TimeOut

Influence of user experience design on behavior to reduce smartphone use

Tejal Sampat

Thesis Proposal for the Masters of Fine Arts Degree

Rochester Institute of Technology
School of Design
MFA Visual Communication Design

Title

TimeOut: Influence of user experience design on behavior to reduce smartphone use

Submitted by

Tejal Sampat
Oct 28th, 2014

Approvals

Chief Advisor Date

Chris Jackson
School of Design

Associate Advisor Date

Shaun Foster
School of Design

Associate Advisor Date

Nancy Ciolek
School of Design

Associate Advisor Date

Evan Selinger
Department of Philosophy

Abstract

We are more connected than we used to be but people are becoming disengaged from the real world. Are smartphones a blessing or a bane? That depends on how we use it. Being hooked to a smartphone while interacting with family or friends is a definite no-no.

To address this issue, I propose designing an application that allows neglected users to send anonymous nudges to obsessive smartphone user that are preoccupied with their smartphones and are in their close proximity. This allows them to express their feelings without upsetting or embarrassing anyone. The application will leverage lean UX methodologies to quantify smartphone usage to make people aware of their distractive behavior. The goal of the application is to influence behavior through nudges, prompts and challenge the users in making positive behavioral changes.

Keywords: user experience design, nudges and prompts in design, human-computer interaction, reduce smartphone use, information design, icon design, mobile application, iOS

Situation Analysis

In today's fast-paced world, most of us and especially the younger generation are hooked to their smartphones. Many check their phones even before getting out of bed each morning. Throughout the day, people constantly check e-mails, browse the Internet, make calls, send texts, play games, listen to music and take pictures. We are so reliant on our smartphones that we cannot imagine stepping out without it.

Although, smartphones provide many benefits like connectivity, social media, navigation and gaming; habit-driven interactions can distract, interrupt and disconnect one from their surroundings. People ignore the norms of the current social situation and this adversely affects their conduct around other people (For eg. checking their phones at parties or meetings, while others are trying to have to conversation). As research shows, using a cell phone in a social scenario is a contagious behavior and may sway a person nearby to use his or her cell phone.[1]

Can user-centric research be integrated into a mobile application to influence young adults to limit their smartphone usage in social gatherings and situations?

(1) Cell Phone Use Is Contagious, Study Shows. http://www.huffingtonpost. com/2012/12/04/cell-phone-contagious_n_2237628.html

Problem Statement

Can user-centric research be integrated into a mobile application to influence young adults to limit their smartphone usage in social gatherings and situations?

User-centered design allows designers to create experiences based on a detailed understanding of user needs through observation. It takes into account various dimensions of an individual's experience, which include emotional needs and motivation. Using this approach, I would like to reduce an individual's smartphone usage in social situations.

I propose designing and prototyping an iOS app that explores ways to reduce smartphone usage via user and device initiated nudges, prompts and challenges. This app will be designed for a particular demography, young adults between the age of 18 to 24 years.

My research aims to answer the following questions:

- Can information and UI/UX design influence social behavior and impact smartphone usage?
- Can user initiated nudges be designed visually to make obsessive smartphone users aware of their distractive social behavior?
- Impact of icons and emojis in such an application?
- Can this objective be achieved with limited interactions in the app?

Survey of Literature

Design

Lean UX: Applying Lean Principles to Improve User Experience

In this book, author Jeff Gothelf discusses different UX principles involved in enhancing user experience. He gives insights on prototyping, validating and testing with user and making changes based on your learnings.

Author: Jeff Gothelf
Date: March 2013
Title: Lean UX: Applying Lean Principles to Improve User Experience

Designing with the Mind in Mind: Simple Guide to Understanding User Interface Design Rules

In Designing with the Mind in Mind, a Simple Guide to Understanding User Interface Design Guidelines, author and UI expert Jeff Johnson provides a captivating introduction to the fundamentals of perceptual and cognitive psychology for effective user interface (UI) design and creation.

Author: Jeff Johnson
Date: February 2014
Title: Designing with the Mind in Mind: Simple Guide to Understanding User Interface Design Rules

Designing Information: Human Factors and Common Sense in Information Design

Author Joel Katz discusses various aspects of user-interface design and architecture. He discusses methodologies to design complex data and information for meaning, relevance, and clarity. This book provides real life as well as hypothetical examples to better the understand the principles of information design.

Author: Joel Katz
Date: August 2014
Title: Designing Information: Human Factors and Common Sense in Information Design

Don't Make Me Think, Revisited: A Common Sense Approach to Web Usability

In this book, Steve Krug provides a fresh perspective on how to re-examine the principles of mobile usability with updated examples. It is a short and profusely illustrated book.

Author: Steve Krug
Date: January 3, 2014
Title: Don't Make Me Think, Revisited: A Common Sense Approach to Web Usability (3rd Edition) (Voices That Matter)

Designing for Behavior Change: Applying Psychology and Behavioral Economics

This book talks about how various products are influencing behavior. Whether it's exercising more(jaw Bone Up) or managing your finances(HelloWallet). This guide provides insight on how one can products for users wanting to achieve a goal.

Author: Stephen Wendel
Date: 2013
Title: Designing for Behavior Change: Applying Psychology and Behavioral Economics
URL: http://web.b.ebscohost.com.ezproxy.rit.edu/ehost/ebookviewer/ebook/bmxlYmtfXzY2MDE4OF9fQU4 1?sid=58c3f698-f453-40e7-a2e0-3c192680c6a9@ sessionmgr113&vid=0&format=EB&lpid=lp_1&rid=0

Nudge: Improving Decisions About Health, Wealth, and Happiness

This book discuss the use of subtle influences that really effect individual and collective choices and outcomes in our culture and daily lives.

