RAPID PROTOTYPING
FIELD EVALUATION

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Today's Class

- Principles for field evaluation of prototypes
- Methods for evaluating new concepts
- Examples of rapid prototyping and field evaluation
- Plan your own field studies

on specs, phones are computers

- Dual Core1.2 GHz processor
- 1 GB RAM
- 32 GB storage
- 540 x 960 display
- WiFi, 3G, Bluetooth
- 3300 mAh battery
- Hundreds of thousands of applications

in use, they are not…

http://www.flickr.com/photos/c0t0s0d0/2371272918/

http://www.flickr.com/photos/mmewuji/2299648584/

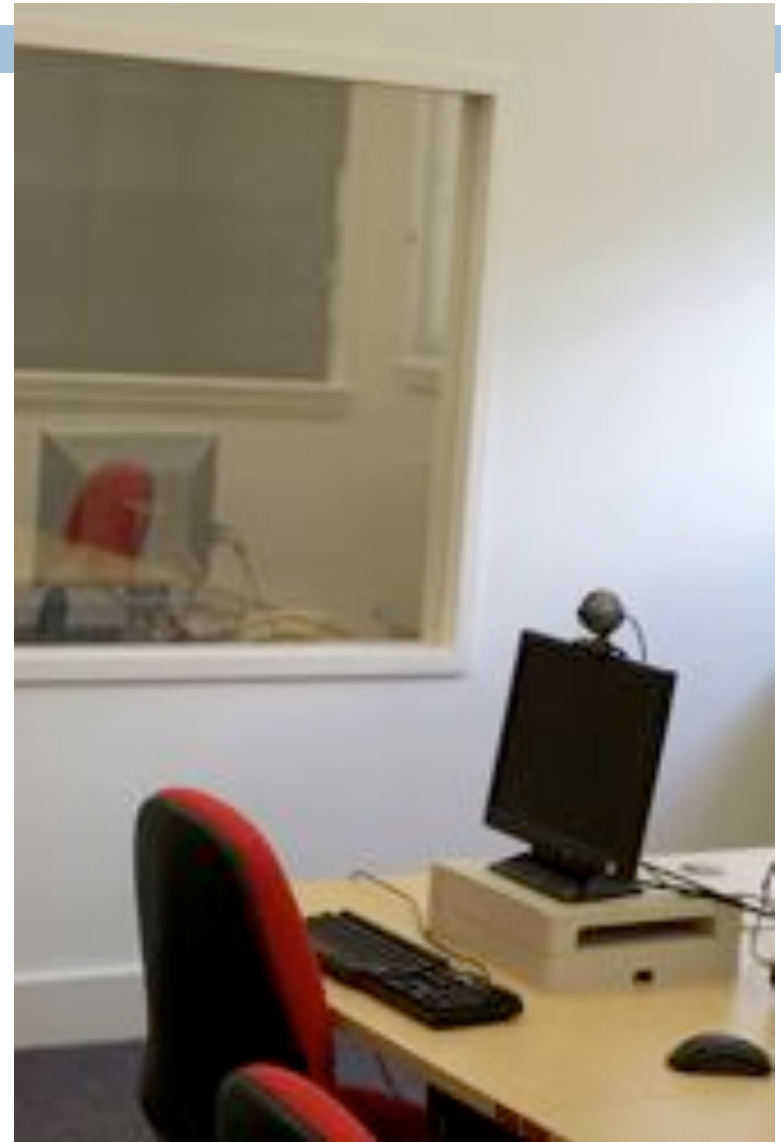http://www.flickr.com/photos/abekleinfeld/3112840560/

- Location
- Social Connectivity
- Ubiquitous Media Capture

- Down time
- Serendipitous Interactions
- Interaction with environments

what the lab can tell you

- basic flow and interaction issues

- data integration issues (interfacing with contacts, web service accounts)

- understanding of prompts and icons

- etc.

what use in context can tell you

- How and when service will be used
- How interactions fit into daily life
- Tasks which system does not support
- Creative uses of service in the world

http://www.flickr.com/photos/nicaprio/4557139564/

http://www.flickr.com/photos/yourdon/3030246123/

Much more basic (and important!) questions!

new evaluation philosophy

- Get new concepts in the field as early as possible
  - Weeks after having idea!
  - Working functional prototype
- Field evaluations serve to:
  - Improve Concept
  - Mitigate Risk (kill unsuccessful concepts)
  - Build understanding of mobile interaction
- Make prototyping and field testing:
  - Cheap (incentives + your time)
  - Fast (~2 week implementation, ~3 week study)
  - Informative (interviews, home tours, diary logs, voicemails, photos, etc.)

principles for building prototypes

1. build only what you need
2. build the experience, not the technology
3. build it sturdy (enough)

Build only what you need

- The first prototype is built to answer specific research or implementation questions
- Build the minimum that you need to answer these!
  - Minimal configuration
  - Minimal graphics / custom screens
- If purpose is to test new experience, goal is to minimally prototype that experience
- If purpose is to test tech, goal should be to implement that new technology component

Build the Experience, Not the Tech

- If testing how a new experience will fit into people's lives:
  - Build something that creates that experience as simply as possible
  - Limit the development of large tech pieces until you have proven your concept
  - Mashup, don't reinvent

Build it study (enough)

- Application has to work in real world settings
  - Sturdy network code (retry as necessary, fail gracefully)
  - Sturdy database code (accept all types of character inputs)
  - Stable and responsive interface that does not (often) crash or crashes gracefully

principles for testing prototypes

1. social groups for social technologies
2. real contexts of use
3. primary device
4. field-based data collection

Social Groups for Social Tech

- If app/service requires communication among friends/family
  - Recruit social groups to participate in study
  - Find existing groups of friends and family
  - Can be difficult if they all need to have a certain phone type or carrier!

Real Contexts of Use

- Have participants use system in real settings
  - Throughout daily life for most apps/services
  - For apps tied to a place, can run small trials in a particular setting:
    - Restaurant
    - Stadium
    - Etc.
  - Directly observe users of have them keep detailed notes of their interactions combined with interviews with you

Primary Device

- For systems where people are using system over a period of time:
  - Use their own phones
  - Install app
  - Interacting with two devices creates new patterns of interaction that do not correlate with real use
  - Much easier now with Android and iPhone

Field-Based Data Collection

- Don't rely on self reports

- Instrument application/server to log interactions

- Have participants create voice notes or call a voicemail system to record details of their interactions

- Conduct interviews soon after participants use application and use prompts from logs/voicemails to elicit memories of particular interactions

Evaluating results of studies

- When should you keep going with an idea?
  - Participants choose to keep your application installed on their phones
  - Participants find rewarding ways to interact with your application/service that bring them real benefit/ enjoyment
- When should you change course?
  - If users find little/no benefit to using service
  - If service does not fit into the way they live their lives

Methods

- Diary Logging

- Content Analysis

- Instrumentation

- Contextual Inquiry

- Experience Sampling

- Interviews

Diary Logging

- What it is:
    - Asking users to keep track of specific data tied to particular instances of use (usually over several weeks)
    - Diaries can be paper, photo, video, voicemail, etc.
- What you learn:
    - Details of specific interactions, close to the time of interaction (when details most salient)
    - More accurate representations of frequency of use and action taken (if asked weeks later, data not trustworthy)

Diary Logging

- How to:
    - Decide on specific actions that you want users to log (e.g. every phone call, instances of mobile search, TV watching, etc.)
    - Provide a means of logging (paper log, mobile logging app, voicemail number, photos, etc.)
    - Collect logs and find any log entries that you do not fully understand / would like more data about
    - Conduct interviews with participants focusing on items that need additional contextual information / items of specific interest

Diary Logging

- Examples:
  - Serendipitous Family Stories
    - Voice mail logs used after finding a story to record experience, any follow up actions
    - Helped us understand experience of finding location-based videos and what people do once they found them
  - Motion Presence Study
    - Voice mail logs used after viewing moving/not moving status in the phone book
    - Helped us understand how motion data was being interpreted and used

Diary Logging:

