INF385T - 27775
SPECIAL TOPICS IN INFORMATION SCIENCE
Introduction to Mobile Information and Communication Technologies
Term: Fall 2018
Instructor: Dr. Amelia Acker
Contact: aacker@ischool.utexas.edu
Course: Tuesdays, 9:00 am – 12:00 pm
Location: UTA 1.502
Office Hours: TBD
Location: UTA 5.434

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1. Course Overview

This course introduces students to the landscape of mobile information and communication technologies—their history, present, and future. It will examine the social and technical history of mobile communication and information technologies, defined as any system designed to gather, process, or distribute information through network architecture. Given this broad definition, we will consider a wide range of mobile ICTs: from mobile phones, to mobile app platforms, to location standards, to cryptocurrency protocols. How are mobile technologies different from other personal and large-scale computing systems? How do the affordances of mobile ICTs shape society? How do mobile devices shape relationships to the past and the future? How do mobile ICTs shift the ways we communicate, respond to crises, and create cultural memory? How do mobile devices currently figure into information institutions, such as libraries, museums, and archives? How does the incorporation of mobile ICTs shift, complicate, or transform the traditional services that these information institutions provide? What are the current trends in mobile app ecosystems, how will they change, and how can information institutions adapt to these shifts? By the end of the course, students will be familiar with the history of mobile ideas, the affordances of second and third generation mobile networks (2G, 3G, 4G, LTE), and the social and political debates surrounding the shifts from mobile telephony to mobile computing, including media created and transmitted with mobile devices and mobile information systems. One goal is for participants to acquire the investigative skills necessary to assess how technological innovations such as mobility affect the world—creating new opportunities and ethical dilemmas. Another goal is to learn about the history and standardization of mobile technologies in the US and throughout the world. A third goal is to expose participants to the landscape and variety of different mobile apps, tools, and SMS gateways that are currently employed by libraries, archives, and museums to provide access to their collections.

Given the broadness of the topic, the course is loosely structured around seven themes: 1.) The history of mobility and "the cellular idea," 2.) Relationships and communication, 3.) Digital currency and attendant tools, markets, value and exchange, 4.) The transformation of place and space, 5.) Storytelling

and producing media, 6.) Crises and development, 7.) Collections, storage and memory. While neither historically nor thematically exhaustive, these themes capture significant horizons in the history of mobile ICTs, both in terms of technical innovation and social change in society. We will be especially concerned with how information professionals and information institutions figure into these themes, and how our roles may change. While it is usual to cast a distinction between technical and social dimensions when discussing technology, in this course we consider technological innovation as a complex process involving not only technical objects, but also people, ideas, organization, social coordination, money, politics, and culture. Because history is always produced and represented, the term project will involve participants creating a museum artifact dealing with some theme from the course. Choosing a mobile thing (tool, protocol, app, device) and electing it for preservation and access in a museum environment enables participants to simultaneously research the history of a certain mobile ICT, to build upon its development as cultural evidence, and to develop a sensibility for the way technical and social history is produced and communicated, as well as craft an argument for how this technology will be perceived, represented, displayed and accessed in the future in an information institution.

Each week will require write-ups that synthesize the week's ideas into your final project idea or your individual tool evaluation. You will be able to build off each week's assignments and incorporate it into your team's final project report. Throughout the course, students will evaluate current mobile apps that are used in libraries, museums, archives, or other information institutions and present their evaluations to the class. These tools range from text message reference, to digitized documents, to virtual tours that make use of GPS, to m-libraries. A list will be provided on the first day of class, students will select apps to evaluate in advance, and we will schedule in-class presentations over the course of the term. The final project is to design, as a team, a mobile artifact elected for preservation that addresses some aspect of mobility (value and exchange, location, storytelling, collections and memory) covered in the course.

2. Course Objectives

The approach of this course is to expose participants to a range of mobile technologies that currently shape and have a history of shaping our everyday lives. The student will expand her knowledge base about the history of mobility and network architecture, develop critical skills in applying it to mobile ICTs, and by the end of the course:

- You should learn historical facts about mobile ICTs that allow you to understand how technological innovation is a complex process involving people, ideas, social coordination, money, and culture.
- You will be familiar with the fundamental approaches, debates and themes of mobile ICTs over the twentieth century and the beginning of the twenty-first century, including how mobile tools currently figure into information institutions.
- You will have evaluated a variety of mobile application tools that are currently used in information institutions (libraries, archives, museums, community organizations) to provide access to collections, information, or connect communities.

- You will learn concepts and methods that allow you to conduct an historical analysis, to use history to evaluate future possibilities for the accessibility of mobile ICTs including material culture.
- You should learn to write clearly and concisely about complex social and technological phenomena.
- You will contribute substantially to a team project that will build your communication, leadership, public speaking, and project management skills.

