HB 3.0 (New Testing Methods to Access Human Behavioral Changes due to Digital Devices)

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Introduction

We as humans are ever changing and the Internet is only making these changes occur at an ever more accelerated pace. There are many important benefits in leveraging the Internet such as speeding research, connecting workers to their place of business, and connecting person-to-person. However, how we retrieve and send information is now affecting us in different ways. In HB 1.0/HB 1.01 and HB 2.0 we exposed some of the issues surrounding Internet usage via digital devices (e.g., smartphone, tablet, PC, etc.). HB 3.0 will look at new methods for testing behavioral changes in this new connected environment.

New Testing Methods

We humans are different in terms of test subjects than dogs or mice regarding the Internet and particularly in relation to social media. Accordingly, Pavlov's methods are not really applicable regarding user testing on digital devices in most cases. Hence, a new set of testing methods must be established to better determine the collateral damage caused by the overuse and, or over dependency on digital devices. There is no question that these devices are becoming more and more prevalent in our everyday lives and that these devices have also altered our behavioral patterns, some of which may be considered perturbing. Testing in controlled environments may not be the best path taken because this type of testing does not accurately depict how digital devices are used in day-to-day situations. People are dynamic in nature and these synthesized or somewhat static testing environments rely on outdated methods and in most cases "Plug-In" results as their bottom line. As stated earlier, testing on dogs and mice is not appropriate for testing digital devices. For example, do we affix an Apple iPhone 5 to one dog and a Samsung Galaxy S4 to another and then ask them which Jay-Z or Mozart song they like best? All kidding aside, we need to create a testing model that mimics real world environments like a college campus or train station, for these are the places where natural human behavior can properly be observed.

Testing in Our Connected World

We live in a fast paced world where speed and convenience are key. During my time as a project manager I helped to deliver mobile applications in places like Australia, Canada, and Hong Kong where important factors like language and graphics came into play. The main goal was to provide a valuable service to our customers, while catering to needs like supporting both Mandarin and Cantonese. Local focus was important and even the use of specific colors became a sensitive issue. It could be a trading application or watching the latest video. In essence, people want what they want. This "want" or "need" in our fast paced society is promoting a lack of patience across many areas such as the use of mobile devices. Testing an application in a controlled environment is one thing, while testing how humans actually use these devices in everyday life is another. For example, hitting the cash position key on a mobile device in a test lab is different than hitting the same key on a subway waiting for the E train in Manhattan while having an elbow in your face. Testing mobile devices in a lab or controlled environment is much like testing an automobile on a track with no potholes, or other factors like avoiding a group of deer at dusk. As a result, a new set of Observation Scenarios should be created to better understand how humans use these types of devices in real world environments. The goal of this report is to expose new methods that shy away from proven testing methods, so we may more accurately gauge human behavior.

Observation Scenarios (Who/Where/Example)

Testing in real world environments carries with it a certain level of ambiguity. For example is the person sitting next to you speaking French living in the U.S. or visiting from Lyon, France? We really have no idea unless we ask them or listen in on their conversation, which would be an invasion of privacy and not the proper course to follow. Hence, the nebulous nature regarding digital device testing in real world environments. This section will be divided into two main parts that include Observation Scenario (Who) and Observation Scenario (Where). They may be viewed as similar, but each has their own set of unique characteristics. These scenarios are meant to gather information, so we may create a base reading outside of controlled environments, which most often do not accurately reflect digital device use in real world environments.

Observation Scenario (Who)

The path for the Observation Scenario (Who) leverages two key pieces of information that includes gender and estimated age, which are termed Prime Factors. In the animal world most species have a defined sex and age. Hence, we use these two components as our base and add additional components if or when needed. There are many Web sites where information about ethnic makeup, income levels, and crime statistics can be obtained, but our focus will take on a minimalist approach. The goal is to remove as many non-essential bits of data as possible, so we can better understand how humans use digital devices. This study is not about color, religion, or income levels. It is about focusing on the "Being", rather than the make-up of the person.

