An Exploration of an Alternative Economy in the Philadelphia Region

Design Research into the Second Hand Cell Phone Market

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Project and Research Method Overview

Understand the secondhand cell phone market and pricing on a global and local scale - this was the challenge topic that was presented to us during our first week of class. Throughout the past seven weeks we have been given the tools to step outside of our computers and tackle the challenge topic from a number of different angles.

One of the research methods used throughout our project was to attack the challenge topic by adopting more of a design thinking approach, allowing us to transition and progress from abstract learners to hands on experiential learners. At the start of the project some of our team members approached the task at hand by defaulting to the research methods that we were both comfortable with and used to. This included utilizing online resources to lay the foundation for our research on alternative markets, underground economies and more specifically the secondhand cell phone market. While we collectively read over 70 articles related to this challenge topic, we quickly realized that in order to truly understand the market for used cell phones we had to step outside of our comfort zone and physically step inside of the secondhand market. This came in the form of interviews (27), site visits (32), photos (72), videos (15), narratives (15) and mapped journeys and personas (13). By using these multiple scales and perspectives we were able to deepen our understanding of this market, who is involved and why. (See Appendix 1, Figure 1.)

A second research method that our group utilized throughout the course of this project was the iterative process. We individually explored the markets and reported our findings to the group. We repeated this approach to progressively elaborate on our best research and ideas to compile patterns and trends to paint the strongest picture of the secondhand cell phone market. While individually discovering the secondhand markets, we established our own definitions for what these markets are and why they exist, who is involved, and what their motivations are for participating in these underground transactions. Each of our journeys explored a variety of players in the used cell phone market; while the individual research was telling, it was also varied. We used affinity exercises and journey mappings to bring it all together, working away from our individual research and towards a well-rounded team understanding of this market, establishing patterns along the way. (See Appendix 1, Figure 2.) Allowing the group to benefit
from five different individual’s perspectives and experiences afforded us with a better representation of the complexity of this very nuanced market. It also allowed us to think and approach researching from a new perspective and with a newly found energy and spirit.

**General Findings / Discoveries**

One of our main takeaways after completing the above mentioned research was the ability to confidently define what a secondhand market is – something that we struggled with for the first few weeks of the course. A secondhand market is a market existing and functioning against economic norms. The activities occurring here fall outside of a regulated form of distribution and taxation; most transactions escape observation and go undetected by the government. Buyers and sellers either choose to or are compelled to participate in these markets because there is an unmet need or something that these markets provide that a firsthand market fails to do.

Throughout our research we were struck by the range of players, locations, motivations and currencies found in the secondhand market; any preconceived notions of black markets were either strengthened or disproved throughout our research. (See Appendix 1, Figure 3.) Our biggest preconceived notion prior to engaging in this research project was believing that the black market was largely something underground and illegal – therefore seemingly disconnected from many of us. The reality, however, is that secondhand markets are all around us. The market’s activities range from illegal to legal, from socially acceptable to socially unacceptable. Whether it is by actively participating in the secondary market or by purchasing on the primary market, the cell phone goes through its own life cycle and we are in many ways at the center of this cycle.

Another key discovery that we made was determining why a secondhand market exists for cell phones. Our research suggests that phone manufacturers are constantly introducing new phone technologies, leading consumers to frequently upgrade their phones. This results in an excess phone supply. Phones are frequently turned over because the technologies being offered and advertised by phone manufacturers speak to what many consumers want - the latest and greatest gadgets with the best features and functionalities – bigger screen, better cameras, etc. According to an article from CCS Insights, nearly 2 billion mobile phones were expected to ship in 2013, with slightly over half (53%) of the inventory being smartphones. However, we found that
newer phones, particularly smartphones are being introduced after about 18 months. This means that the 2 billion phones shipped in 2013 will have a use life of just over a year before moving into the secondhand market. Apple, for instance, typically releases a new iPhone after 376 days. This represents the average release schedule between 2008 and 2014 (344 days being the lowest lag time between new phone releases and 467 days being the greatest lag time between new releases) (See Appendix 1, Figure 4.) Take the iPhone 5, as an example. It was made available to the public on September 21, 2012. However it was officially discontinued less than one year later on September 10, 2013 with its successor the 5s and 5c. The iPhone 5s and 5c were barely on the market for a year when the iPhone 6 became available for purchase on September 19, 2014.