3. Methods

Each week we shall discuss a small set of readings, all of which are required. It is important that everyone comes to class well prepared and having read the material ready to discuss the week's readings. After discussing the readings, 2-3 students will present their evaluations of a mobile app or tool that is used in libraries, museums, archives, or community information organizations. We will have a group discussion after the presentations to discuss the use, need, and future possibilities of these tools. Course participants are expected to be involved in these group discussions. A portion of your grade will be based on your preparation for and participation in the class discussions.

4. Grading, formatting, assignment expectations

Grade evaluation* for the course will be based on the following percentages:

- Class attendance, preparation and participation in discussion: 25%

- Mobile app evaluation, class presentation: 10%

- Class discussion leader (two days): 15%

- Term paper, rough draft: 10%
  - Due TBD

- Term project, final report and presentation (TBN): 40%
  - Due TBD

Formatting rough drafts and reports
Your first and last name, Name of Instructor, Kind of assignment ("Rough draft", "Final Draft"), and date should appear in the top left corner of the first page (single spaced). The body of assignment the should be double-spaced, in Times New Roman font, 12 point font, stapled or paper clipped in the top left corner. Use APA or MLA depending on your discipline's citation style. Term projects (rough draft, final draft) should be submitted through CANVAS course website and the file name of the document should read, "INF285T_LASTNAME_ROUGHDRAFT".

Mobile app evaluation

Participants will choose a mobile app, tool, or sms service that they would like to evaluate and present to the class. Your evaluation should describe the nature of the tool, the mobile operating systems that it is or is not compatible with, the typical user and host of the tool, and the general experience that users report in online feedback. You will "dogfood" the app by using it yourself and testing it out on your personal mobile device. As an information professional, you will build on skills and principles that you have been exposed to in other courses in the program to evaluate the user interface, the information provided, the experience of accessing that information (from ease of use to the quality of information accessed). In addition to using the mobile app yourself, you should also do online research about its developers, its costs to institutions, its versioning, upkeep and community development support, as well as the rates of use. The class presentation should be between 5-7 minutes, you can create a powerpoint, or demo the app with a projector, or simply describe it verbally. Be creative in describing this app to course participants, know the pros and cons, imagine different scenarios of use. You should be prepared to field questions from your classmates and provide an opinion about what institutions should provide a tool like this, and what kinds of users would benefit from using it. Credit will be awarded based on your presentation style and your knowledge of the tool.

If you do not have access to a featurephone, smart phone or tablet to download an app for evaluation, the instructor will provide a sandbox phone for you to test and evaluate the tool with. Please contact the instructor to set up a time for an independent sandbox session.

Final term project

Participants in the course will be asked to directly experiment with the production of collective memory, by choosing an artifact of mobile ICTs (ranging from mobile apps, to network protocol, to digital currency, etc.) and developing a report for why this artifact should be preserved as a museum artifact within exhibition dealing with the history and present of mobile ICTs. The artifact may consist of device hardware, software, standards, protocol, or mobile operating system (or any combination), piece of infrastructure, or any element playing a significant role in the development of mobile ICTs. The artifact may use any of the representation techniques used in a museum setting: material, photographic, multimedia, film, sound recording, or any combination of these mediums.

In addition to the design and/or construction of the artifact, participants will write a report justifying and explaining the theoretical choices made. A portion of the grade will be given over to the production of the artifact and exhibition itself, and the rest of the credit will cover the report. Participants will produce an interim report to indicate their choices and the evolution of the project. Participants will thus both research the historical background of a given technology, but also experiment with the ways history itself is produced, and represented. Credit will be awarded for creativity, originality, insightfulness, accuracy, and comprehensiveness.

The first rough draft on TBD** . It should be a 10-page (2,500 word) document that identifies your artifact, what it signifies to the development of mobile infrastructure, and the history of its development and use. The document should report on the social and technical dimensions of this thing and how it

shapes the ways we communicate, organize, and solve information problems. This first report should rely on scholarly, primary, and popular sources to support your claims. As a group, you may choose to use portions of your weekly write-ups in this first report.

The final report is due TBD . It should incorporate comments from the first report and include a new section on the artifact's exhibition in a museum space. This section should describe the museum audience/participant's encounter with the exhibit and what they are likely to learn as they move through the space. The exhibition should include layout, artifact description, materials that would appear next to or near the display. If museum participants are encouraged to use their own devices to experience or interact with the exhibit, detailed descriptions of how this interaction should be provided (e.g. make use of your mobile app evaluations).