- You can report:
  - For example, Harold delayed communication: "[George], I knew he was going to work, but I wasn't sure if he got there already and I saw that he was not moving for 12 minutes. So judging by that I'm getting that he was already at work so I didn't bother calling him."
  - "I could tell when he was leaving work by when he went off of 'not moving.' ... It was like, ok, I saw that he was already on his way and we'd get there about the same time."
  - She called "to say that I made her cry that she was so touched by the stories. And she thought they were funny, the first ones I told her about."
  - "After that [watching the two new stories] I called both my mom and my brother and I laughed about the situation cause it was pretty funny what they said."
  - "My husband was watching it with me, we were in the car. So we were in the car and he was watching it with me and was laughing. I don't remember word for word what we were talking about and then my kids starting asking us questions about it, I know that. He wanted to see the video and they got all involved in it too."
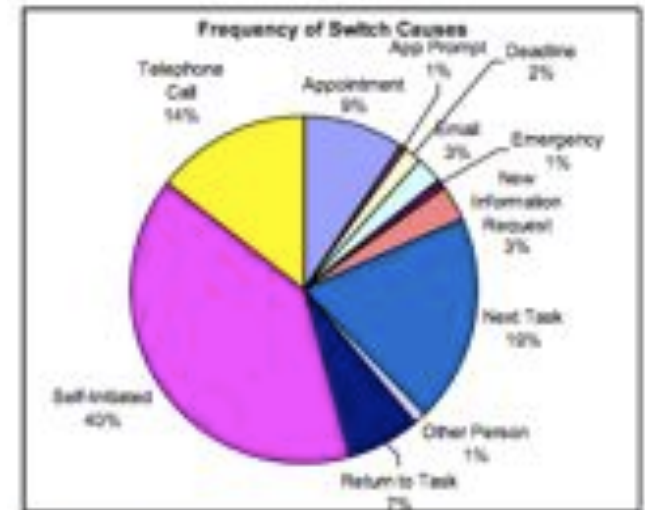

Figure 3. The frequency of diary entries for the kinds of events that instigated task switches. For our sample, users chose when to switch tasks or worked off a to-do list a majority of the time.

Czerwinski et al

Further Reading

- Palen, L. and Salzman, M., "Voice-mail diary studies for naturalistic data capture under mobile conditions," *Proc. of CSCW '02, pp. 87-95.*

- Bentley, F. and Basapur, S. (2012) StoryPlace.me: The Path From Studying Elder Communication to a Public Location-Based Video Service. In Proc CHI 2012.

- Mary Czerwinski, Eric Horvitz, and Susan Wilhite. 2004. A diary study of task switching and interruptions. In Proceedings of the SIGCHI conference on Human factors in computing systems (CHI '04).

- Bentley, F. and Metcalf, C. (2007) Sharing Motion Information with Close Family and Friends. In Proc CHI 2007.

Content Analysis

- ## What it is:
  - Systematically analyzing aspects of the content in a particular collection

- ## What you learn:
  - An understanding of the qualities of a particular platform, the types of content it affords
  - Evolving use over time in terms of types of content created

Content Analysis

- How to:
  - Get access to a relevant subset of content (random sample, all content that meets your criteria, etc.)
  - Explore various aspects of that content:
    - Length, creator demographics, points of view expressed, day/time created, topic, comments/likes on media, narrative style, etc.
  - Look for common themes in data
    - Affinity analysis
    - Statistical analysis

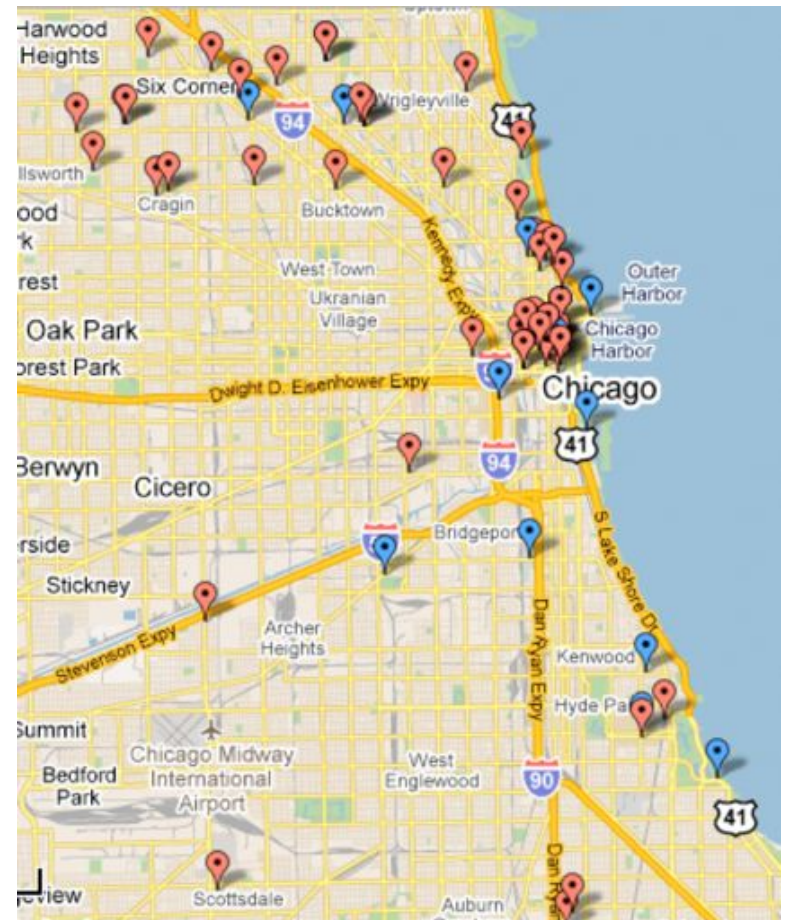# Content Analysis

- Good Examples:
 - Audubon Dougherty's CMS Thesis
    - Analyzing civic content in mobile live streaming systems
    - Content length, creator demographics, language, hosting style, location created, date created, etc.
  - StoryPlace.me (Motorola Research)
    - Analyzing aspects of inter-generational location-based media content
    - Content length, people mentioned in story, story location, timeframe of story, places mentioned in story, etc.

Content Analysis

□ You can then report things like this:
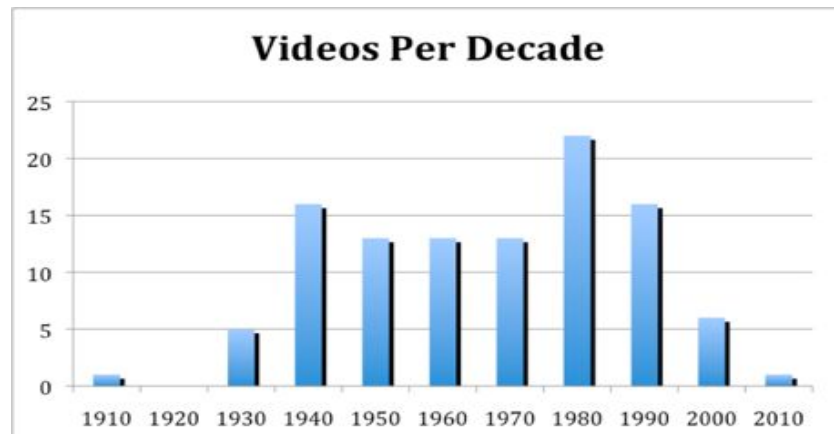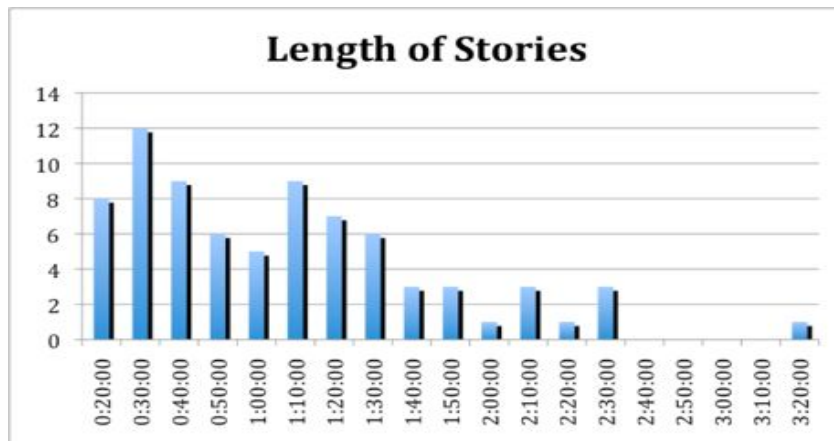
Further Reading:

- Hansen, A., Cottle, S., Negrine, R., & Newbold, C. (1998). Content analysis. In *Mass communication research methods. New York: New York University Press.*

- Dougherty, A. New Medium, New Practice: Civic Production in Live-Streaming Mobile Video. CMS Masters Thesis. MIT. 2010.