Before consumers buy newer phone versions, however, they have to make a decision on how to dispose of their used phones. These decisions typically do not follow traditional distribution channels. We found that about 50% of old phones remain with their current owners, while 10% of old phones are lost, stolen, or broken. This leaves about 40% of population of old cell phones that are sold in the secondhand cell phone market. Many are traded over the internet, between friends and family, or even stolen and sold to street vendors or online.

A further point that was uncovered during our research was that there is a reversed dynamic to the roles of the seller and buyer in each the primary and secondary markets. The over-production of phones leads to excess supply and lends itself to a buyer’s market, opposite of the primary market where the newest technology lends itself to a seller’s market. For example, the iPhone 6 was released into the primary market last month. Buyers not only lined up for city blocks willing to pay a steep price tag, but further camped out and slept on the streets to help ensure that they received one of these new devices. (See Appendix 1, Figure 5.) In this example, the primary market is favoring the seller. This is contrary to the secondary market where simply searching for “cell phone” within eBay or craigslist will result in hundreds of thousands of phones available for purchase every day. A quick search on Craigslist for used cell phones in Philadelphia pulled up nearly 7,700 pages of results. (See Appendix 1, Figure 6.) Because there is such an excess supply of phones, buyers have flexibility to negotiate with sellers, and sellers realize that if they do not bend to a buyer’s price point that the buyer can easily go elsewhere. The secondary market, therefore, favors the buyer.
Drawing from our team interviews and the interviews from some of the other teams in class, we were able to deduce that there is a wide range of motivations for why people participate in the secondary market. These motivations range from buyers who view their phone as a source of connectivity or alternatively as a source of entertainment or escape. A mother who purchases a phone to stay in touch with her teenage daughters versus a college student who uses her phone to check Facebook or Twitter so that she is constantly “in the know.” Others look at their phones and see a trophy or a piece of technology that defines their accomplishments or worth. Still others look at their phones and see their identities; the stories of their lives where all of their conversations, photos and memories with loved ones are stored at the touch of a button. In more extreme circumstances, phones are viewed as lifelines or homes as they are sometimes the sole possession that these buyers have. All of these motivations were found through our research, particularly within the interview phase of the process, when we started viewing our phones less as mere objects and more as necessities.

**Summary of Our Research**

Our team interviewed 27 buyers and sellers in the used cell phone market. We focused on participants in the hyper-local as well as the regional market. Approximately three-fifths of our research occurred within Philadelphia and two-fifths within the region. (See Appendix 2 for full demographic data.)

At 59%, a majority of individuals that we interviewed were located with the city limits of Philadelphia. Locations in Philadelphia were distributed across neighborhoods from Southwest, West, Center City, and North Philadelphia. The Far Northeast is not represented in the population.
Map 1: Locations of interviews that occurred in Philadelphia.

The other 41% of interviewed participants are located outside of the Philadelphia city limits, but within southeastern and central Pennsylvania. Buyer and seller locations dot the map to southwest Chester County, north to Montgomery and Bucks Counties, northwest to Reading, and west to Harrisburg.

Map 2: Locations of interviews that occurred outside of Philadelphia.

It is fair to say that with the range of perspective across our team members, we expected to discover a variety of participants in the used cell phone market. To illustrate the spread of our sample population, the below section illustrates our participants as represented by estimated income and analysis of estimated income and ethnicity/race. (Income ranges and ethnicity/race categories are based on 2010 Census definitions. These definitions are limited in representing the
full range of participant identities; however, our team determined that we would use Census definitions, as they are a broadly accepted standard of measurement.)

