when someone is interested." The bottom of the screen shows a camera icon, a text input field, and a "Send" button.
- Right Panel:** A product page for the MacBook Pro. It features the Apple logo, the Best Buy logo, and the BestBuy.com URL. Below the logos is a photograph of the MacBook Pro. A white notification box with a red 'X' icon is overlaid on the image, containing the text: "You're in luck! This MacBook Pro is available used from another customer in the store. If you buy it from them today, we can offer you an extended warranty!". Below the notification are links for "Interested" and "Dismiss". At the bottom, there is a section titled "What people are saying about these products:" with several tweets from ShoppingApple and @eshnh\_02.

# Messaging: An example

SMS:      Runs on all phones  
              Foreground operation  
              No signup  
              Sort-of free

              Wedded to phones  
              Requires account  
              Gateways to gardens

Accidental success; distilling connections

# Messaging

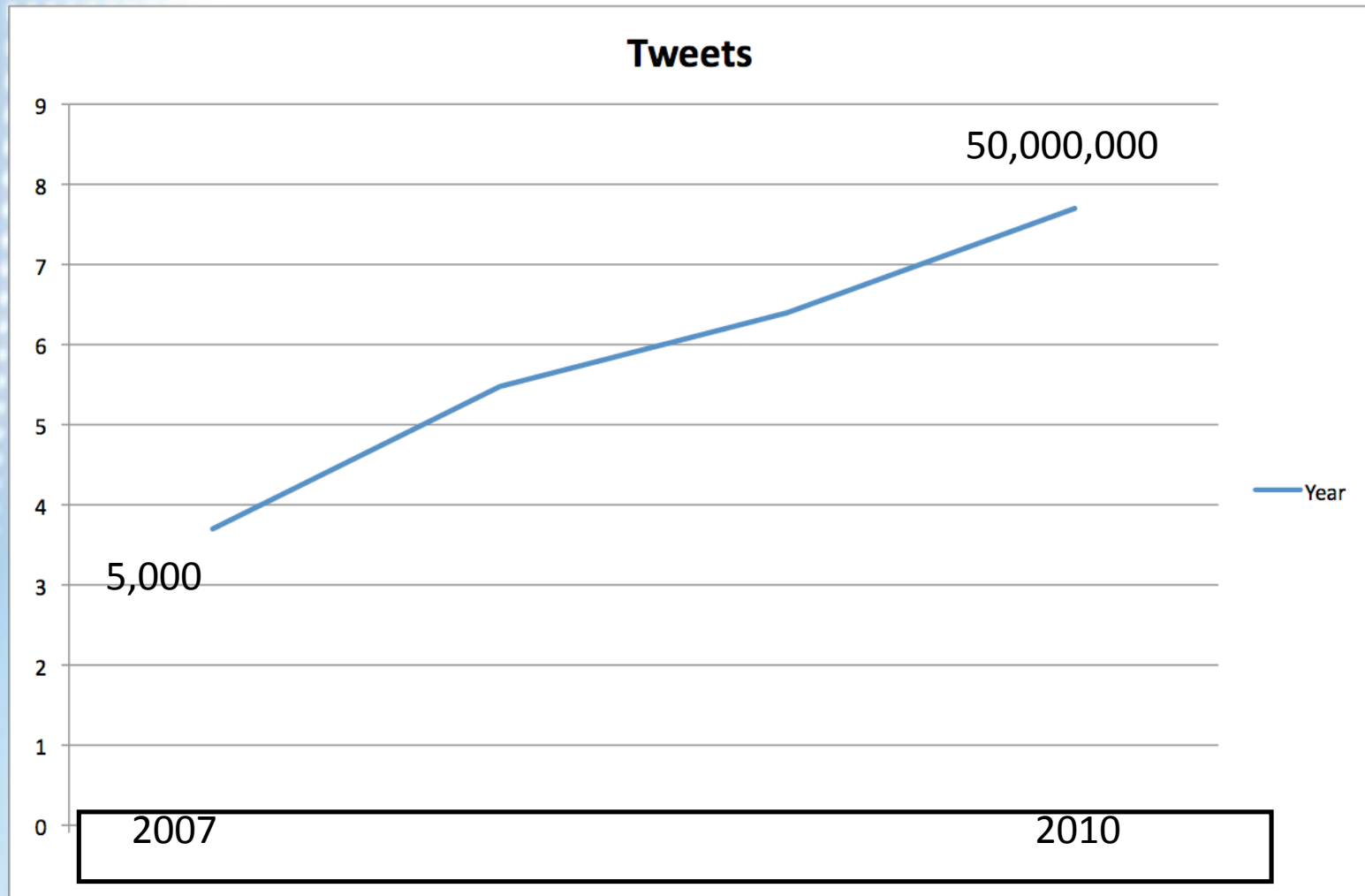
Twitter: Device independent  
Groups, broadcasts, direct  
No phone number  
Works with things  
Automatic linking via apps  
Free