- David A. Shamma; Lyndon Kennedy; Elizabeth F. Churchill. Tweet the Debates: Understanding Community Annotation of Uncollected Sources. ACM Multimedia, ACM, 2009

- Bentley, F., Basapur, S., Chowdhury, S. Promoting Intergenerational Communication Through Location-Based Asynchronous Communication. Proceedings of Ubicomp 2011.

Instrumentation / App Analytics

- What it is:
  - Getting detailed data about how people are using an application or system
  - Logs of use (per user or aggregated)
  - Finding patterns / trends / descriptive statistics in usage data

- What you learn:
  - How systems are being used by different users and in different contexts
  - Which features get the most use when and by whom
  - Differences in use across time and day

Instrumentation / App Analytics

- How to:
  - Decide on the factors that you want to log
    - User ID, Timestamp, Every screen or click, Specific interactions like creating or viewing content, commenting, etc.
  - Add logging to system for these factors (or ask application provider for data)
  - Find patterns in data (usually with Hadoop and R)
    - Usually GB and GB of data!

Instrumentation / Analytics

- Examples:
  - Facebook Data Team
    - Predicting presidential elections based on Facebook updates
  - Shamma's work on Zync
    - Understanding use over time, session length, repeat visitors, etc.
  - Bentley and Basapur's work on Serendipitous Family Stories
    - Understanding use of the application, how many times videos were replayed, how many notifications preceded actually opening the story
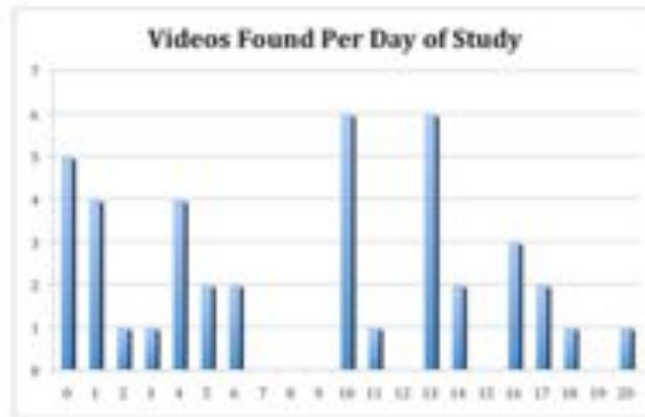 - Bentley and Groble: TuVista sports media system.
    - Showed how content access was strongly correlated with breaks in the game on the field.

Instrumentation / App Analytics

- What you can report:
  - By the end of the four weeks, our participants had discovered 83% of the stories that were created for them. (Bentley et al)

  Videos Found Per Day of Study

  - A total of 895 users (32%) returned for more than one Messenger Zync IM session. (Shamma et al)
  - Overall, the top 20 most watched videos average 197.7 seconds in length. However, we observed a general trend that videos with heavy chat activity were, on average, longer in length (304.9s). (Shamma et al)

Further Reading:

- David A. Shamma. 2011. Defensive research within the mobile marketplace. In Proceedings of the 2nd international workshop on Research in the large (LARGE '11). ACM, New York, NY, USA, 5-8.

- David A. Shamma. 2012. People and the Data They Make. Dean's Lecture. UC Berkeley. (audio available online: http://www.ischool.berkeley.edu/audio/download/21533/2012-02-29-david-ayman-shamma.mp3)

- Facebook Data Team: https://www.facebook.com/data

- David A. Shamma. 2012. R Tutorial. http://www.ayman-naaman.net/2012/03/20/r-is-calling-will-you-pick-up-the-phone/

- Bentley, F. and Groble, M. TuVista: Meeting the Multimedia Needs of Mobile Sports Fans. Proceedings of ACM Multimedia. 2009

- Bentley, F., Basapur, S., Chowdhury, S. Promoting Intergenerational Communication Through Location-Based Asynchronous Communication. Proceedings of Ubicomp 2011.

Contextual Inquiry

- What it is:
  - Directly observing users perform tasks in real contexts of use

- What you learn:
  - How environment affects task performance
  - Other resources that are available while people are performing a tasks
  - Social and physical interactions involved in a task

Contextual Inquiry

- How to do it:
  - Decide on tasks that are of interest to you
  - Find people who do these tasks
  - Go to the places where people actually perform these tasks
  - Have them perform the task while video/audio recording
  - Ask follow up questions on parts that remain unclear
  - Create flow models
  - Perform grounded theory-based affinity on qualitative data

Contextual Inquiry

- Examples:
  - Bentley, Metcalf, and Harboe study of music use in context
    - Had users find music to play for specific situations in the home/car (situations that they actually reported doing in the recent past)
  - H&R Block
    - Visited people's homes to see everything that goes into tax preparation off the screen (finding documents, calling banks, etc.)
  - General Motors
    - Design of the CUE system based on 32 contextual observations of users driving their cars

Contextual Inquiry

Music Information Flow Diagram

Physical Flow Model

□ What you can report:

- They would play a mix or random shuffle of their music, and skip songs they didn't like. MU2: "I don't like this song, I don't like this song. I'll just flip through it."

- MU10 referred to her music by number. She'd pick up a CD and mention that "number 7" is her favorite song. Because she doesn't know the names of her songs and uses numbers to identify them, she must turn on the TV in order to see the numbers for songs she likes (displayed from the DVD player where she plays her CDs). She ends up memorizing track numbers and uses this knowledge to help her play the songs she likes in her car. She only plays particular tracks from a CD when she inserts it.
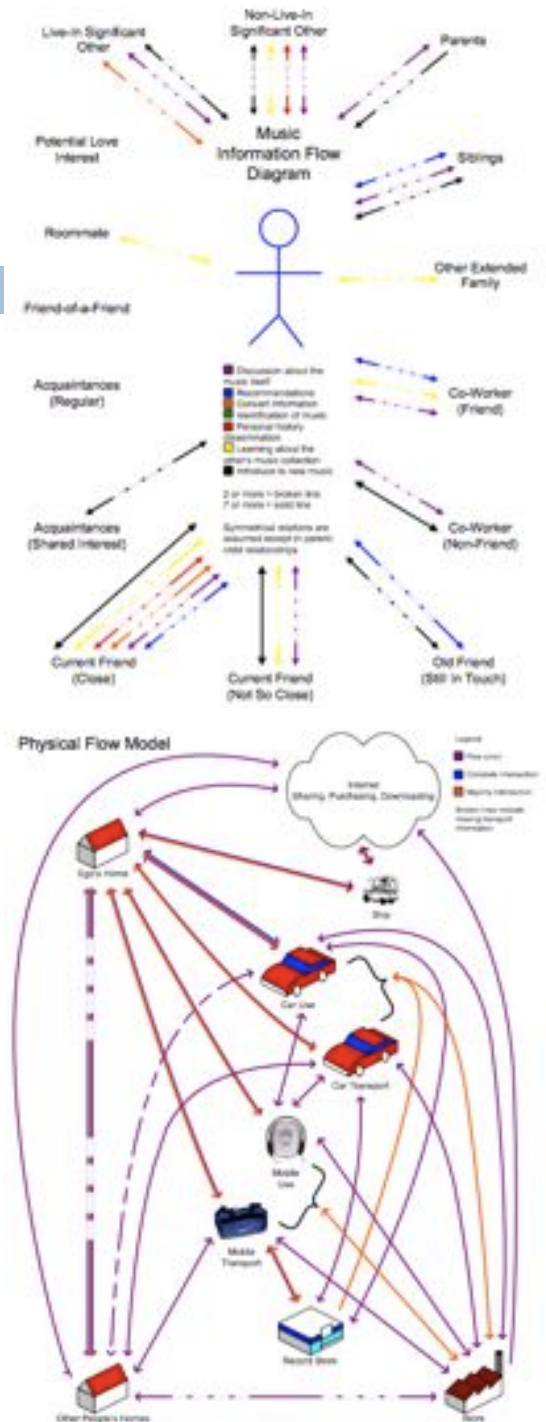
Further Reading

- Beyer, H. and Holtzblatt, K. (1998): Contextual Design: Defining Customer-Centered Systems. San Francisco: Morgan Kaufmann.

- Holtzblatt, K. and Beyer, H. (1993) Making Customer-Centered Design Work for Teams. In Communications of the ACM. October 1993. Vol 36, No 10. pp93-103.