Interviewees revealed information about themselves that our team utilized to estimate incomes. For example, a participant who was a full time student with no steady employment was estimated to make less than $35,000. A full-time high-level marketing manager was estimated at over $74,000.

Of the 27 individuals interviewed, a majority, 74%, is estimated to earn the least amount of money. This breaks down into three categories: 44% who are estimated to have an income under $35,000, 19% who are estimated to be in the $35,000 - $41,999, and 11% who are estimated to be in the $42,000 - $51,999. The remaining 26% is estimated to earn over $59,000.

Chart 1: Participant Count by Estimated Income

Black, African-American participants make up the highest portion of the lowest income group at 41.7%. All Asian-Indian participants are represented in this lowest income group. White participants spread across the five represented ranges, and are the only participants represented in the two highest income categories.
Among our 27 interviews, the following individuals stood out:

- a teenager seller who bested offers at EcoATMs
- an adult buyer who traded services for hardware
- a young adult who traded minutes as currency
- a husband and father who found himself a seller out of circumstance rather than choice, and
- a street merchant who deals only within his religious community, disguised by language, race, and religious principles.

Our boot-strapping approach to data collection not only assimilated different sections of the city and state, but it also reached across different ages, races, genders, income ranges, and locations. This means that our sample is more representative of the population that we are studying. However, broader research unveiled that alternative markets are just as likely to exist in more common and mainstream places as they are in disparate or isolated communities. Despite the variables of these categories, the driver remains the same: it is someone’s need that pushes them into the market.

**Overview of the Sell Cycle**

The Sell Cycle involves seven distinct segments where each decision phase include factors that impact the technique in which a second hand cell phone is sold outside of the primary market. The Drivers and Instigation segment is extremely crucial to every other segment in the cycle. This segment can be best defined as the why or motive behind a seller. When we looked at why
certain sellers engaged in this market, we gained a better insight as to how the market operated. Some of the motivators can be one or many of the following: an emotional need such as a connection to others or a sense of home; a sense of urgency to sell a stolen phone; the allure of the selling experience in the secondary market; an affordable means of upgrading to a newer or different phone; and the most overwhelming motivator - a supplementation of income.

The Advertisement and Announce segment focused on where someone would go to get these phones and how people know where to go. We found that this segment was dependent upon how the phone was acquired and the correlated motivation to sell the phone. If acquired illegally, the phones are most likely sold privately and advertisement can be based on word of mouth or
knowing someone inside this secondary market. If acquired legally, the phone is often sold publicly with no discreet advertisement.

The Process and Way segment highlights how these goods can be easily categorized after acquisition, and the impacts of the external factors of the primary market. For example, there is an average of an 18 month life cycle for a cell phone, forcing excess inventory to be pushed back for the new arrivals.

The Supply and The Goods segment distinguishes the goods based upon the way in which they were acquired - legally or illegally, as this is important in terms of pricing and the location where the phone is to be sold. The supply can be stolen and likely on the Blacklist, or unwanted and not on the Blacklist. This stage is dependent upon how the phone was acquired.

The Valuation and The Appraisal segment is highly dependent on the previous stages of the cycle. How the phone was acquired, the market value, the street value, and even the condition of the phone are all taken into consideration. This stage is dependent upon how the phone was acquired.

The Location and The Place segment breaks down whether the phone is sold online or in person, in a brick and mortar establishment or discreetly on the street. This stage is dependent upon how the phone was acquired.

The Transaction segment is ironically the least interesting stage in the Sell Cycle. Some examples of impacting factors are whether there is a negotiation that takes place or if one party has leverage or control over the other. Still it comes down to a means of exchange, which could be an exchange of currency, goods, or even services.