Author: Richard H. Thaler & Cass R. Sunstein
Date: 2008
Title: Nudge: Improving Decisions About Health, Wealth, and Happiness

Understanding Comics: The Invisible Art

This is a comic book about comic books. The author, McCloud explains the details of how comics work, are read and understood. Additionally, he talks about how we perceive different visual details in general.

Author: Scott McCloud
Date: April 27, 1994
Title: Understanding Comics: The Invisible Art

Emoticons: Useful Tool or Totally Uncool?

This book discuss the use of hand gestures, facial expressions, volume, pitch, and intonation to interpret situations and conversations we experience. The author discusses how a single emoji can express thousand words.

Author: Guest blogger
Date: Nov 7, 2013
Title: Emoticons: Useful Tool or Totally Uncool?

Research on Emoticons: Review of the Field and Proposal of Research Framework

The researcher discusses the use of Emoticons to convey their emotions during online conversation. The research paper explores the difference in use of Emoticons between men and women.

Author: Michal Ptaszynski, Rafal Rzepka, Kenji Araki and Yoshio Momouchi
Date: Nov 7, 2013
Title: Research on Emoticons: Review of the Field and Proposal of Research Framework

Subject Matter

Constant Culture of Distraction

Is a presentation by Joe Kraus on a topic called "SlowTech". Slowtech is all about finding the off switch and provides resources on the consequences of technology and it's effect on our health. In this presentation he talks about how people are connected to technology and detached from people. He also talks about how we can be more mindful of technology and pay attention to the things around us.

Author: Joe Kraus
Date: May 25, 2012
Title: Constant culture of distraction
Date of Access: September1, 2014
URL: http://joekraus.com/were-creating-a-culture-of-distraction

Mobile Mindset Study

This study explores the phantom smartphone twitches people get which include your phone is ringing, buzzing or bleeping even when it's nowhere in sight. It is also believed Americans are emotionally connected to our mobile devices. And how phones are often the first thing we reach for when we wake up, and some of us put more time and TLC into our phones than we invest in our person-to-person relationships. This study analysis human behavior with various activities performed on an iPhone.

Author: Lookout Security
Date: June, 2012
Title: Mobile Mindset Study
Date of Access: September1, 2014
URL: https://www.lookout.com/static/ee_images/lookout-mobile-mindset-2012.pdf

Connected, but alone?

In this TED talk Sherry Turkle talks about how our expectation for technology are increasing and from people is decreasing. She discusses how people find it easier to send a text message then strike a conversation and we are expecting technology to behave more human that trying to talk to a actual person. She suggests examining how we can use digital technology to make our life a life we love.

Author: Sherry Turkle
Date: Feb, 2012
Title: Connected, but alone?
Date of Access: September 7, 2014
URL: http://www.ted.com/talks/sherry_turkle_alone_together?language=en

A Brief Rant on the Future of Interaction Design

In this article, Bret Victor talks about how hands are supposed to feel and manipulate things and how with technology we are just swiping and tapping on screens. Although the future of technology will be more interactive and virtual, he questions if that's what we really need.

Author: Bret Victor
Date: November 8, 2011
Title: A Brief Rant on the Future of Interaction Design
Date of Access: July 8, 2014
URL: http://worrydream.com
ABriefRantOnTheFutureOfInteractionDesign/

Why Successful People Never Bring Smartphones Into Meetings

In this article Kevin Kruse talks about the recent research from the University of Southern California's Marshall School of Business, which discusses why high-level executives don't check their phones when at meeting. He suggests that's not only disrespectful, but multi-tasking is a myth and a person can pay attention to one single thing at a time.

Author: Kevin Kruse
Date: December, 2011
Title: Why Successful People Never Bring Smartphones Into Meetings
Date of Access: September 3, 2014
URL: http://www.forbes.com/sites/kevinkruse/2013/12/26/why-successful-people-never-bring-smartphones-into-meetings/

Americans Addicted To Checking Smartphones, Would 'Panic' If They Lost Device (STUDY)

This is an interesting study that analysis smartphone owners who check their phones at least every hour and while in bed or in the bathroom. For the study, the users asked if they had ever lost their phones and how they felt without their phones.

Author: The Huffington Post | By Britney Fitzgerald
Date: June 2012
Title: Americans Addicted To Checking Smartphones, Would 'Panic' If They Lost Device (STUDY)
Date of Access: September 14, 2014
URL: http://www.huffingtonpost.com/2012/06/21/americans-are-addicted-to-smartphones_n_1615293.html

Technology

Pew: 61 Percent In US Now Have Smartphones

This article discusses the increase in adoption of smartphones in USA. This article analysis platforms, operating systems and the demographics involved in smartphone use.

Author: Greg Sterling
Date: June 5, 2013
URL: http://marketingland.com/pew-61-percent-in-us-now-have-smartphones-46966

66% of the population suffer from Nomophobia the fear of being without their phone

This a an interesting study on the comparative analysis of the increase in users suffering from nomophobia has increased drastically since 2012. Nomophobia is the fear of losing their phone or not having one's phones with themselves

Author: securenvoy
Date: February 16, 2012
URL: https://www.securenvoy.com/blog/2012/02/16/66-of-the-population-suffer-from-nomophobia-the-fear-of-being-without-their-phone/

How to create and customize vibration alerts on your iPhone

This a short article on how one can customize vibrations on an iOS device for notifications. One can easily set notifications for say calls, e-mails or text messages. One can also use specific vibrations or turn off phone vibration for specific calls.

Author: Allyson Kazmucha
URL: http://www.imore.com/how-set-custom-alert-vibrations-or-disable-them-your-iphone-and-ipad

How To Turn Off Smartphone Apps That Track You In The Background

This article addresses how apps collect your phone data without realizing it. Although all phones allow users to turn off this feature, a lot of people aren't aware of data collection these apps do and thus, give away their information unsuspectingly. This study throws a light on what information people would be ready to share and what information they won't want to share.