- Andrew W. Gellatly, Cody Hansen, Matthew Highstrom, and John P. Weiss. Journey: General Motors' Move to IncorporateContextual Design Into Its Next Generation of Automotive HMI Designs Proceedings of the Second International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI 2010), November 11-12, 2010, Pittsburgh, Pennsylvania, USA.

- Bentley, F., Metcalf, C., and Harboe, G. Personal vs. Commercial Content: The Similarities Between Consumer Use of Photos and Music. In Proc CHI 2006.

Experience Sampling Method (ESM)

- What it is:
  - Interrupting users and asking questions (usually on a mobile device, but could also be over the phone)

- What you learn:
  - Time use (% of responses doing a particular activity)
  - How users would respond to a request at a particular time (e.g. location sharing)

Experience Sampling Method (ESM)

- How to:
  - Use an existing ESM toolkit
  - Define prompts
  - Define trigger times (e.g. 5 times/day random between 8am-10pm or after every phone call)
  - Collect data
  - Look for patterns within and among users

Experience Sampling Method (ESM)

- You can report:
  - Turning our attention to the 23% of the time participants were *not willing to disclose their location to the requester, they responded with "I am busy," "Request denied," "System busy," or a lie (in order of overall popularity). (consolvo et al)*

Further Reading:

- Barrett, L.F., Barrett, D.J., "An Introduction to Computerized Experience Sampling in Psychology," *Social Science Computer Review, Vol. 19, No. 2, (Summer 2001), pp.175-85.*

- iESP software website: http://seattleweb.intel- research.net/ projects/esm/iESP.html (verified Jan 6, 2005).

- Consolvo, S., Smith, I., Matthews, T., LaMarca, A., Tabert, J., Powledge, P. Location Disclosure to Social Relations: Why, When, & What People Want to Share. In Proc CHI 2005.

- Larson, R. and Csikszentmihalyi, M. (1983): The Experience Sampling Method. New Directions for Methodology of Social & Behavioral Science, vol. 15, Mar 1983, 41-56.

- Hektner, J.M., Schmidt, J.A., Csikszentmihalyi, M. (Eds.). (2006). Experience Sampling Method: Measuring the Quality of Everyday Life. Sage Publications, Inc. ISBN 978-1-4129-2557-0

Semi-Structured Interviews

- What they are:
  - A series of topic areas to explore with participants, following up with additional questions based on their responses
- What you learn:
  - Details of use in particular domains, preferences, recent behaviors/actions in domain of interest
  - Qualitative explanatory details behind observations attained through experience sampling, diary logging, home tour, etc.

Semi-Structured Interviews

- Examples:
  - Elder Communication Study
    - Asked participants details about recent communications across generation and distance, places these communications took place, etc.
  - Music Context Study
    - Asked participants details about music playback in a variety of settings, music acquisition, sharing, etc.

Semi-Structured Interviews

- **What you can report:**
  - Details of use, experience, preferences
  - Specific past instances of interaction with a system/content/social group/etc.
  - Examples:
    - C2 displayed a large photo of her mother in her room. "I'm very close to my family. So they're up there and so sometimes if I glance up at that picture I'm like, 'ah, calm.'"
    - C4 goes to a megachurch outside of Chicago that puts its sermons online. "If it's a hot subject she'll call up [P4]. 'Yeah, did you watch it?' … So they compare notes on this guy."
    - P2: "When I'm driving long distances I will make calls to all three of my kids just to touch base or to leave a voicemail even if they're not picking up."
    - "I hadn't listened to [Laura Love] for a while because sometimes you get lazy and just keep going for the same thing, […] so I listened again in the last couple of days."

Further Reading

- Beebe, James (2001) Rapid Assessment Process. Walnut Creek, California. Altamira Press publishers.

- Bernard, H. Russell (1988) Research Methods in Cultural Anthropology. Newbury Park, CA. Sage publications.

- LeCompte, Margaret D. and Jean J. Schensul (1999) Designing and Conducting Ethnographic Research. Ethnographer's Toolkit 1. Walnut Creek, California. Altamira Press, Sage publications.

- StoryPlace.me: The path from studying elder communication to a public location-based video service. Frank Bentley and Santosh Basapur. CHI 2012 Case Study. May 2012.

3 examples

- TuVista
  - Mobile sports video service

- Motion Presence
  - Mobile presence service to build awareness without sharing location

- Music Presence
  - Social system to receive metadata about music your friends are playing on your phone

example 1: TuVista

□ How can mobile video enhance the fan experience at a live sporting event?

　□ Additional Content / Replays

　□ Social Interaction / Comments / User Generated Content

+

http://www.flickr.com/photos/garydenness/4614160324/

Detached and anonymous　　　　　　Engaged and social

method

- Learn by doing:
  - Build initial rapid functional prototype
  - Test in real setting
  - Gather feedback
  - Learn from use + iterate

timeline

- **Phase I prototype (Mexico City)**
  - Implementation
  - Field Trial (Spring 2008)
- **Learnings from use**
  - Producing content
  - Fan experience
- **Phase II commercial system**
  - Used learnings to create new system
  - UCLA Trials (Spring 2009)
  - Paralympics World Cup (Spring 2009)
  - Product with Denver Broncos NFL team

build only what you need

- Off the shelf tech wherever possible (Final Cut Pro, video switchers, etc.)

- Simple website to upload content (videos, text bios, news, photos)

- Simple mobile app to view content, get live updates

- No chat, live stats integration, commenting, etc.
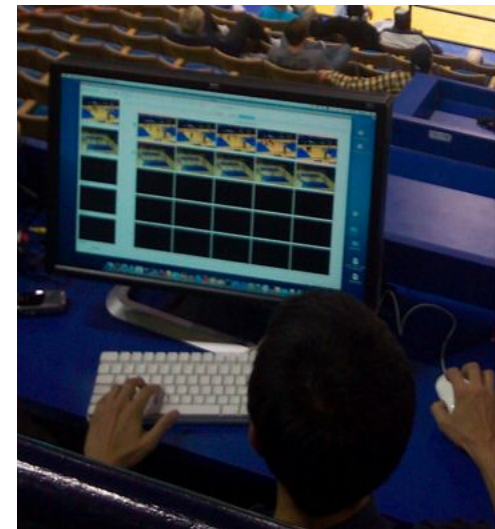
build the experience, not the tech

- Simple in-stadium server that could easily handle 100 users
- WiFi network in stadium, not 3G (no need to solve location-based access control issues)
- Used IP Multicast to deliver updated bundles (won't work on broader Internet)
- Video editing used existing tools (not quite fast enough but good enough)

build it sturdy (enough)

- Multicast message sent out repeatedly
- Client would periodically refresh content list
- Multiple wifi access points placed in stadium
- Used enterprise-class mobile devices (MC35)

mobile client
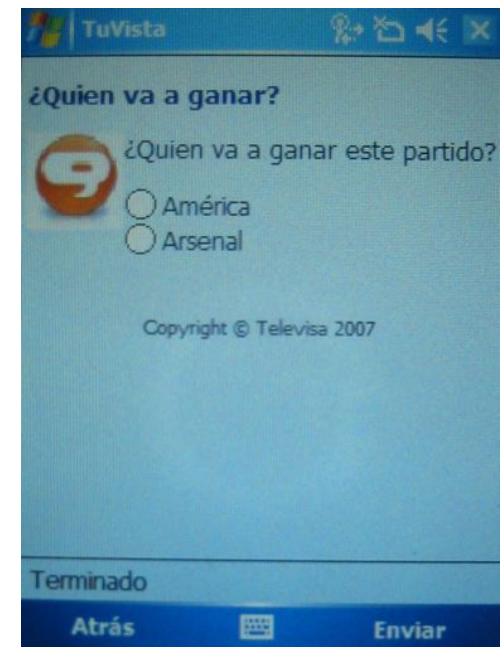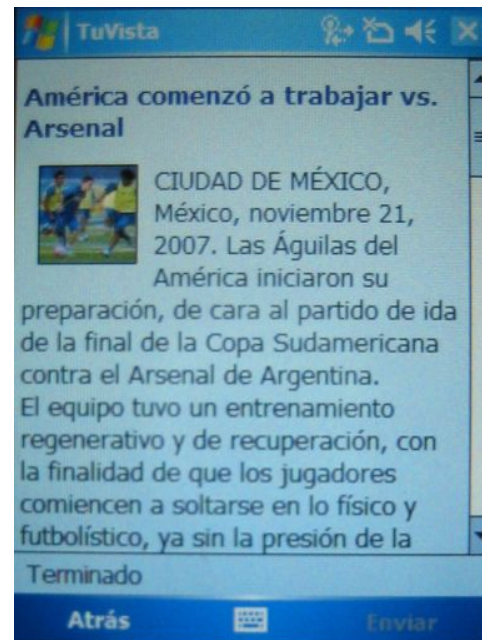
trial