Observation Scenario (Where)

People occupy a physical space, and as a result we must observe them in the space they occupy. New York City may be the most diverse place in North America, and is also where my studies will take place. With over one-hundred languages spoken in Queens alone, and a population of over 8 million, New York City may not be the perfect example of a melting pot, but it is not far off. Please note, other cities such as Chicago and Los Angeles are also excellent places to study human behavior because of their diverse and large populations. People use their digital devices a great deal in places like parks, bus stops, and train stations. Hence, our Observational Scenario (Where) will target these three key areas to better understand the "Who" and "How" components of our equation. We start with a simple model, which has been listed below.

Parks

All parks are not the same and cater to different audiences. For example, you will have a greater percentage of tourists in Central Park than Dag Hammarskjold Plaza in Manhattan. As a result, one would focus on the latter to gain a better on how the local population leverages the use of digital devices. We can also study a middle-ground place such as Bryant Park, which seems to have an even split at lunchtime. For accuracy purposes our model may use Dag Hammarskjold Plaza (Locals) for Monday, Wednesday, and Friday mornings, along with Tuesday and Thursday evenings, while leveraging Bryant Park (Locals/Tourist) at lunchtime from Monday through Friday. Finally, we may use Central Park from Monday through Friday mornings from 10:00 to 11:45 a.m. EST to gain a better understanding of how tourists use their digital devices around places like Strawberry Fields. Yes, there will be some margin of error, but observing in real world environments does carry a risk.

Train Stations

This is where we can get a good read on the local population. It could be waiting for the BART in San Francisco or the Lexington Avenue line in Manhattan. For example, one could take a seat and observe people waiting at the 50th & Lexington Avenue train station from 7:00 to 9:00 a.m. EST for a snapshot of the locals on their way to work. Many are on their way south and work in areas such as technology in Midtown South, along with banking & brokerage on Wall Street. As one would surmise, a majority of these people leverage their digital devices for work and many have the latest and greatest offerings. As a result, the 50th & Lexington Avenue train station would be a good place to start, for one to gain a better understanding of the local population's pulse regarding digital device use.

Bus Stops

This is also another great place to observe the behavior of local residents. Again, the location and time of day are two prime components of the equation. For example, there are many high-rise apartments in Midtown Manhattan and people usually take a bus or train to work. Hence, a constant flow of people congregating at bus stops and train stations because of highly congested population conditions. Take for example, the M 15 bus stop on 49th & 2ed Avenue in Manhattan. While only a few blocks from the 50th & Lexington Avenue train station, the group of people waiting for the bus is very different. Rather than being comprised of bankers, brokers, and technology experts, the 49th & 2ed Avenue bus stop is made-up mostly of school children and adults working on "Hospital Row" at 7:00 to 9:00 a.m. EST during the work week. As a result, observing a different segment of the local population within a three block radius is an advantage for entities looking to cover a broad demographic.

Our bodies occupy a space and are always moving. Sometimes we are in the confines of our home or in a place like Glacier Point in Yosemite. The point is that humans in most cases move from place-to-place and behavioral changes take place during these movements. For example, walking along the boardwalk on a lovely morning in Miami discussing the color of the water is far different than waiting for the test results from a cardiologist in their Park Avenue office. Make no mistake; the space we occupy has a profound effect on how we behave as humans.