**Persona #1 in the Sell Cycle**

When challenged with the task to interview individuals regarding the alternative cell phone market, questions such as who, when and where were contemplated for several hours. Once we tackled this challenge, however, we realized that many more people than we anticipated
participate in the alternative market, whether they know it or not. We came across many different motivation factors for why people participate in the underground market; however through teamwork we were able to group some of these individuals together using a common thread.

The persona of Joe was one that we all agreed that we had come across during our interviewing process. Who is Joe?

Motivation: Joe is used to having the latest technology. He usually makes up his mind to purchase the latest phone faster than the average person. Joe will typically pre-order his phone because he wants to make sure that he does not miss a day of discovering how the new phone operates or enjoying its latest functions. Joe is motivated to stay up to date, current and in the know. He enters the alternative market by selling his old phone because he no longer needs it—and why would he? He has the best and latest phone now!

Advertisement and Announcement: Joe usually gets an email directly from the phone manufacture and from his service provider indicating that a new phone will be hitting the market soon. After receiving that confirmation, Joe will start surfing the internet to identify the current market value of his soon to be old phone. Joe uses sources such as gazelle and eBay to identify the going rate.

Process and Way: Joe usually anticipates a new phone; it is almost like he can smell it in the air. In fact, after he purchases his latest phone, almost two months later he will hear rumors about another anticipated phone. It doesn’t bother him that the phones have 18 month life cycles; he actually welcomes it because no matter what the cost or time frame, he will purchase it. In turn, he will participate in the alternative market almost every 18 months by default.

The Supply and the Goods: Joe does not have an issue in this segment, typically because his phone is ALWAYS purchased from the provider, and he is selling his phone in the alternative market after it is paid off. Whoever decides to purchase from Joe is guaranteed to get a fully working, almost in brand new condition nonblacklisted phone.

Valuation: Joe finds this process to be the most time consuming part of the sell cycle. Depending on what time it is in the life cycle between the old and new phone, identifying the price for his
old phone can be tricky. He wants to get the best value for his phone and spends long hours researching the going rate of his soon to be old phone. Joe uses gazzle, eBay and news articles to help him identify a price.

Location: Joe is willing to sell his phone anywhere, but prefers to certain websites. eBay and Craigslist are his places of choice. eBay allows him the ability to connect with individuals all over the world who might be interested in his phone at a particular price.

Transaction: Joe’s transaction is seamless. He does an extensive amount of investigation and is not up to much negotiation. He has a price range and will not make any exceptions. Once someone agrees to his terms he neatly packages and ships the phone. The consumer is usually always satisfied because as his listing mentions, the phone is “like new”.

**Persona #2 in the Sell Cycle**

We came across a range of interesting personalities while individually discovering the secondhand markets, particularly during the interview/narrative phase of our research. For some of us, this was a learning lesson as it helped us to get over some of the stereotype biases we held against the underground market and those participating in it. We learned that in order to understand how underground markets function, it is necessary to understand both the roles that participants play and the daily interactions that the participants have in this space.

Every player that we came across in this secondhand market was a contributor either by choice or by circumstance. One of the interviewees participating by circumstance that we would like to showcase is Roy, an immigrant from India. Roy’s issue with his visa status is forcing him to operate in the underground cell phone market. He owns and operates a small mom and pop store near King of Prussia, and both he and his store are very popular in his neighborhood. Roy has gained the trust of his customers evident by his repeat clientele. He has a loving family
consisting of two daughters and a wife, and he wants to provide them with the best that he can afford. This is why he has turned to the secondhand market, dealing cell phones and accessories, to supplement his income. From his interview, we observed that most of the influencing factors that contribute to Roy’s role in the market supported our mapping of the seller role. Starting with how his phones were acquired, moving to his motivations and drivers, forms of advertisement, locations and pricing.