- South-American Cup semi-final at Estadio Azteca

- Researchers produced content

- 60 fans using system
  - Recruited from fans in restaurant and luxury box areas
 - Used a loaned device throughout game
  - Short interview and questionnaire after the game
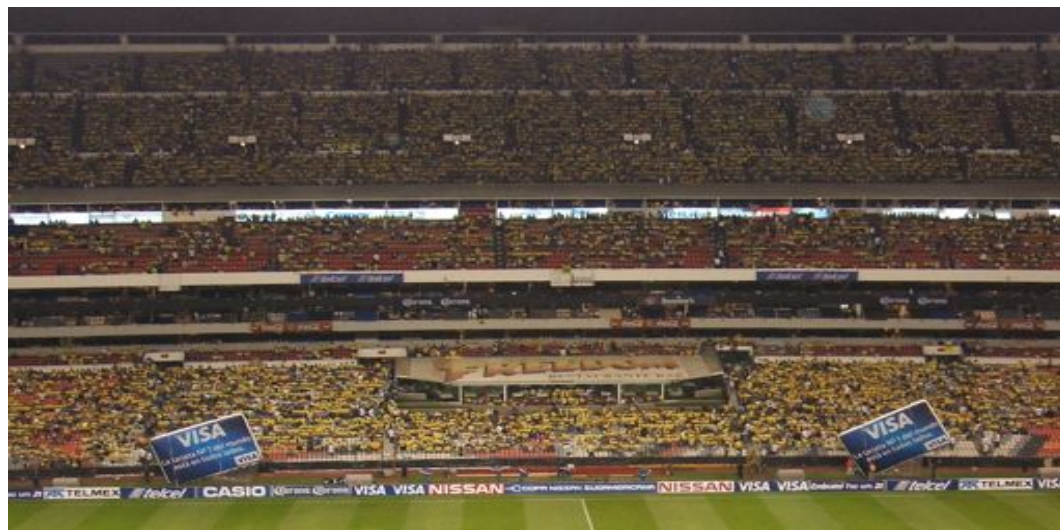
social groups for social tech

- Given to groups of friends in restaurant
- Given to fans in private boxes with friends / colleagues

real context of use / primary device

- Used during semi-finals of South America Cup game at Estadio Azteca

- Was not primary device (initially thinking of renting devices as model)

- Later trials were on fans' own smartphones
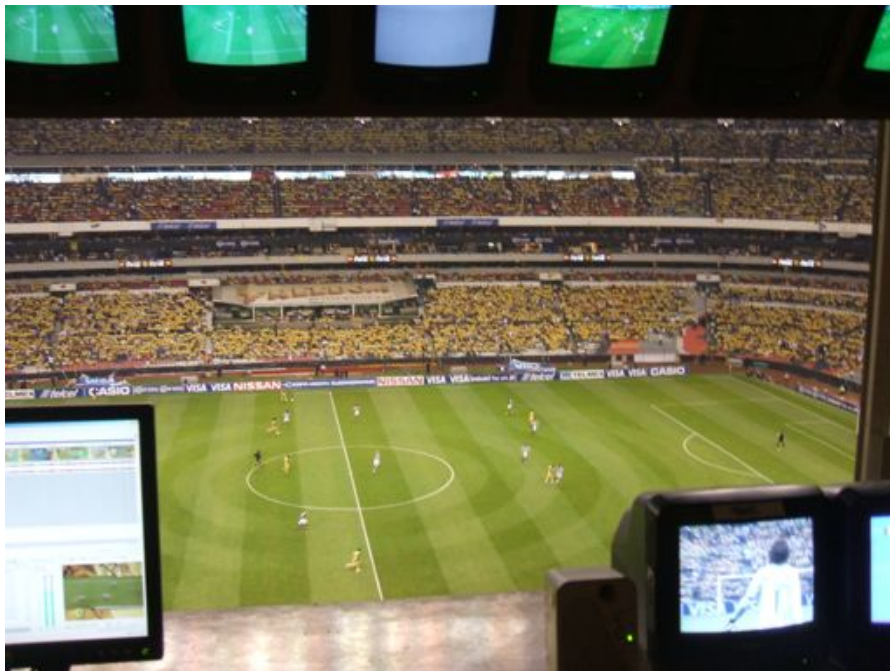
field-based data collection

- Observation during game
    - How and when use
    - With whom
- Interviews post-game
- Survey during game as a bundle
- Access logs from server for all user interaction with application

producing and consuming content

- Linear editing created bottleneck
- Views centered around breaks in the game, right

| Time of Action	Editing Time (mins)
21:11	8
21:16	8
21:33	7
21:37	9
21:39	17
22:16	8
22:18	14
22:20	17
22:26	23
22:34	18
22:55	36
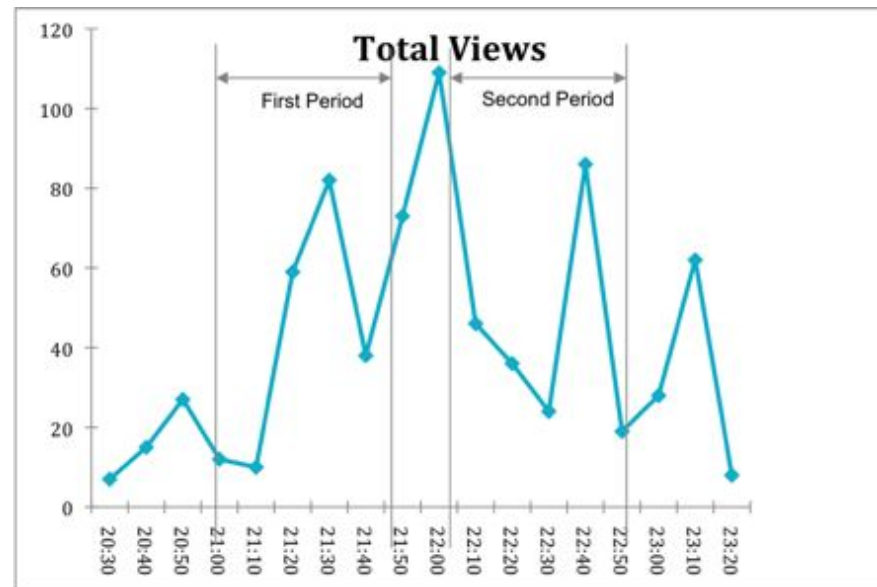
findings

- Video had to be produced much faster
- Multiple camera angles desired
- Commentary important
- Use was social in-person
- Most participants used other devices to capture photos/ video during game
- Overall concept very well received – move forward with feedback