Author: Thomas Halleck
Date: August, 2014
Title: How To Turn Off Smartphone Apps That Track You In The Background
Date of Access: September 14, 2014
URL: http://www.ibtimes.com/how-turn-smartphone-apps-track-you-background-1657868

HTML5: Designing Rich Internet Applications

This book is a good reference for information and demos on HTML5, specifically its interactive and multimedia capabilities.

Author: David, Matthew.
Date: 2013
Title: HTML5: Designing rich internet applications. Focal

w3schools.com

This website offers an expansive library of information about HTML and CSS. It is a great, quick reference for coding.

Date: September 18, 2014
URL: http://www.w3schools.com.

Foundations of UX: Prototyping

This tutorial offers information about a number of prototyping options to help the viewer find the right solution for their design. It covers the basic concepts and goals of a prototype as well as some tools and resources to actually create one.

Author: James Williamson, Lynda.com
Date: September 30, 2014,
URL: http://www.lynda.com/Web-Inter- action-Design-tutorials/ Foundations-UX-Prototyping/133349-2.html.

Creating an App Walkthrough in After Effects

This tutorial presents an overview of how to create a proof of concept for an application using motion graphics.

Author: Jesse Snyder
Date: October 12, 2014
URL: http://ae.tutsplus.com/tutorials/motion-graphics/quick-tip-creating-an-app-walkthrough-in-after-effects/

Axure

This tool enables you to make interactive HTML prototypes of websites and applications. It allows you to design and sketch right within the program. This is a good tool because it would allow for relatively quick and effective user testing.

URL: www.axure.com

POP app

Hand-drawn wireframes to tappable app prototypes. POP helps you make interactive prototype with ease. The workflow is simple: design on Paper, take Pictures, link and test.

URL: https://popapp.in/

Comparative Analysis

RescueTime (website/software)

Tracks the amount of time you spend on various sites and sends you alerts when you've been on a particular site too long.

The Habit Factor (app)

Helps you develop any habit necessary to achieve any goal you set for yourself by monitoring your relevant activities

The Lunecase (hardware)

Is an iPhone cover meant to not only protect your phones from damage but also notify you of incoming calls and text messages before your iPhone screen shows it to you using electromagnetic waves.

Moment (app)

Tracks how many minutes you use your iPhone or iPad , the number of times you pick up your iPhone each day and where you check your phone.(GPS location).

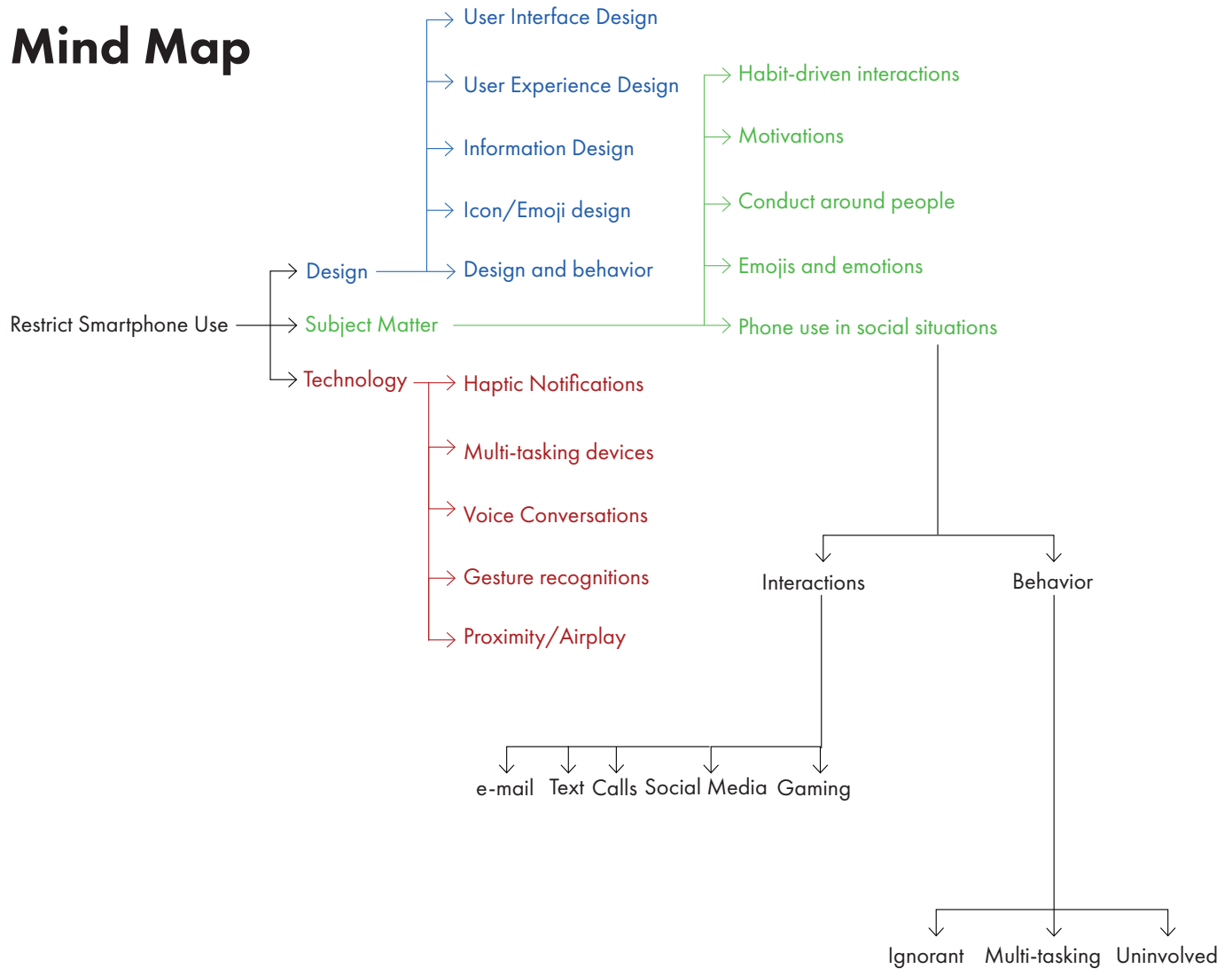### 21 Habit(website)

Lets you develop a habit as it has you check in every day for 21 days. When you miss a day, a dollar is donated to a charity. If you meet all 21 days, you earn back the $21 you put into it at the start. It is based on idea that one can make a habit in 21 days.