Example (Open Architecture & Bryant Park)

As the American icon Clint Eastwood once said "A man has got to know his limitations" was brought to light during a morning photo shoot in Central Park. If the ideas outlined in this report are to be taken seriously, then an open architecture must be in place. Accordingly my work with OASIS in the area of open-standards came to mind. Case in point: While it uses gender and age as its two prime components, other formulas may include additional components such as type of device and, or level of intensity (low/moderate/intense) that cater to a specific study need. The ability to add components is what makes the Observational Scenario viable, and is the foundation of our proposed open architecture. Scoping out a location also brought out three other interesting observations. First, the park is far too big to cover for one person to cover properly. Second, you could tell if a person was a local because most were walking their dogs and had pensive looks on their faces. Third, the monster of a camera that I was lugging around had a digital logo on the front of it. The first two observations were of no surprise, but the last one was. Why? Because my Canon EOS 1 uses film to capture images, while my Canon EOS 1D leverages an electronic sensor (CCD/CMOS). As a result, my camera may be construed as a true digital device. However, this study will only focus on smartphones and tablets regarding our park example.

Location: Bryant Park (Between 5th & 6th Avenue and 40th & 42ed Street in Manhattan)
Date: TBD
Time: TBD
Prime Factor One: Gender (M or F)
Prime Factor Two: Age (1-15 - 15-45 - 45+)
Additional Factor: People Using their Smartphones or Tablets to take Photos

As you will notice an Additional Factor component was added to substantiate the open architecture capability of the model. Again, almost any new component may be added because the goal was to start off with two Prime Factors and then layer-in information as required by a specific study. As a result, the Observational Scenario may be leveraged in both the public and private sectors regarding how digital devices are used in real world environments.

Choosing the proper location for a study is not an easy task and we need to take a step-back here to see why. We humans occupy a space, and travel from location-to-location. For example, on one trip me and my family left our hotel in San Francisco and drove our minivan to Yosemite. The next day we ventured to the Ferry House by foot and then on to the SFMOMA. Point being, we as humans gravitate to places we select for the most part.

Now comes the thinking part on how to choose a location. I had a day off on the 5th of July and time to do the Bryant Park study, but did not. Why? Because many people who live and work in Manhattan were out of the city for the 4th of July long weekend, which meant a majority of people at the park would be tourists and defeat the purpose of the study. The goal was to find a place that would have a 50/50 make-up, and while the location was fine, the date was not. Hence, a weekday, preferably Monday to Thursday would seem to be the most logical choices to do the study. Below are my Bryant Park findings regarding the use of digital devices.

Observation Scenario

If this report has one takeaway it is about not underestimating a real world testing environment. Not only was the 5th of July a bad day to do my testing, but finding what section of the park I would focus on became another. A trial run exposed an interesting observation. Most business people did not sit on the lawn or the inner circle. It was for a number of reasons which include higher temperatures brought on by direct sunlight and glare. As a result, most business people sat in the second circle or third circle from the lawn because the trees provided some protection from the sun's rays and it seemed always cooler in the shady areas. While this observation may seem trivial, it made a big difference on the people I was going to observe. Hence, do not take for granted things that may seem trivial because they may actually have a profound impact regarding the final results.

Location: Bryant Park (Between 5th & 6th Avenue and 40th & 42ed Street in Manhattan)
Date: 7/8/13
Time: Noon
Prime Factor One: 62 Women and 68 Men Total & 32 Women and 37 Men Using Devices
Prime Factor Two: Age (Two 1-15 - One-Hundred and Four 15-45 - Twenty-Four 45+)
Additional Factor: People Using their Smartphones or Tablets to take Photos (None)

Observational Results

Before we get to the hard numbers, the gray area regarding image capture should be revisited. For example, let us say that a project manager was on her smartphone to India dealing with an issue regarding user acceptance testing (UAT) pertaining to a current project from 9:00 a.m. to 11:59 a.m. EST while at the park, but then decided to take a photo of the large fountain at the eastern end to decompress at exactly noon while my study was taking place. This type of digital device use must be examined further. Again, while products like my Canon EOS 1D can take digital photos, it cannot send a text message or check an e-mail like smartphone offerings such as the Apple i5 and Samsung Galaxy S4. However, the aforementioned digital devices can also take photos. Hence, the quandary on how digital devices are used in real world environments. As a result, we will include an additional component called "People using their smartphones to take photos" to give the overall study a more accurate perspective on how digital devices are used at the park on a summer afternoon.