Sign-up inertia  
Critical mass:  
Multi-tasking mobile device

Connection-free; there is no *who*



# Messaging



Exponential growth

# Messaging

Twitter or Jabber protocols:

Open architecture admits to open solutions

Receipts and transactions

Beyond NFC

Things

Places

# D-911, An example

Radial impact

Shared obligation or service

Decentralized/inclusive operation

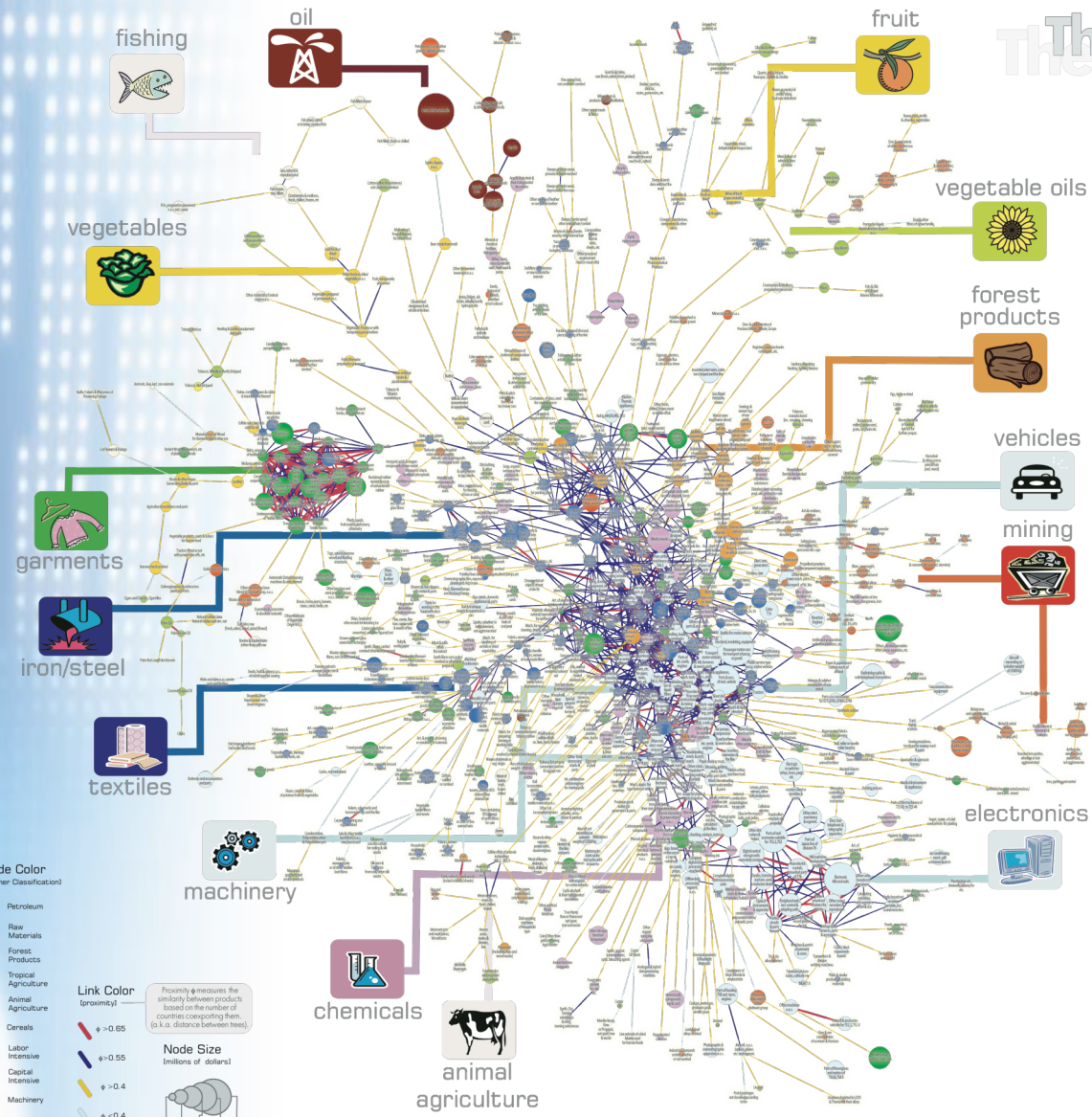
We not *Me* communications

# Clearing the fog

- A better taxonomy of clouds that can inform an analysis of the value chain
- A discussion of the architecture underneath the services (locality v. centralized, addressing...)
- A broader definition of what we mean as stakeholders (places, enterprises, media, industries)
- A “Networked view” and system dynamics view of who can move where
- Applications that push the edge

Edge-core debates revisited

# The Product Space



**Node Color**  
(Leamer Classification)

- Petroleum
- Raw Materials
- Forest Products
- Tropical Agriculture
- Animal Agriculture
- Cereals
- Labor Intensive
- Capital Intensive
- Machinery
- Chemicals

**Link Color**  
(proximity)

- $\phi > 0.65$
- $\phi > 0.55$
- $\phi > 0.4$
- $\phi < 0.4$

**Node Size**  
(millions of dollars)

Proximity  $\phi$  measures the similarity between products based on the number of countries coexporting them (a.k.a. distance between trees).

0.3 2 8 40 2000