Roy’s used phone supply usually comes from customers trying to get rid of unwanted phones, phones that are in bad condition and in some rare cases phones that are stolen. He notes that better security features from the cell phone manufacturers and the ability to remotely shut down the phone may be contributing to fewer stolen phones being bought into his shop. Most of his customers, he notes, are selling their phones either because they need the money or because they want to upgrade to a newer phone, however, he also does his best to make sure that the merchandise is not stolen. He plays the dual role of a buyer as well as a seller, and when asked what drives him to be in this market, his response was prompt - to provide the best for his family.

Roy has invested the past few years to perfect his market. While buying a used phone, he chooses carefully, identifying phones that are of good quality and have a brand value. He then repairs them and sells them at a margin of 50-200%. During the sell process, he will sometimes size up the needs of his customers and, if he senses their urgency, he will slightly increase his selling price.

Roy’s biggest competitor is not the other used phone dealer, but rather the big service providers as they have now made their way into the prepaid cell phone market with economically priced cell phones (Boost Mobile, Virgin, MetroPCS and others). He is cautious about this development and apprehensive of their influence in this market.

Conclusion

In addition to learning about alternative economies, we have also discovered alternative methods of gathering information and drawing conclusions. The human network proved to be a vast and un-tapped source of information. With each task and assignment, we became less resistant to trusting this process, until we became more comfortable with this way of thinking and researching. We began to expect to find our way through this project by paying close attention to the details that were discovered.
We all play a major role in this underground second-hand cell phone market, whether actively participating in this secondary market or the primary market. There is a transfer of goods that falls through a hierarchical system from the primary market to the secondary market. And without the transfer of goods, the supply for the secondary market would come to a screeching halt. However, it is obsession that drives the supply: the obsession of the manufacturers to maintain a competitive advantage against one another; the obsession of the market to push for cell phones with the best and latest features; the obsession of those that want and need to be part of a market they are excluded from, whether this is by choice/or not by choice; the obsession of those that seize the opportunity to take advantage of those that are excluded; the obsession of always being able to stay connected with other people so that we do not feel alone, which is a necessary component to survival. These obsessions, including the obsession to survive, propel us and drive into existence a market to meet the demand, regardless of its taboo nature.
Appendix 1: Figures and Demographic Data

Figure 1: Overview of Process

- **Wk 1**: Intro to Challenge Project
  - Understanding the second-hand cell phone markets and pricing on a global and hyper-local scale
- **Wk 2**: Articles read on challenge topic: 71
- **Wk 3**: Interviews given: 27
  - Narratives written: 15
- **Wk 4**: Sites visited: 32
  - Pictures taken: 72
  - Videos recorded: 15
- **Wk 5**: Mappings/Personas assembled: 13
- **Wk 6**: Preliminary project report
Figure 2: Affinity Mapping and Personas
Figure 3: Alternative Market Components Cloud

Figure 4: iPhone Release Cycle

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<td>Recent releases</td>
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<td>Jun 2010</td>
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<td>Jun 2009</td>
<td>370</td>
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<td>Jul 2008</td>
<td>344</td>
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Figure 5: iPhone 6 Release

Apple Faithful Line Up For iPhone 6, iPhone 6 Plus

Reuters, September 20, 2014

Figure 6: Current Craigslist Inventory of Used Phones (Philadelphia)
Appendix 2: Interview Demographics

Chart 1, Participant Count by City

Chart 2: Participant Count by Gender

Chart 3: Participant Count by Age
Chart 4: Participant Count by Estimated Income
Chart 5: Participant Analysis by Ethnicity/Race & Gender
Chart 6: Participant Analysis by Income and Ethnicity/Race

Participant Count by Income

- Less than $36,000: 12 participants (33.3%)
- $36,000-$41,000: 5 participants (40.0%)
- $42,000-$51,000: 3 participants (66.7%)
- $56,000-$73,000: 4 participants (100.0%)
- Over $74,000: 3 participants (100.0%)