No fanfare and no excitement, but one surprise. I started at the NE side of the park near the bathrooms and ended at the SE side. My goal was to focus on the Second Circle from the lawn. Just to clarify, the park has a lawn in the middle and then an inner circular path surrounding the lawn (Circle One), then another circular path (Circle Two), and an outer circular path (Circle Three). While the Primary Factors came in close to expected, the Additional Factor did not. Why? Because out of the 130 people I observed in the Second Circle, not one was taking pictures with a smartphone or tablet. While noon may not be the best time to take photos, the sky was blue with some scattered clouds, which provided for some nice muted lighting. It was decent time to take photos (two posted on Facebook 7/9/13), but my assumption that people would be snapping away was wrong.

Regarding the numbers there were 130 people in Circle Two with a make-up of 62 women and 68 men. Regarding estimated ages, 2 (1-15), 104 (15-45), and 24 (45+). 32 out of 62 women were using digital devices, while 37 out of 68 men were. This translates to 52% use for women and about 54% men. These are the numbers and no + or – will be applied.

I was surprised not only with the Additional Factor observation, but also the dearth of children in the park. I was also surprised by the number of people using tables with full keyboards. I estimated that 70% were smartphones and the rest tablets & laptops. There seemed to be nice mix of both locals and tourist, which was the original reason why I selected this park for the study, but things, could be improved. For example, the lawn was closed until 5:00 because of the Monday Night Film Festival. As a result, a team of three could properly cover Circle One, Circle Two, and Circle Three. I would have also expanded the study in to three time slots of 9:00 a.m. - Noon - 6:00 p.m. EST to gain a better understanding of the human make-up of the park during different hours of the day. Regarding human behavior I would like to add additional components that include intensity levels, duration, and time in-between use. For example, does the subject stop and just people watch for a break, or do they call someone? These and other pertinent questions could be inserted as additional components into the equation to gain a better overall understanding on how humans behave in their chosen environment.

While I thought the Observational Scenario went fairly well, I was also very humbled. It taught me to never assume or taking anything for granted because things may defy logic and, or past trends. Such is the nature of our new fast paced world.

Results (Devoid of Influences)

It must be made clear that the testing methodologies outlined in this report are far from perfect because they use real world scenarios and do not mimic controlled environments in any way. It is similar in some ways to my bird watching experiences along the Hudson and in the Caribbean. The goal was to observe the subject or subjects in their natural environment without diving too much into the details. For example, a male bird has caught an insect and proceeds to eat it. Again, this is our first stab at real world testing and a baseline must be established.

Before we end this report a number of pertinent questions need to be answered. Who pays for funding studies on how digital devices are used in real world and, or controlled environments? For example, if an author or team of authors does not like the results will they add one or more components to the equation to get the desired results? Is the study being funded with private or public funds and are the results to be made public or kept secret? Again, the Operational Scenario outlined here can load-up on information like the make & model of devices used and other relevant manufacturer data that cater to a specific need. However, this report has taken a more nebulous path, which does not favor any one public or private entity. Case in point: If there were 130 people on the lawn at Bryant Park at noon on July 8 and 69 were using digital devices, then those were the numbers used for the report. Pure and simple.

Postscript

This report is meant to be exploratory in nature and should not be taken as verbatim. It is meant to expose new possible paths in digital device testing and augment, rather than replace proven testing methodologies. We as humans are changing every day and digital devices are having a profound impact. Some of these changes carry benefits, while others do not. The old saying "there is no free lunch" is clearly the case when using these types of devices. Isolation from the physical world is one negative, which in many instances is leading to a degradation of social skills. I "want" and "I need" is replacing "what can I do for you" thinking seems to be the new mindset. Using digital devices may not be entirely to blame, but encasing ourselves in silos is not helping matters. As result, we must dive deeper into the world of digital device testing to gain a better understanding on how technology is affecting our day-to-day lives.

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