TuVista Phase II

- Multiple camera angles
- Fast (< 30 second) video production flow
- Can mix in any audio source with video
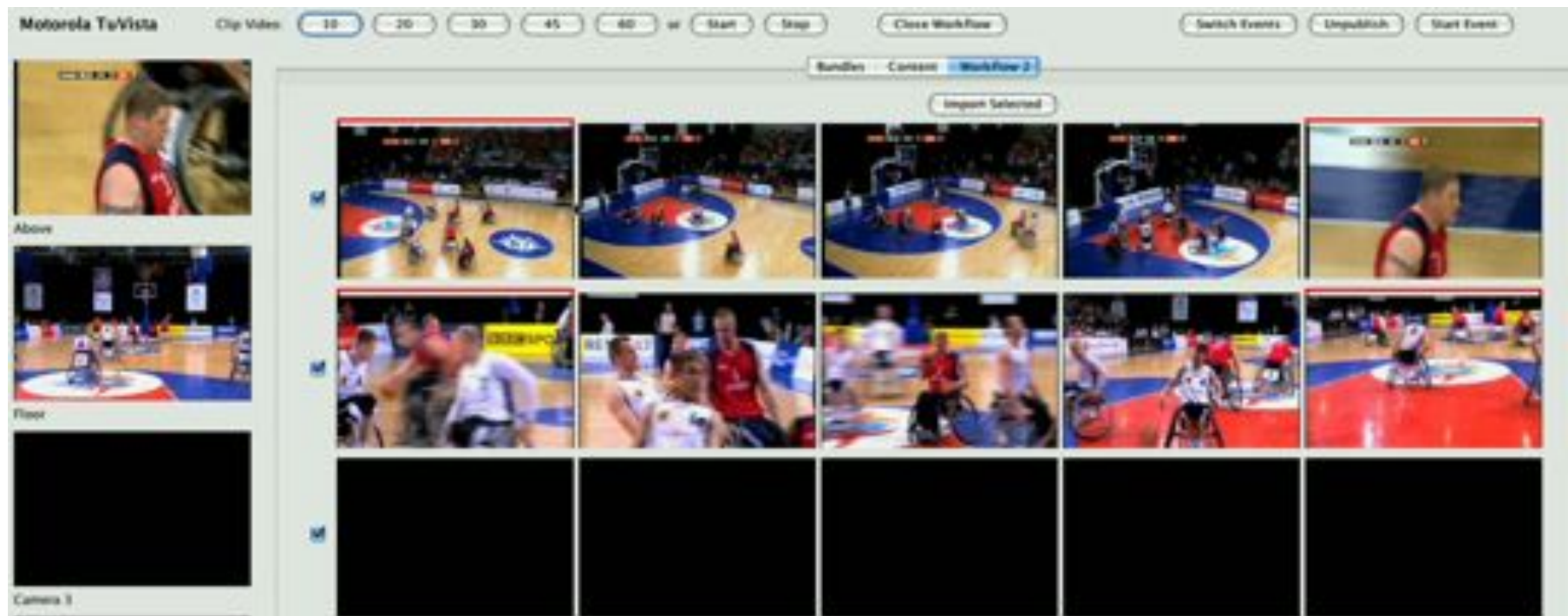
TuVista Phase II

- Multiple views into content
  - Timeline
 - Player
  - Video
  - User-Generated Content

example 2: Motion Presence

- How can we get benefits of sharing location without sharing location data?

- How will people use location-derived presence information in daily life?

- What are the major privacy concerns of sharing location-derived presence information?

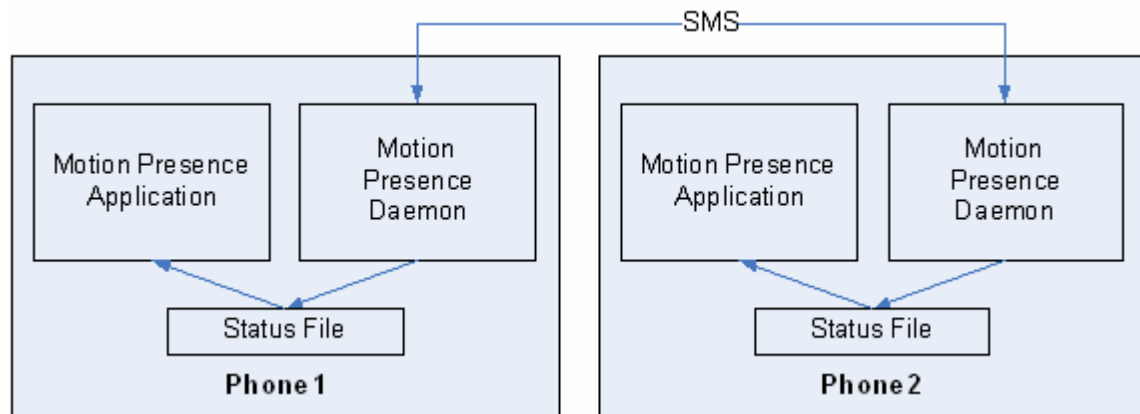- How accurate is motion information derived from cell tower ID changes?

first prototype

- Two screens
- Contact data read from file / not (user) editable

My Status

Friends
Status
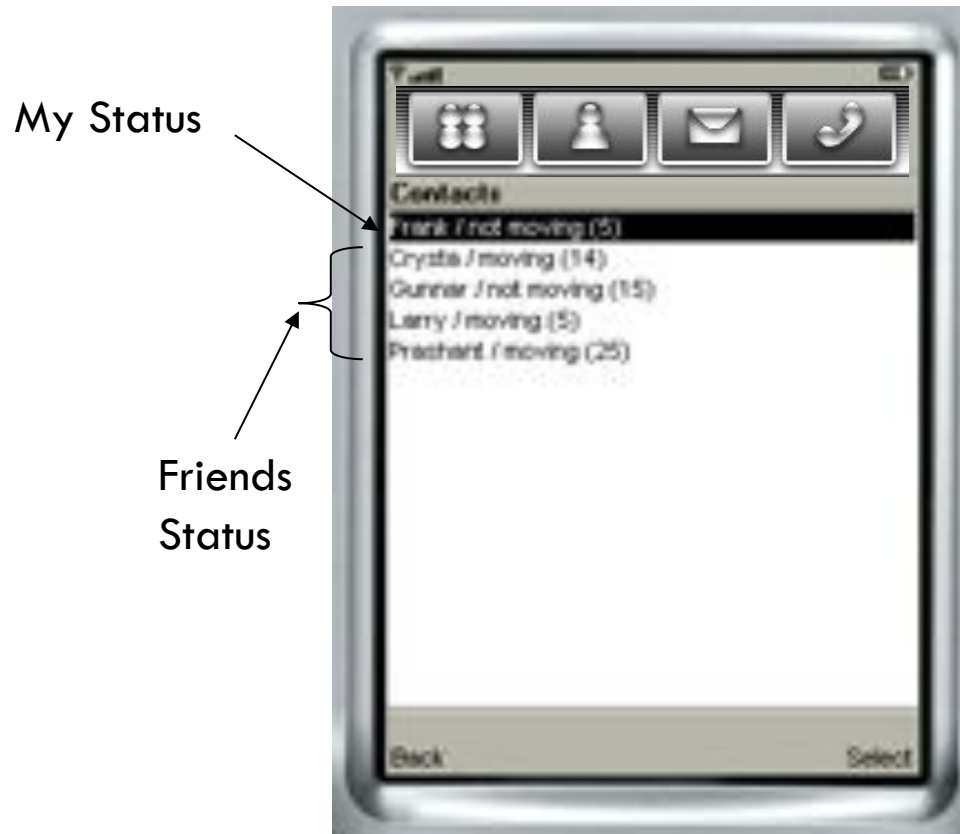
build only what you need

- No way for users to add/modify contacts

- No server (all P2P)
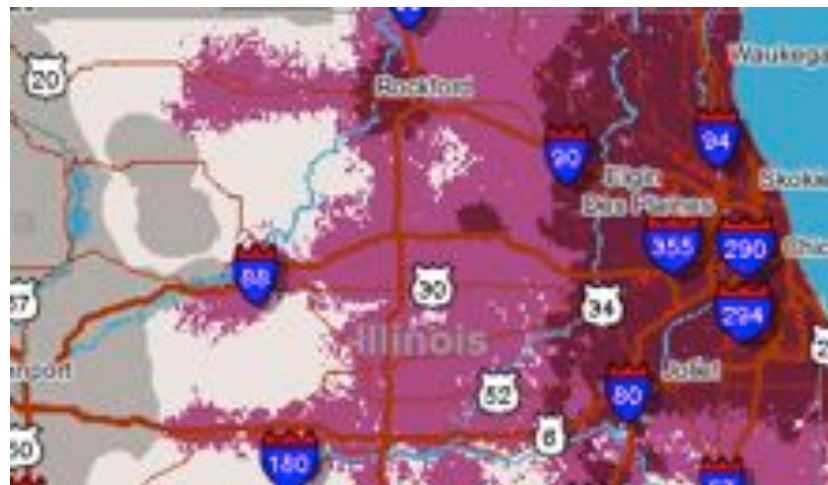
- No fancy graphics or images

