How Mobile Disrupts Social as we know it

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Lab affiliates: AVG, Google, ING Direct, Nokia, Samsung.
Part of NSF Programmable Open Mobile Internet (POMI) 2020 project.
Centralized Cloud Services

Proprietary Social Network

Social Intranet vs Social internet
Centralized Cloud Services

Proprietary Social Network

Proprietary App Platform

Zynga Dependency on Facebook

That reliance has raised investor concerns: In July, Facebook instituted a virtual payment system dubbed Facebook Credits, under which the social network takes a 30% cut of all game-developer revenue. The system has affected Zynga, which experienced a 95% drop in its profits last quarter.
Centralized Cloud Services

Proprietary Social Network

Proprietary App Platform

Proprietary Messaging

Social messaging apps 'lost networks $13.9bn in 2011'

Social messaging applications cost mobile network operators $13.9bn (£8.8bn) in lost SMS revenue last year, a report has claimed.

Analysis firm Ovum studied global use of popular services like Whatsapp, Blackberry Messenger and Facebook chat.

It concluded that mobile operators must "work together to face the challenge from major internet players".

Industry experts say operators can offset any losses through effective costing plans by mobile networks.

Social messaging costs remain the same - even for messages sent globally.
Centralized Cloud Services

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The Apple / Google / Facebook Message War Starts Now

JOSH CONSTINE

Monday, July 2nd, 2012

59 Comments

We're on the cusp of a global conflict that will see the three most powerful consumer Internet companies fighting to win control of interpersonal communication. The war will pit Facebook's unified Chat / Messages / Email vs Apple's cross-device iMessage system vs. Google's Gmail / GChat / Hangouts. If one emerges as the definitive victor, it could sway the future of digital human interaction.
Diaspora, 2010

- Must inter-operate across people regardless of privacy concerns.
- New experience, not a subset!
Mobile Can Disrupt

Better than centralized cloud services!

- More available
- Largest social network
  - My phone book has all my friends in it!
The Phone’s Social Network

Phone/Email

Friends in a Party
OSM delivers messages based on user identities. Leverages personal phones & abundant cloud providers.
The Big Picture

Proprietary Social Network

Proprietary App Platform

Proprietary Messaging

Open Social Network

Open App Platform

Open Messaging

PRIVACY  MONOPOLY  SCALABILITY

But kids don’t care.
Distributed OS & File Systems

- Administration
- Accounts
- Authentication
- Access control
- Protocols
- Multiple devices
- Consistency
- Real-time update
- Data caching

AFS, Coda, ...

- Cross platform
- Adoption
- Usability
- Programmability

Better experience
A Better Mobile Social Experience

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Facebook “offers a gateway for hundreds of shallow relationships and emotionally detached communication”.


“They Are Happier and Having Better Lives than I Am”: The Impact of Using Facebook on Perceptions of Others' Lives

Genuine Social

Groups
  persistent
  on-the-spot
  no strings attached

Real-time

Creative  Collaborative
Social collaboration must be A.F.A.P! (as frictionless as possible)

Metric: # of human synchronizations
Friction

“Could you take the same picture with our 4 cameras please?”
Download 2plus from the iPhone app store.
Organizational Principle

PC
- Files and Directories
  - Dropbox
- Web
  - Apps
  - Facebook connect

Mobile / Social
- Group chats
- Open Social Mobile (OSM)
Social First: Groups First

- Persistent, ad hoc, on-the-spot
  - 70% of email are sent to 20% of the recipient groups. [KDD SNA workshop 2011]
  - Not Google circles.
- Group chats as a first-class object
  - On the phone for multiple uses
  - Can be passed around
- Illustrate with use case examples ...
Sharing Instantly & Collaboratively

2plus

Inviting Nearby People

You are about to share this group openly with the people near you.

Share openly

Protect with a PIN

Unshare

Cancel yeah!

You like this x28
Kirsten Fuller likes this x101
Tj likes this x10

Nearby

dales holiday party

4 people

Nearby

VINTAGE OAKS

Arlington Ave

Coleman Ave
Adding group members as easy as adding email recipients
Directed Sharing in 1 Click

Collaborative real-time photo album

Contextual sharing
From Capture to Recall

Joint folders based on group & sharing purpose

Chat is a transaction log of the database update.

Embedded blob pointers to distributed databases.
Simplest Collaboration

Katie ➡️ Monica

Monica ➡️ Katie
Click-edit-return in 2 clicks
Multiparty Games

Monica

T. J.
IN-App Sharing with Identity Firewall via 2+
App Platform

- Social in half a day
- API
- no server installation
- Frictionless multiparty interaction
- Identity firewall
- Viral spreading:
  - share app state prior to installation
How Easy is It?
Migo Project, summer 2012
7 High-school students
6 Weeks
5 Multi-party games

Noes game must be A.F.A.P.!
Programming Simplicity

Multi-party games is like browser

2+ chat is like browser
CS Stereotype

Nerdy
Solitary
Tedious
Not Creative
No impact
Exclusive
Hypothesis

- Break the stereotype
  - Pique the interest: Video concept competition for mobile/social apps
  - Tinker: mobile social apps
- Get them to take a CS class in college
  - Stanford: 90% of undergrads take a CS class; CS is the largest major
Social networking of the people for the people by the people.
Beyond Big Data as we know it.
Beyond Big Data as we know it

- Big data
  - In silos
  - Not enough cycles to devote to individuals
- Big data - “egocentric” style
  - All actions on the phone
  - From all friends & social networks
Experience-Infused Software

**Search engine**
infused with ~5000 names from email/twitter
is comparable to Google. [cscw 2012]

**Browser**
infused with ~5000 names from email
provides serendipitous recall. [iui 2012]
Summary

- Open Social Mobile (OSM) Architecture
  - Addresses: privacy, monopoly, scalability
  - Distributed semantic web
  - First-class groups: A.F.A.P. social collaboration
  - Big data: “egocentric” style
- Mobile-social can help change CS stereotype for high-school students
Call to Action

- Publicize mobisocial video competition
  http://facebook.com/StanfordMobiSocial

- Download 2plus
  http://get2pl.us

- Build open p2p social apps
  http://mobisocial.us