The in-class presentation on the final day of class will be a 5-7 minute overview of your term project. You should (as a team) communicate the highlights of your final report and museum exhibition in an engaging and thought-provoking matter. A few minutes at the end of presentations will be reserved for feedback and critique.

5. Required texts

Agar, J. (2013). *Constant touch: A global history of the mobile phone*. Icon Books.

Additional PDFs will be made available on the course website.

6. Course schedule, assigned readings

- All assigned readings are subject to change and updates. I will notify you if they change a week in advance and I will update the course's Canvas website to reflect changes.

Week 1. Introduction to Mobile ICTs

Introduction to the course. What are mobile ICTs? What aren't mobile ICTs? What are mobile networks?
- Negotiate grading contract
- Sign up for mobile app evaluation and presentation dates

Week 2. The Cellular Idea

The history of mobile communication was imagined in science fiction and popular culture before the possibility for it to exist. This week will look at predictions and the principles that make mobile network coverage possible.

Required readings:
Agar, J. (2013). *Constant touch: A global history of the mobile phone*. Icon Books.

Wythoff, G. (2013). Pocket Wireless and the Shape of Media to Come, 1899–1922. *Grey Room*, (51), 40-63.

Week 3. Personal Relationships and Mobile Communication

Mobile ICTs have transformed personal relationships with voice calls, texting, and apps. How do we see this in our lives? How have different demographics of people confronted and adopted these tools? Specifically, we examine texting and young people, the moral panic of text speak, and breaking up over new media. This week bring a reflection that signifies a change in how you relate to people in intimate relationships because of mobile technologies.

- You can't text message break up: reflections on personal relationships.
- Mobile App Evaluation presentations

Required readings:
Gershon, I. (2010). Selected chapters. *The breakup 2.0: Disconnecting over new media*. Ithaca, NY: Cornell University Press.

Wright, K. B., & Webb, L. M. (Eds.). (2011). Selected chapters. *Computer-mediated communication in personal relationships*. Peter Lang.

Week 4. Organizational and Community Relationships

Mobile communication has transformed how businesses and institutions communicate. In an information economy, workers are expected to carry mobile phones, but also communicate with their supervisors, and co-workers with them. What happens when our personal mobile devices become professional work-tools? What happens when we use them to organize ourselves? This week, bring an experience to class that reflects the nature of being a worker or student with mobile technologies.

- Reflections as workers, students, and information professionals with mobile phones
- Mobile App Evaluation presentations

Required readings:
Castells, M., Fernandez-Ardevol, M., Linchuan, Qiu, J., & Sey, A. (2006). Selected Chapters. Mobile Communication and Society: A Global Perspective (Information Revolution & Global Politics).

Katz, J. E. (Ed.). (2011). "Can you take it with you? Mobility, ICTs and Work-Life Balance" in *Mobile communication: dimensions of social policy* (Vol. 1). Transaction Books.

Thorson, K., Driscoll, K., Ekdale, B., Edgerly, S., Thompson, L. G., Schrock, A., ... & Wells, C. (2013). YouTube, Twitter and the Occupy Movement: Connecting content and circulation practices. *Information, Communication & Society*, *16*(3), 421-451.

Weeks 5. THEME/Readings TBD

Weeks 6. The transformation of place and space.

How do mobile ICTs change social expectations of place and space? These weeks cover regulatory landscapes (laws and policy) that change what we can do in certain places with mobile tools. How are mobile infrastructures bootstrapped or incommensurate with other/older information infrastructures? This week, reflect on important places that have significantly changed for you because of mobile network infrastructure.

- Reflections on places that have been recently transformed.
- Mobile App Evaluation presentations

Farman, J. (2010). Mapping the digital empire: Google Earth and the process of postmodern cartography. *new media & society*, *12*(6), 869-888.

Kleinman, S. (Ed.). (2007). Selected chapters. *Displacing place: Mobile communication in the twenty-first century* (Vol. 42). Peter Lang.

Weeks 7. Storytelling and producing media

How have mobile ICTs changed storytelling and the production of media? For example, how do television and film incorporate mobile devices as plot functions? How have video enabled phones transformed the way we capture real-time events, protest, organize? Cell phone video has rapidly brought police brutality and the black lives matter movement to the American public consciousness. This week bring a reflection to class that speaks to a (cell phone) documented event that has changed your relationship to the state or another cultural institution.

- Reflections on documenting the violence of the state.
- Mobile App Evaluation presentations

Farman, J. (Ed.). (2013). Selected Chapters. *Digital Storytelling and Mobile Media: Narrative Practices with Locative Technologies*. Routledge.