"Think of a product as a tree and the set of all products as a forest. A country is composed of a collection of firms, i.e., of monkeys that live on different trees and exploit those products. The process of growth implies moving from poorer part of the forest, where trees have little fruit, to better parts of the forest. This implies that monkeys would have to jump distances, that is, redeploy (human, physical, and institutional) capital toward goods that are different from those currently under production. Traditional growth theory assumes there is always a tree within reach; hence, the structure of this forest is unimportant. However, if this forest is heterogeneous, with some dense areas and other more-deserted ones, and if monkeys can jump only limited distances, then monkeys may be unable to move through the forest. If this is the case, the structure of this space and a country's orientation within it become of great importance to the development of countries."

Hidalgo et al. Science 317: 482-487

## Patterns of Comparative Advantage

■ Indicate relevant exports (where a region's monkeys are located)

### Industrialized Countries





# Social Clouds

Creating a research agenda

Andrew Lippman  
MIT Media Lab  
October, 2010

# Messaging

Cost versus profit center

Resilience versus reliability (eg Google)

Always connected versus not (R&R, again,  
dropbox)

# Environmental Questions

- “Design motility for a city you want to live in”
- “Design an information system that shows guests the ideas behind the visible work”
- “Make a phone we want to use...”

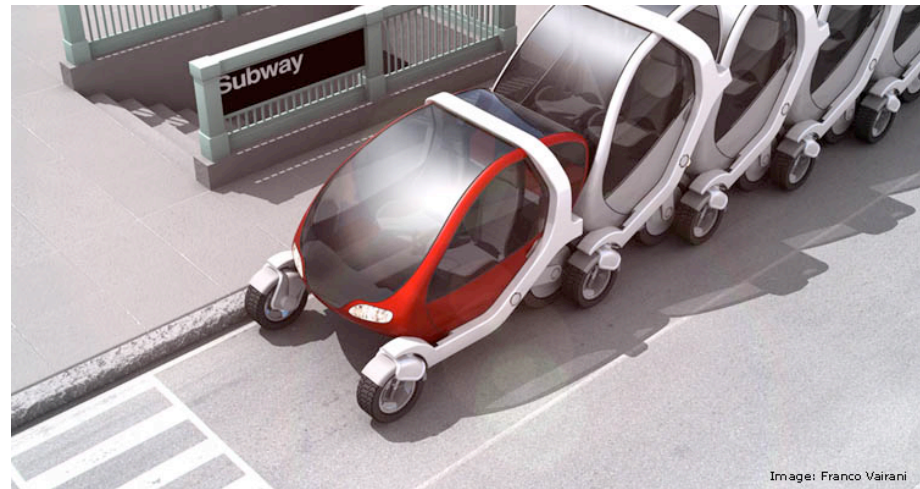


Image: Franco Vairani