Checky

Monitors how many times you check your phone. This awareness can help you make changes to your phone usage.

Design Ideation

Mind Map

User Interface Design

User Experience Design   Habit-driven interactions

Information Design   Motivations

Icon/Emoji design   Conduct around people

Design ⟶ Design and behavior   Emojis and emotions

Restrict Smartphone Use ⟶ Subject Matter ──────────── Phone use in social situations

Technology ⟶ Haptic Notifications

Multi-tasking devices

Voice Conversations

Gesture recognitions   Interactions   Behavior

Proximity/Airplay

e-mail Text Calls Social Media Gaming   Ignorant Multi-tasking Uninvolved
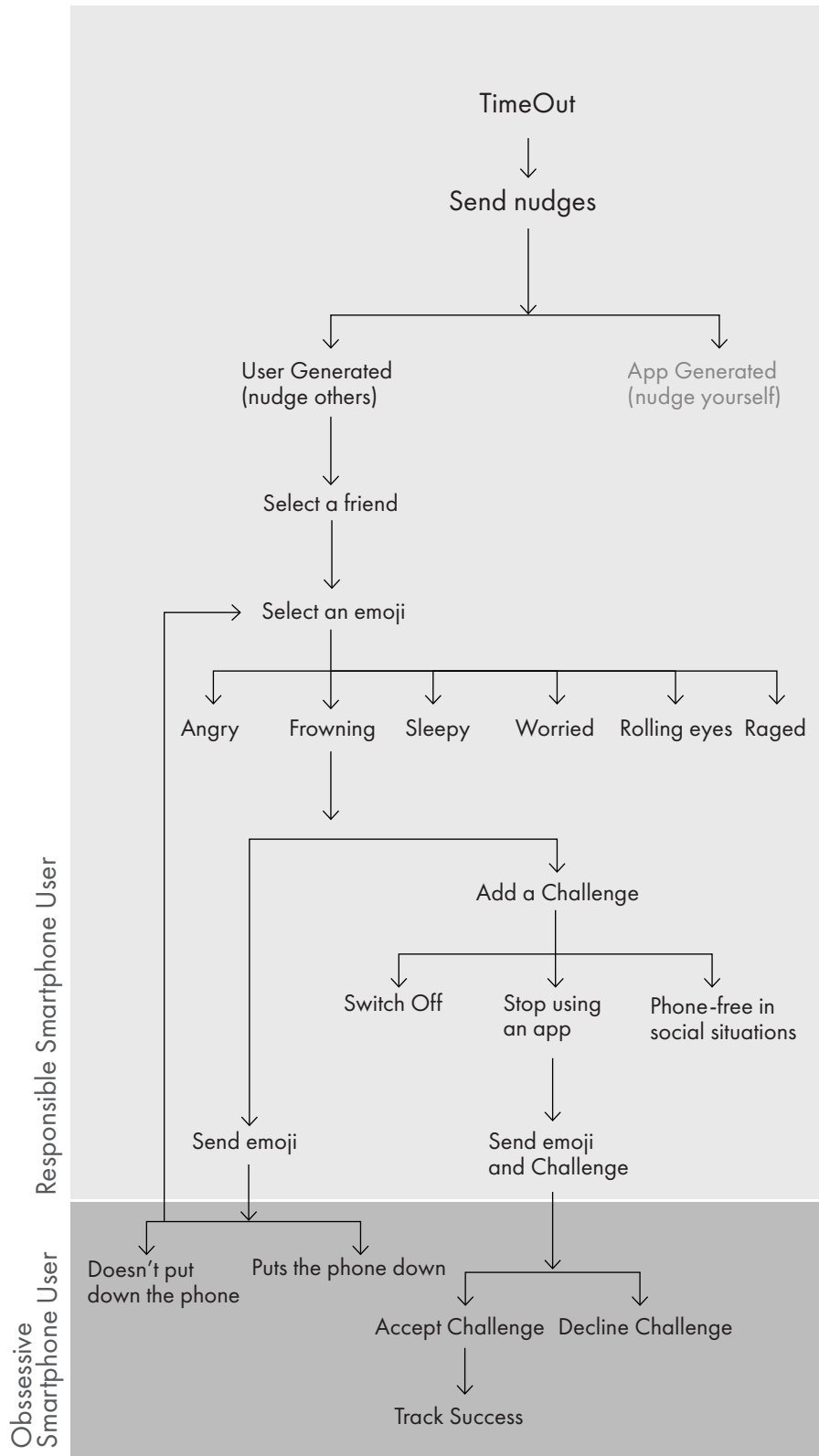
Main Components

Anonymous User:
- Sends emoji's: Visual design for emojis, UI/UX for the sender and icon design
- Sends Emoji + Challenge: UI/UX for the sender & icon Design