Legend:
- Marking
- Color by Ethnicity/Race:
  - Asian Indian
  - Black, African-American
  - Chinese
  - Hispanic, Latino, or Spanish
  - White
## Table 1. Raw data

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<td>Less than $35,000</td>
</tr>
<tr>
<td>26</td>
<td>Skippack</td>
<td>Skippack Pike</td>
<td>45-64</td>
<td>White</td>
<td>Male</td>
<td>$35,000-$41,999</td>
</tr>
<tr>
<td>27</td>
<td>Philadelphia</td>
<td>N Broad Street</td>
<td>18-44</td>
<td>Black, African-American</td>
<td>Male</td>
<td>$35,000-$41,999</td>
</tr>
</tbody>
</table>
Table 2: Demographic variables by category, according to Census definitions

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Ethnicity/Race</th>
<th>Sex</th>
<th>Estimated income range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 18</td>
<td>Hispanic, Latino, or Spanish</td>
<td>Female</td>
<td>Less than $35,000</td>
</tr>
<tr>
<td>18-44</td>
<td>White</td>
<td>Male</td>
<td>$35,000-$41,999</td>
</tr>
<tr>
<td>45-64</td>
<td>Black, African-American</td>
<td></td>
<td>$42,000-$51,999</td>
</tr>
<tr>
<td>65+</td>
<td>American Indian</td>
<td></td>
<td>$52,000-$58,999</td>
</tr>
<tr>
<td></td>
<td>Asian Indian</td>
<td></td>
<td>$59,000-$73,999</td>
</tr>
<tr>
<td></td>
<td>Chinese</td>
<td></td>
<td>Over $74,000</td>
</tr>
<tr>
<td></td>
<td>Filipino</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Japanese</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Korean</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vietnamese</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Asian</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Native Hawaiian</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Guamanian or Chamorro</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Pacific Islander</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 3: References


MacRumors (2014). MacRumors Buyer’s Guide. [http://buyersguide.macrumors.com/]


Appendix 4: Research Material Collected

Appendix 4.1: Pictures
Reference 1: [https://drive.google.com/a/temple.edu/folderview?id=0B1Bevj1RzbxKT1RWUnpOZXZueWs&usp=drive_web]
Reference 2: [https://drive.google.com/a/temple.edu/folderview?id=0B0gnt-tornhHRMb0MtVHRScFk&usp=drive_web]
Reference 3: [https://drive.google.com/a/temple.edu/folderview?id=0B0gnt-tornhTXFqZEJ2QffObFE&usp=drive_web]

Appendix 4.2: Videos
Reference 1: [https://drive.google.com/folderview?id=0BzhGy2-FFkJURUhOakZ1Sy1NeWM&usp=sharing]
Reference 2: [https://drive.google.com/folderview?id=0B7ejCuNDnlfRuUlacT10ZW1TNzQ&usp=sharing]
Reference 3: [https://drive.google.com/folderview?id=0B6j6KNz6vDeDS2hLbk5DS3hHVGs&usp=sharing]
Reference 4: [https://drive.google.com/folderview?id=0B0gnt-tornhTVg1RUJPJ0JEeXc&usp=sharing]
Reference 5: [https://drive.google.com/folderview?id=0B_lbyr_2wXuRbXJocXHHVfTLLw&usp=sharing]

Appendix 4.3: Individual Mappings
Reference 1: [https://drive.google.com/file/d/0B7ejCuNDnlfRuMlpGeUJ5LW42ZUU/view?usp=sharing]
Reference 3: [https://drive.google.com/file/d/0B7ejCuNDnlfRuMlpGeUJ5LW42ZUU/view?usp=sharing]
Reference 4: [https://drive.google.com/folderview?id=0B0gnt-tornhTVg1RUJPJ0JEeXc&usp=sharing]

Appendix 4.4: Interview Audio
Reference 1: [https://drive.google.com/folderview?id=0B0gnt-tornhSl9DU1JHdG3dHc&usp=sharing]