- Just two screens

build the experience, not the tech

- Used SMS to send changes in motion state
  - Each user changed motion state ~15x/day
  - In a group of 4, this is 240 messages/day or 3,360/trial
- Phonebook app reads from a file, not from actual contact database
- Motion algorithm required processor to always be awake (and thus a LARGE battery)
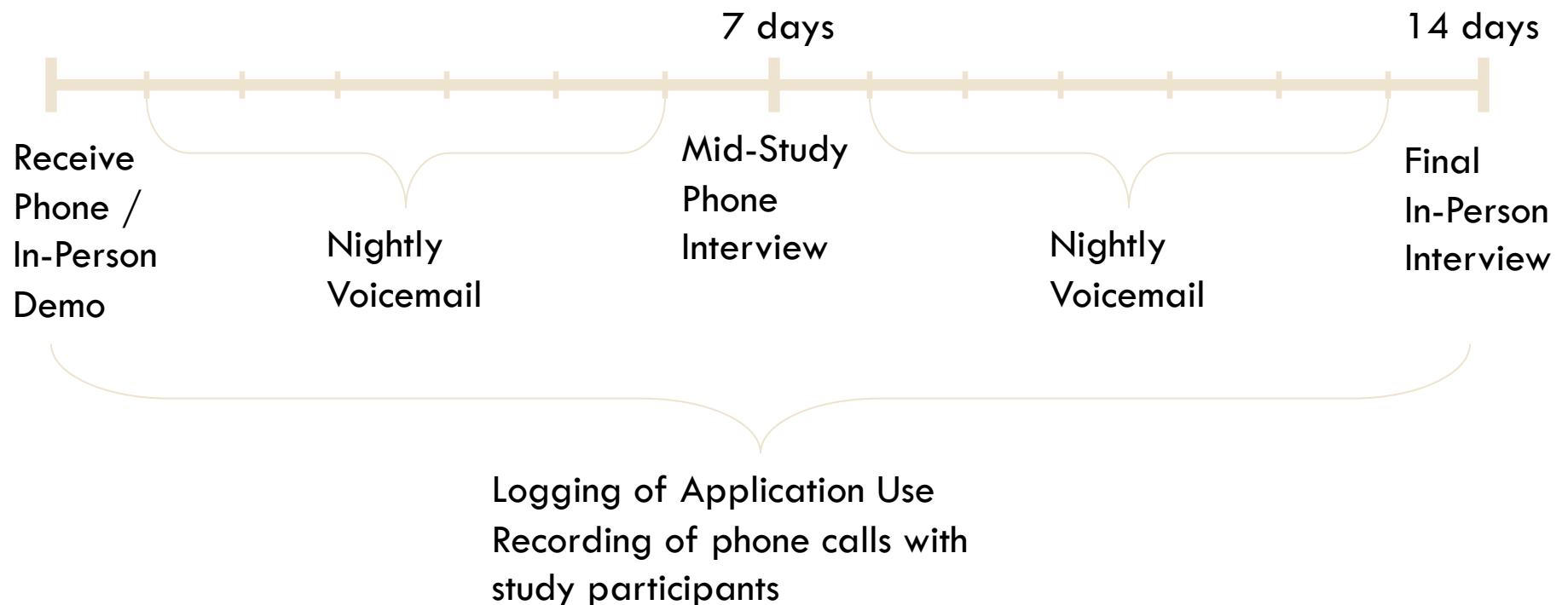
build it sturdy (enough)

- Motion background process had to handle going in and out of coverage (subway, elevators, etc.)

- Motion algorithm had to be right at least most of the time (few days of trial and error tweaking parameters)

  - Only a few reported cases of errors – large warehouse, stuck in really bad traffic

- Had to secure large battery so that it did not fall out (tape!)

coverage map from tmobile.com

methods

7 days

14 days

Receive
Phone /
In-Person
Demo

Nightly
Voicemail

Mid-Study
Phone
Interview

Nightly
Voicemail

Final
In-Person
Interview

Logging of Application Use
Recording of phone calls with
study participants

- Social Groups (3 couples, 1 group of 4 friends)
- Primary device for two weeks
- Used in daily life

social groups for social tech

Pseudonym	Age	Occupation	Gender
Alejandro	34	Mechanic	M
Beatriz	38	Admin. Assistant	F
Chris	40	Fundraiser	M
Dana	40	Interior Design	F
Ebony	46	Transportation Mgr	F
Farisa	47	HR Manager	F
George	23	Server	M
Harold	22	Loan Officer	M
Ian	23	Warehouse Profiler	M
James	23	Credit Analyst	M

real context of use / primary device

- Used in their lives for 14 days
- Transferred contacts and SIM card to new phone for duration of study
- Used at work, home, vacation, business trips, parties, out in the city

field-based data collection

- All interactions with application were logged
  - Open/Close
  - Click on a contact
  - Initiate phone call / text message
- All changes in motion state logged for all participants
- Participants recorded phone calls with study participants
- Participants left nightly voicemails about their use

learnings

- Participants used motion information in unexpected ways:
  - Get more time at current activity
  - Reach a destination at the same time
  - Know if someone was busy to take a phone call
  - Know that someone was safe at work
  - See if a spouse had stopped at the grocery on the way home
  - Feel connected to lives of close friends and family
- Used multiple times a day and not just when about to call someone
- Algorithm worked!
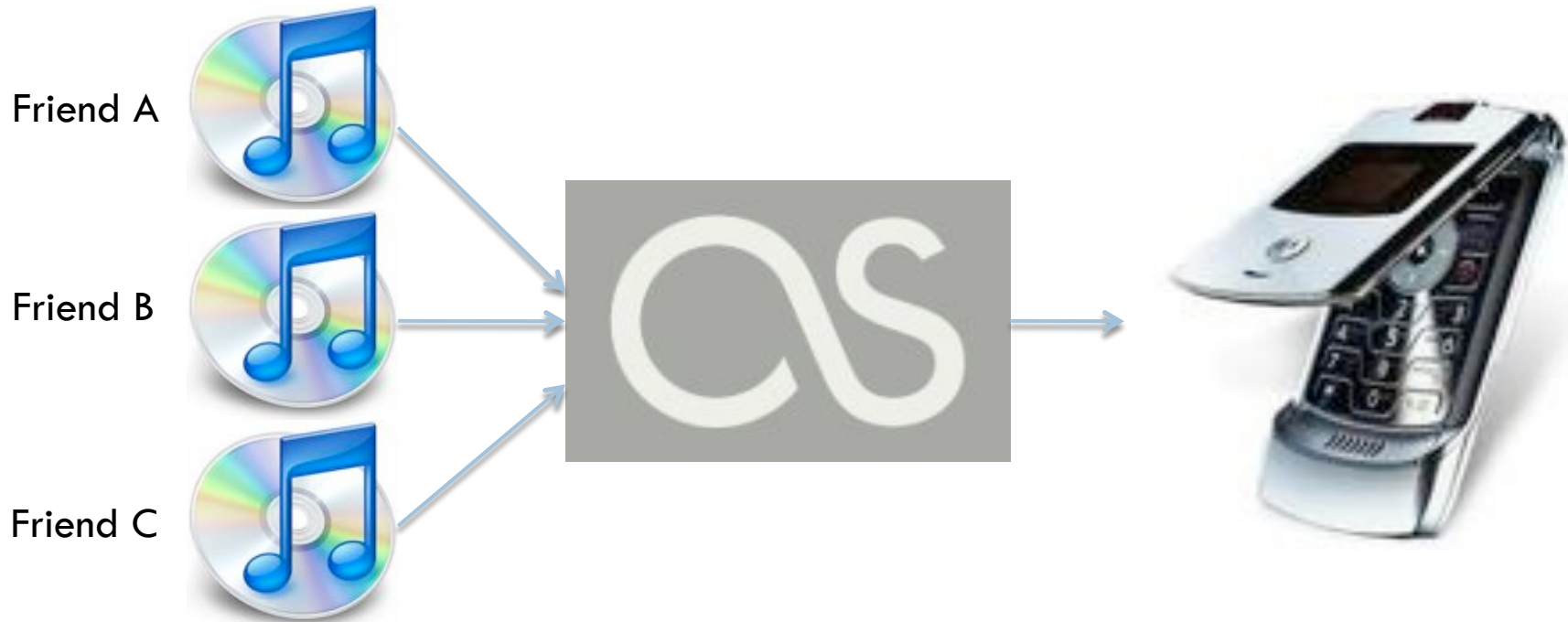- Power of mobile context in phone book

MotoBLUR

- presence in augmented phonebook

example 3: Music Presence

□ How would people use knowledge of what friends are listening to if received on their mobile devices?