Reciever:
- Recieves emojis: UI/UX for recieving
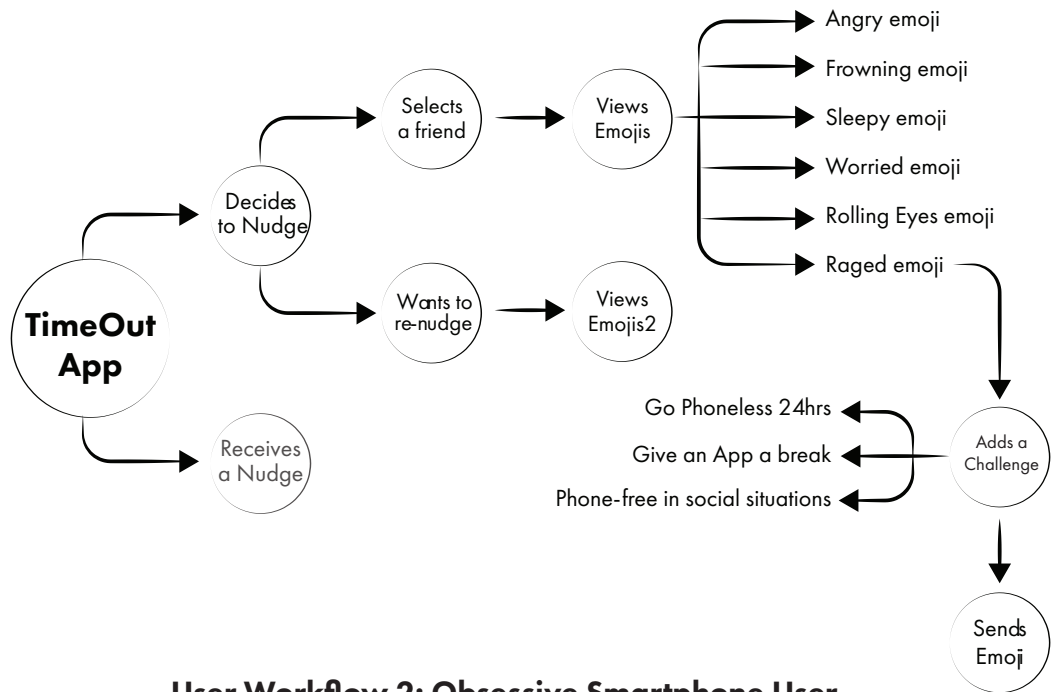- Information design for challenge

Design Ideation

Information flowchart

TimeOut

↓

Send nudges

User Generated
(nudge others)

App Generated
(nudge yourself)

↓

Select a friend

↓

Select an emoji

Angry   Frowning   Sleepy   Worried   Rolling eyes   Raged

Add a Challenge

Switch Off   Stop using
an app   Phone-free in
social situations

Send emoji

Send emoji
and Challenge

Responsible Smartphone User

Doesn't put
down the phone   Puts the phone down

Accept Challenge   Decline Challenge

Track Success

Obsessive
Smartphone User

Design Ideation

User Flowchart

User Workflow1: Responsible Smartphone User

Selects a friend → Views Emojis
- Angry emoji
- Frowning emoji
- Sleepy emoji
- Worried emoji
- Rolling Eyes emoji
- Raged emoji

Decides to Nudge

Wants to re-nudge → Views Emojis2

TimeOut App

Receives a Nudge

Go Phoneless 24hrs
Give an App a break
Phone-free in social situations

Adds a Challenge

Sends Emoji

User Workflow 2: Obsessive Smartphone User

Decides to Nudge

TimeOut App

Recieves a Nudge → Puts phone down → Accepts Challenge → App Monitors Success

Declines Challenge

Design Ideation

User Persona

Neil Anderson, 24 (Responsible Smartphone User)

"The Internet is so big, so powerful and pointless that for some people it is a complete substitute for life."

Background:	Environmental journalist and Innovation Earth columnist
Lifestyle:	Lives in an apartment in Boston. Enjoys discovering the local shops and entertainment in the city.
Personality:	Playful, Responsible, Sensitive and Selfless
Interests:	Backpacking, Entertaining, Socializing
Goals and tasks in relation to app:	Hates having to have a conversation with someone when they are busy browsing their phones. Wants his friends to be aware of their habit-driven interactions, but doesn't want to confront them.
Environment:	Relaxing and unwinding at a coffee shop

Design Ideation

User Persona

Jennifer Smith, 22 (Obsessive Smartphone User)

"The Internet is so big, so powerful and pointless that for some people it is a complete substitute for life."

Background: Just started her first job as an architect
                     at SHoP architects.

Lifestyle: Lives in a studio in Manhattan. Loves
                     socializing, parties and is a fashinista.

Personality: Amiable, Sociable, Spontaneous, Dominating
                     and Emotional

Interests: Shopping. Meeting with friends.
                     Exploring new places

Goals and tasks   Is hooked to her phone. She is gradually
in relation to app: getting disconnected from the world.
                     She has gotten her friends annoyed and walks
                     into people while browsing her phone.
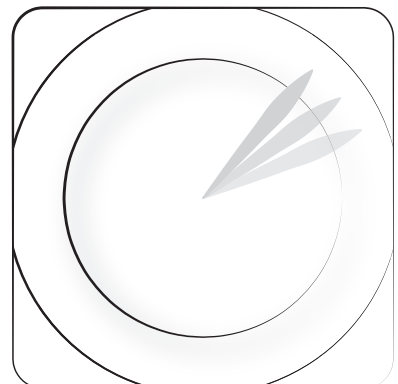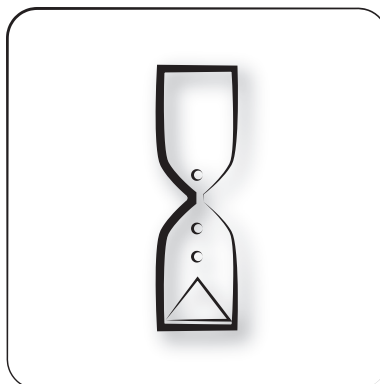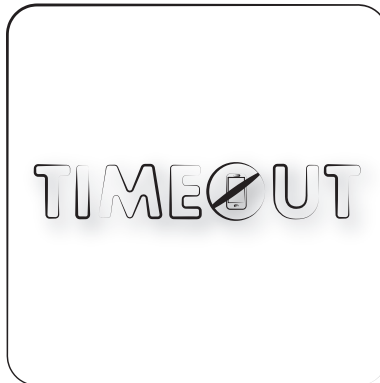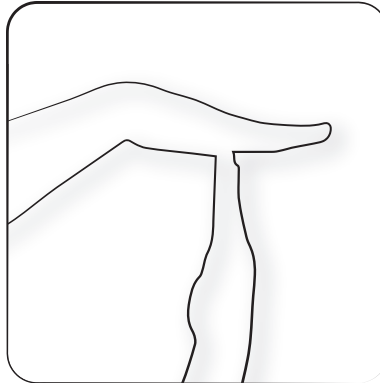
Environment: Is always multi-tasking