Jill Walker Rettberg . (October 2014). Automated Diaries . In *Seeing Ourselves Through Technology* . (pp.45–60). Retrieved from http://www.palgraveconnect.com/pc/doifinder/10.1057/9781137476661.0006

Week 8. Crisis and disaster

Mobile networks have changed the way the world responds to crises and disasters. How are mobile ICTs being enrolled in crisis and disaster planning? What have we learned from mobile networks during disasters? This week, bring a reflection about phones in crises.

- Reflections on crises, danger, the power and limits of mobile technology.
- Mobile App Evaluation presentations

Palen, L., & Liu, S. B. (2007, April). Citizen communications in crisis: anticipating a future of ICT-supported public participation. In *Proceedings of the SIGCHI conference on Human factors in computing systems* (pp. 727-736). ACM.

Abramson, D. M., & Redlener, I. E. (2013). Hurricane Sandy: lessons learned, again. *Disaster medicine and public health preparedness*, *6*(4), 328-329.

Bengtsson, L., Lu, X., Thorson, A., Garfield, R., & von Schreeb, J. (2011). Improved response to disasters and outbreaks by tracking population movements with mobile phone network data: a post-earthquake geospatial study in Haiti. *PLoS medicine*, *8*(8), e1001083.

Week 10. Digital currency, tools and markets.

How are mobile devices changing how we understand money, value, payment and exchange? This week covers the history and present of payment systems that make use of mobile devices, apps, protocols and standards. Try and buy a good or service with a mobile payment platform (apple pay, google wallet, uber, venmo).
- Reflections on buying things with mobile payment systems
- Mobile App Evaluation presentations

Required readings/Listening:
Jack, W., & Suri, T. (2011). *Mobile money: the economics of M-PESA* (No. w16721). National Bureau of Economic Research.

Kendall, J., Maurer, B., Machoka, P., & Veniard, C. (2011). An emerging platform: From money transfer system to mobile money ecosystem. *Innovations*, *6*(4), 49-64.

Alex Goldman and P.J. Vogt (2014) Reply All podcast, #4 Follow the Money. Retrieved from: http://gimletmedia.com/episode/4-follow-the-money/

Assignment due: Take this week to work and finalize your rough draft, due on March 17 and 11:59 pm EST to the instructor's email address at aacker@pitt.edu. *

Week 11. Development with Mobile ICTs (ICT4D)

Many aid and development organizations argue that mobile ICTs will transform the way we address developing countries. The Human Development Index uses access to mobile phones as a marker of progress. What's at stake when we tie development to the use of mobile phones? How are mobile ICTs used in social, regional, and economic development? This week, bring reflections on how mobile technology and platforms have raised your consciousness about developing countries and the global south.

- Reflections on our relationship to the developing world.
- Group break out for final presentation preparation

Kleine, D. (2013). "Chapter 1 Moving ICT4D toward People, Toward Choice," *Technologies of Choice?: ICTs, Development, and the Capabilities Approach*. MIT Press.

Williams, M. D., Mayer, R., & Minges, M. (Eds.). (2011). *Africa's ICT infrastructure: building on the mobile revolution*. World Bank-free PDF.

Week 12. March 31, 2016. Storage and Memory > READINGS TBA

Storage and memory have a significant impact on the digital traces we create with mobile devices. In the US, Americans acquire new mobile devices every 2 years. We are acquiring and creating e-waste at a staggering rate with our mobile devices and computing technologies. Mobile operating systems also make it difficult for users to back up or create copies of the media they create with their mobile devices. Many of our traces are stored "in the cloud" or are platformed in social networking sites. What's at stake with the future history of mobile traces created with Mobile ICTs? how should information and communication professionals confront the possibilities for collecting, preserving or providing access to these traces in the present and future?

Week 13. Data traces, Surveillance and Collections

How are mobile traces conceived, created and collected? Why does this matter to information professionals, historians, or lawyers? What are the infrastructures, systems, and plans needed to create collections of the mobile traces that users create? What are the surveillance and corporate contexts?

Caswell, M. (2009). Instant documentation: cell-phone-generated records in the archives. *American Archivist*, *72*(1), 133-145.

Shilton, K. (2009). Four billion little brothers?: Privacy, mobile phones, and ubiquitous data collection. *Communications of the ACM*, *52*(11), 48-53.

Jill Walker Rettberg . (October 2014). Privacy and Surveillance. In *Seeing Ourselves Through Technology* . (pp.79–88). Retrieved from http://www.palgraveconnect.com/pc/doifinder/10.1057/9781137476661.0008

Week 14. April 14, 2016. Sounds/Haptics/Phantom Ring > READINGS TBA

Week 15. April 21, 2016. Wild Card > READINGS TBA