Friend A

Friend B

Friend C

first prototype

build only what you need

- Nothing implemented on the phone
  - Used existing SMS inbox
  - Used existing SMS notifications (could apply different ringtone to messages from automated sender)
- Used existing Audioscrobbler (later last.fm) service
- few hours of implementation

build the experience, not the tech

- SMS sent to entire friend group every time you play a song (300 songs played in 5 days = 900 text messages)

- Server polled audioscrobbler APIs every 3 minutes to see if new music was played
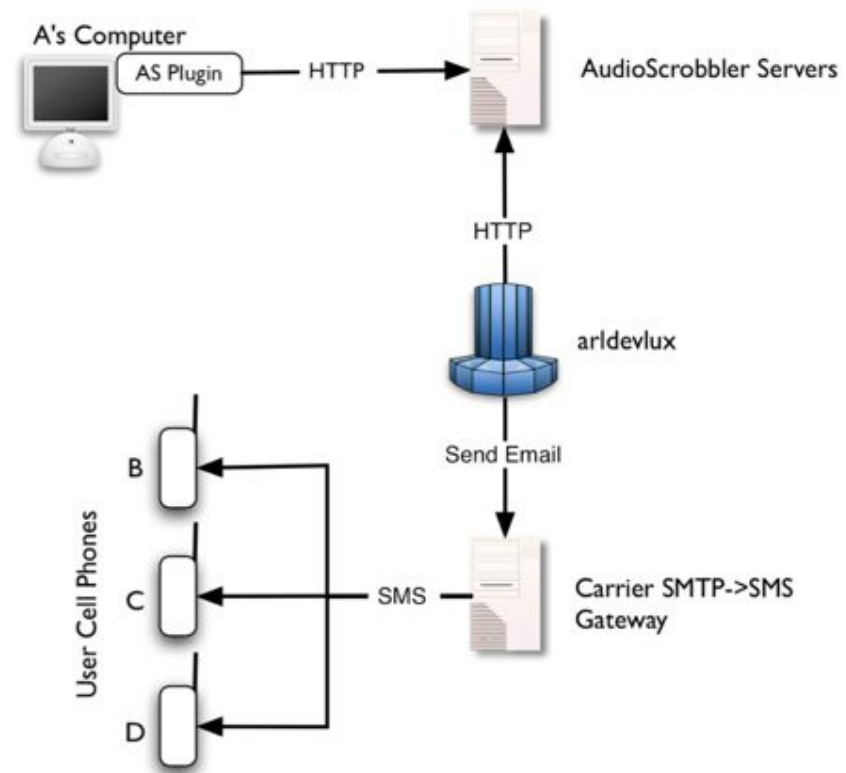
build it sturdy (enough)

- Used existing SMS infrastructure for messaging (no need to rely on unreliable persistent connections)

- Used audioscrobbler service which was (mostly) reliable

social groups for social tech

Abigail
Backstreet Boys
Michelle Branch
Blessid Union of Souls

Bianca
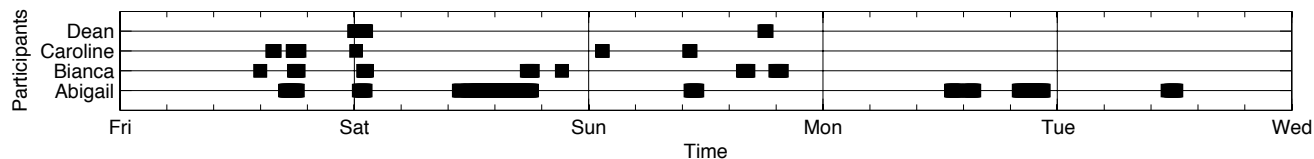Beck
The Sea and Cake
The Arcade Fire

Caroline
The Beatles
Dispatch
Grateful Dead

Dean
Aloha
Saturday Looks Good To Me
The Silver Mount Zion Orchestra
& Tra La La Band

real context of use / primary device

- Used for music played on their personal computers
- Data about friends' music sent to their regular cell phone

field-based data collection

- Nightly voicemails
- In-home interviews at beginning and end
- Logs of all music played

Dean: "So when I see what Abigail listens to I think about junior high and how she's always so upbeat most of the time and she dances and does all this fun stuff."

Bianca: "[I'm] bored because nobody could go out and do things this weekend, so there's nothing for me to do now. But maybe if someone is listening to music I'll know they're home. … I was thinking if maybe they played music, I could call them because I know they'd be home."

learnings

- need for lightweight communication
  - thumbs up
  - thumbs down
  - exclamation point
- lightweight communication can escalate into richer communication types
- presence and mood can be inferred from music choice
  - home + playing music on friday night = bored, available
- rich communication through music choice
  - played songs with her name in them
  - played songs given to her by a friend

second iteration

- J2ME app
- Created in 2 weeks
- Consolidated presence info
- Lightweight communication added (thumbs up, down, !)
- Used HTTP polling for content delivery

stop and learn from the world

- Field studies are the best way to learn about use in context

- You don't have to wait for a final system to take something in the field

- The earlier you get data, the easier it is to change course

http://www.flickr.com/photos/jasonbachman/4177519542/

reflections

- Use of social / contextual systems in the world is often different than you would imagine

- Findings from a quick field study can inspire powerful, new concepts

- You can learn a lot from a prototype that does a little
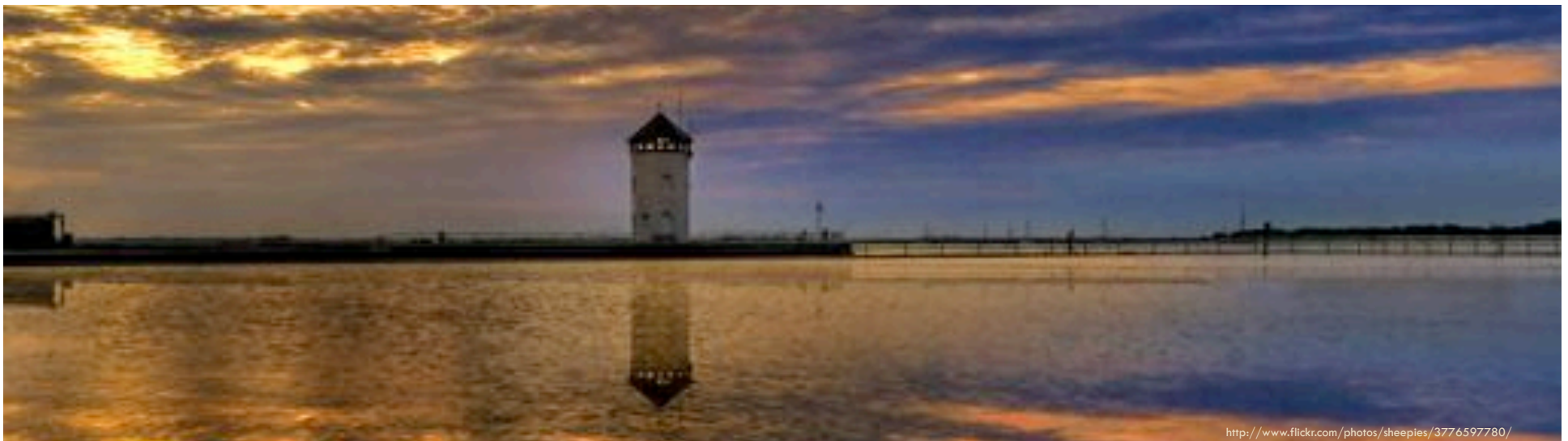
guidelines

building

1. build only what you need

2. build the experience, not the technology

3. build it sturdy (enough)

testing

1. social groups for social technologies

2. real contexts of use

3. primary device

4. field-based data collection

Thanks to collaborators:
TuVista – Mike Groble
Motion Presence – Crysta Metcalf
Music Presence – Drew Harry

Questions on methods…

- Diary Logging
- Instrumentation
- Contextual Inquiry
- Experience Sampling
- Interviews
- Others…

How to test your apps?

- Who would you want to use it?

- For how long? Where?

- What methods would you use to collect data?
  - Diary Logging
  - Instrumentation
  - Contextual Inquiry
  - Experience Sampling
  - Interviews

- Take 10-15 min to make rough plans

Next steps…

- Get your applications to a point where they can be tested (ideally by Patriot's Day)

- If you are using iPhone, post your UDIDs on the class wiki immediately, generate certificates that work with all UDIDs in the class

- Use class wiki to post applications by next Wednesday

- Speak to target population and get them the app / study instructions by next Friday

- Gather data until final presentations / improve app