Design Inspiration

Personal Style

Logo
Sketches

Wireframes

RESPONSIBLE SMARTPHONE USER

NUDGE

TIMEOUT

PICK A FRIEND TO NUDGE

SELECT AN EMOTION

ANGRY EMOJI

ANGRY EMOJI

ANGRY EMOJI

ANGRY EMOJI

POWER OFF

GIVE UP AN APP

PHONE-FREE SOCIALS

POWER OFF

OBSESSIVE SMARTPHONE USER

POWER OFF CHALLENGE

ACCEPT

DECLINE

POWER OFF TRACKER

TODAY

WEEK

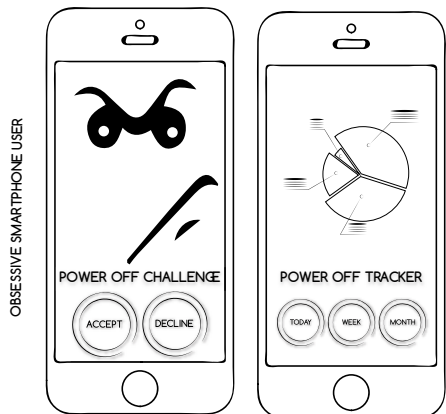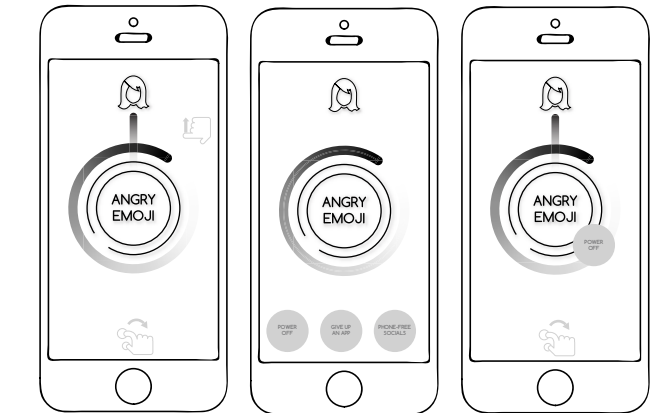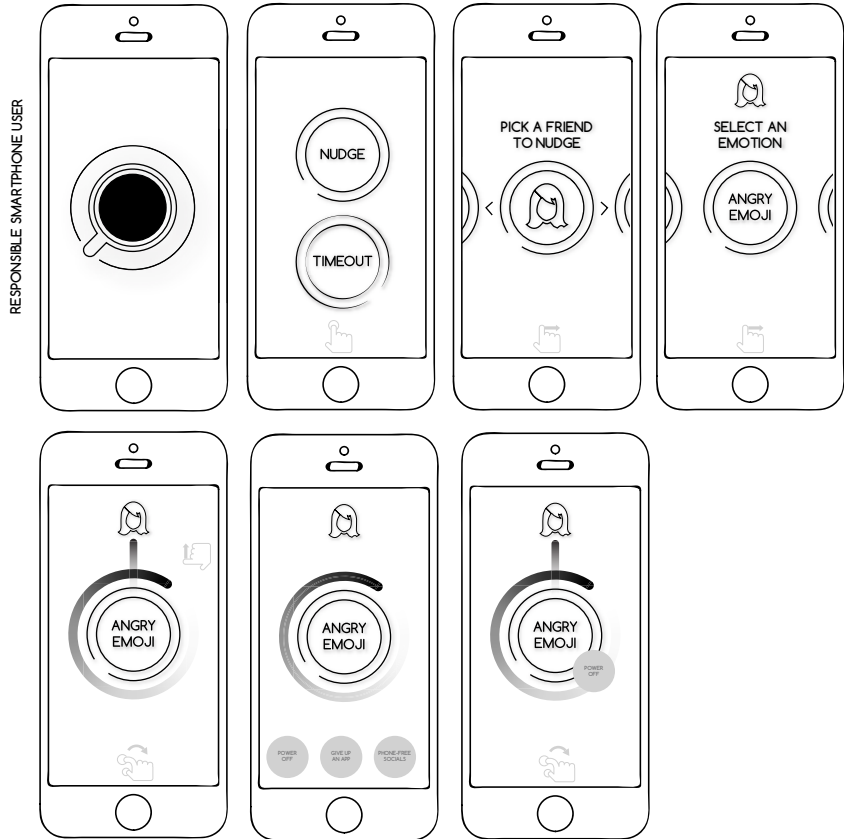MONTH

Deliverables

Promotional Website

I will design a single-page website to provide information on the project and access to the prototypes, promotional video, thesis blog, and process work.

Mobile Prototype

I will use Adobe InDesign and POP app to build a prototype of TimeOut to demonstrate it's user interface. This prototype will be utilized for user testing and feedback. All assets will be created using Adobe Photoshop, Adobe Illustrator and Adobe Dreamweaver. This app will allow users to nudge others preoccupied with their smartphones using in-app tap and swipe gestures. I may also include coach marks and tool tips to provide more information to the user.

Motion Graphics / Promotional Video

I will use After Effects to create a promotional video. This video will provide an overview of the main aspects of the project and demonstrate the features of the project. It will also show various aspects of the app in action and give information about the purpose and goals of the project. Assets for this video will be created using Adobe Photoshop and Adobe Illustrator.

Asset List

- Interface design for the iPhone app (10 screens)
- Welcome/Splash Screen
- Logo Design
- Design emojis (6 different expressions)
- Icons for the app (TBD)
- Motion Graphics/Promotional Video (90 secs)
- Comparative charts for challenges (3)

Methodology

For my thesis, I will design a prototype for an iOS app for 18-24 year old adults.

User – centered Design Goals

- The app will allow users to send anonymous nudges to family and friends that are in close proximity
- The app will be easy to use with externally consistent interactions and gestures
- The app will be engaging and interactive

Visual Design Goals

- Semiotics: Create icons/emojis to express emotions which can provide feedback to obsessive users in form alerts
- Visualize usage statistics
- User experience design will promote human interaction and limit smartphone use

Skills required

- Requirements gathering
- Ability to rapidly prototype for iterative design improvements
- Comprehensive knowledge of designing user centric applications

Implementation Strategies

Comprehensive research
- Will conduct surveys to analyze obsessive smartphone use
- Survey of literature (Publications in design, cognitive psychology and technology)

Prototyping: Understanding the user interface
- Mind Mapping
- Define user workflows
- Create a prototype

User Test with paper prototypes

Designing the prototype
- Make iterations in the workflow
- Design icons and emojis
- Create screens for the user and the reciever

User testing of emojis and interface
- Face-to-face conversations with target audience
- Guerrilla testing

Implementation and deployment
- Design an interactive prototype
- Develop a promotional website
- Create a promotional video

User test the interactive prototype
- Online surveys
- Face to face conversations

Evaluation

The evaluation criteria and process are essential in determining if objectives were successfully achieved and people clearly understand the subject matter of the thesis. The app will be tested with the help of an online survey and face-to-face user interaction. The participants will assess the pros and cons of the applications and recommend improvements. After analyzing the feedback, necessary enhancement to can be made to the application by implementing the most requested features.

Success Criteria
- The app has made an impact in reducing obsessive smartphone usage
- Raised awareness
- Promoted positive behavioral changes
- People were able to use the app for the intended purpose

Dissemination

To promote the thesis project, content will be posted on a personal blog, as well as on design community websites such as vimeo and dribble to obtain both traffic and feedback. The project will be submitted to various design competitions such as:

The 2015 RAF ADDY Awards

HOW Interactive Design Awards

AIGA (Re)design Awards

AIGA Design Ignites Change Fellowship

Communication Arts Interactive Competition

Adobe Design Achievement Awards

Pragmatic Considerations
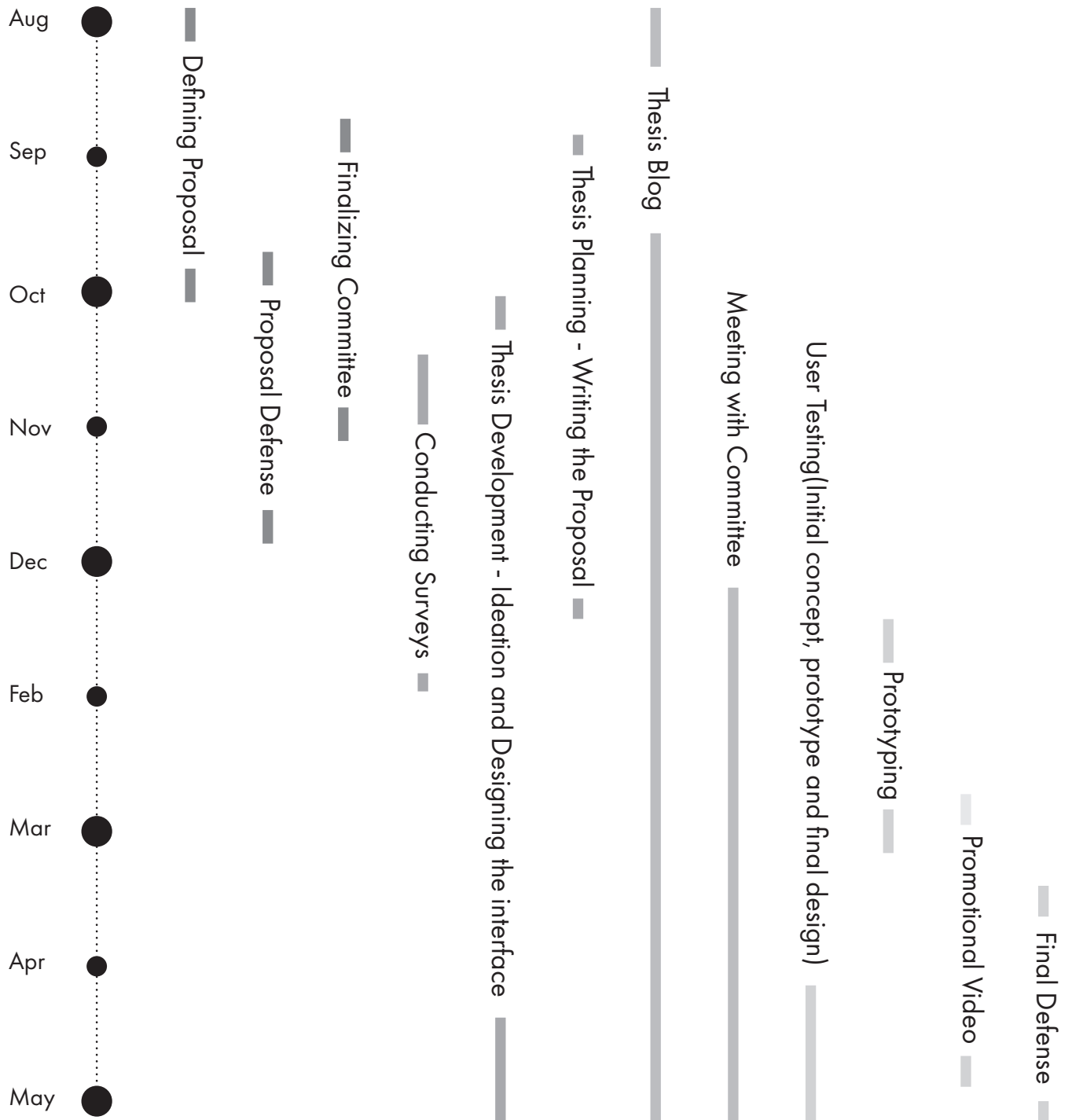
Cost for posters and thesis displays $60

Competition Entrance Fees $250

Purchasing Domains $10

Promotional Website $15

Project Assets

Product Mock-up Files (iPhone, desktop) $20

Implications

The results of this research will provide an insight on how user-centered design, information design and user interface design can influence behavior to reduce smartphone use.

The goal of the project is to demonstrate how user interface and user experience design can be used to promote human conversation in this technology driven world.

Timeline

Month	Milestone
Aug	
Sep	
Oct	
Nov	
Dec	
Feb	
Mar	
Apr	
May	

Defining Proposal

Finalizing Committee

Proposal Defense

Thesis Blog

Thesis Planning - Writing the Proposal

Meeting with Committee

Conducting Surveys

Thesis Development - Ideation and Designing the interface

User Testing(Initial concept, prototype and final design)

Prototyping

Promotional Video

Final Defense

Bibliography

"66% of the population suffer from Nomophobia the fear of
     being without their phone - SecurEnvoy Blog." SecurEnvoy
     Blog. https://www.securenvoy.com/
     blog/2012/02/16/66-of-the-population-suffer-from
     nomophobia-the-fear-of-being-without-their-phone/
     (accessed October 1, 2014).

"A Brief Rant on the Future of Interaction Design." A Brief Rant
     on the Future of Interaction Design. http://worrydream.
     com/ABriefRantOnTheFutureOfInteractionDesign/
     (accessed September 18, 2014).

David, Matthew. *HTML5: designing rich Internet applications.*
     Amsterdam: Focal Press, 2010.

Fitzgerald, Britney. "Americans Addicted To Checking
     Smartphones, Would 'Panic' If They Lost Device
     (STUDY)." The Huffington Post. http://www.
     huffingtonpost.com/2012/06/21/americans-are-
     addicted-to-smartphones_n_1615293.html (accessed
     October 12, 2014).

Gothelf, Jeff, and Josh Seiden. *Lean UX: applying lean principles
     to improve user experience.* Sebastopol, CA: O'Reilly
     Media, 2013.

"HTML." W3Schools Online Web Tutorials. http://www.
     w3schools.com/ (accessed October 18, 2014).

"How To Turn Off Smartphone Apps That Track You In
        The Background." International Business Times. http://
        www.ibtimes.com/how-turn-smartphone-apps-track-you-
        background-1657868 (accessed October 18, 2014).

"How to create and customize vibration alerts on your iPhone."
        iMore. http://www.imore.com/how-set-custom-alert-
        vibrations-or-disable-them-your-iphone-and-ipad
        (accessed October 2, 2014).

"Interactive Wireframe Software & Mockup Tool | Axure."
        Interactive Wireframe Software & Mockup Tool | Axure.
        http://www.axure.com (accessed October 12, 2014).

Johnson, Jeffrey C.. *Designing with the mind in mind: simple
        guide to understanding user interface design guidelines.*
        2nd ed. Amsterdam Elsevier , 2014.

Katz, Joel. *Designing information: human factors and common
        sense in information design.* Hoboken, NJ: Wiley, 2012.

Kraus, Joe. "http://joekraus.com/were-creating a culture of
        distraction." Atom. http://joekraus.com/were-creating-a-
        culture-of-distraction (accessed October 18, 2014).

Krug, Steve. *Don't Make Me Think, Revisited: A Common
        Sense Approach to Web Usability (Voices That Matter).*
        3rd ed. Berkeley, Calif: New Riders Pub., 2014.

Lookout Mobile Security. "Mobile Mindset Study." Lookout Mobile
        Security. https://www.lookout.com/resources/reports/
        mobile-mindset (accessed October 18, 2014).

"POP | POP - Prototyping on Paper." POP. https://popapp.in/
        (accessed October 18, 2014).

"Pew: 61 Percent In US Now Have Smartphones." Marketing
        Land. http://marketingland.com/pew-61-percent-in-us-
        now-have-smartphones-46966 (accessed
        September 18, 2014).

"Quick Tip - Creating an App Walkthrough in After Effects - Tuts+
        3D & Motion Graphics Tutorial." 3D & Motion Graphics
        Tuts+. http://ae.tutsplus.com/tutorials/motion-graphics/
        quick-tip-creating-an-app-walkthrough-in-after-effects/
        (accessed October 10, 2014).

Wendel, Stephen. *Designing for behavior change applying
        psychology and behavioral economics*. Sebastopol, Calif.:
        O'Reilly Media, 2013.

Forbes Magazine. "Why Successful People Never Bring
        Smartphones Into Meetings." Forbes. http://www.forbes.
        com/sites/kevinkruse/2013/12/26/why-successful-
        people-never-bring-smartphones-into-meetings/
        (accessed October 8, 2014).

"lynda.com Training | Foundations of UX: Prototyping." lynda. com. http://www.lynda.com/Web-Inter- action-Design- tutorials/Foundations-UX-Prototyping/ 133349-2.html (accessed October 18, 2014).