

study of habit formation on mobile phone:

Guide : Prof. Anirudha joshi

Project by,
Vikram singh parmar
01613010

.....
habit formation phone mobile habit user pattern formation interface habituated inherited cultural influences

Approval sheet :

Special project

Study of habit formation on Mobile Phone

By
Vikram singh parmar

Guide:
Prof. Anirudha joshi

Approved for the partial fulfillment of the requirements for degree of **Master of Design in Industrial Design.**

at
**Industrial design centre,
Indian Institute of Technology, Bombay.**

Guide:

Internal examiner :

CONTENTS :

Introduction - ----- 4
Why this study ----- 5
Objectives----- 6

Other contemporary research----- 7
User behavior and influences----- 8- 9
The word "HABIT" -----10
Analogy between Need and Habit -----11-12
User and contextual interview ----- 13
Demographic data ----- 14
Questionnaire asked ----- 15
Methodology ----- 16
Analysis---- Purpose driven habit----- 17- 21
 Non purpose driven habit -22- 25

 Gender based habit ----- 26
 Lessabled user -----27
 Hardware related habits -28
Conclusions -----29

INTRODUCTION :

There is no doubt that cell phones have had an impact on society, both good and bad. The possibilities of the usefulness in carrying a cellular phone are nearly endless - **solving problems ranging anywhere from car problems to a heart attack.**

“Mobile phones have finally penetrated the entire nation,” Fausto Cardoso, president and CEO of BPL Mobile, a cellular service provider, told IANS.

“India is really ready for accelerated growth in the year ahead”.

All though mobile phones have been around for about thirty years, it is recently that they have become widespread. It has been estimated that around 80 percent of the population will soon have one.

Study of mobile phone has helped locating some habits, which are unnoticed by the user, unless is been told. All the habits documented has some connection with the users previous behavior in similar context. Once the nexus of habits and primarily where it originates is understood, the whole polemics of technology and habits seems related or connected to each other.

Study also tries to elucidate the fact of habit formations not as a isolated process.

WHY THIS STUDY

Study of habit formation is required to decide and update the computing technology as per the users requirements. **This study tries to reveal the chain of habits which are formed because of social set up and can be incorporated at the time of conceptualizing and defining the product specifications** as all the companies provide their customers a product which is semantically associated to user in some ways.

After a tectonic era, all the computing giants are now focusing upon ‘**Human Computer Interaction**’ They want their technology to get personalized to their user groups . **Research based on computer interface ,software developed habits, computing habits, social habits, gender behavior, can formulate the design,** if analyzed optimally.

OBJECTIVES OF THE STUDY:

Studies carried out in the project incorporates 16 users .These users, 8 males and 7 females and 1 kid came from different professions, age groups, social setups. The scope of study reveals some habits which question designers to rethink about the interface at hardware and software level. Experiment results have different issues for different categories, which can instigate the revolution in designing the phone, by looking into customizing pre encouraging modularity at interface level other than the new features.

because of the *variety in user, handling the phone varies from person to person.* project tries to elucidate some habits which can have some design implication.

SIMILAR STUDIES AND THEIR IMPLICATIONS:

“Apple I Mac carried out an extensive research before launching any apple product for a target user segment. Software companies are inclined towards making introspective studies to upgrade their software. As we have PageMaker 6.7 Photoshop 5.5,6,7 every time their is a feature and interface is upgraded, BASED ON THE EXTENSIVE RESEARCH CARRIED OUT BY THEIR DESIGNERS.

Mobile phone as technology will , Although the 10.5 million mobile phones may look measly in a country of one billion people, industry experts say a revolution is in the making and the users are forecast to grow to 30.9 million by 2005

The airtime tariff charged by cellular operators have dropped from Rs.4.50 a minute in 2000 to a rupee a minute on an average for an outgoing call, making it the lowest in the world.

user behavior and influences :



So, **every user** and the **cultural influence on the user** has a very important role to play. ***This influence could be education, social status, exposure to technology.***

It is very important to understand the level of comfort; user has with other contemporary technologies than mobile phone. As user level of understanding the phones interface depends on the user's exposure.

Users have interaction with mobile phone at various levels:

- Operation mode.
- Non operating mode.
- Transition mode (carrying the phone physically)
- "users have made statement of treating their phone as human machine which connects them to any place at anytime. "

FACTORS INVOLVED IN FORMING THE HABITS

People learn best:

- When they are free to explore without the constraint of a system.
- When it is their selfish interest to do.
- From someone who knows, what he or she is talking about.
- When condition are right and they have opportunity for practice and repetition

Mostly what people know :

- They have acquired through a systematic educational process.
- Have learned by experience in trial and error fashion.
- By natural progression of self discovery rather than some teaching process.
- It's a result of consciously pursuing their goals - solving problems as they go.

Anything worth doing is worth doing badly—— at first
- dick karpinski.

HABIT

Habit is never formed in isolation. It is always inherited from previous personal experience. There is a very thin line between habit, practice and custom.

Habit is involuntary; it implies a doing, unconsciously and often compulsory. Its an acquired mode of behavior that has become completely involuntary.

Practice is to perform or work repeatedly, so as to become proficient.

Custom is usage, steadily associated with an individual or a group as to have almost the force of unwritten law.

This paper, includes the study of habits on a mobile phones.

Habits observed, falls in some category, ie

Habits with **some purpose** behind them, **some without purpose**, **gender based** habits, **design driven** habits, in design driven habits both hardware and software habits are included, **less able users** also have some cultivated habits from the design.

Habit formation also connotes influence from cultural factors, related to users, that includes users background in terms of education, economical, geographical locations, technical savvy ness on other product other than mobile phone.

Focus of the study is to observe the habits formed by users, while using mobile phone and elucidate on some design approaches taken by designers, while designing interface of the mobile phone. Mobile phone has small computer, which remains activated all the time, so there is “**human computer interaction**” all the time, and subsequently habits are formed after human interaction with the technology.

Study tries to reveal this endurance as a very endogenous activity.

.....
habit formation phone mobile habit user pattern formation interface habituated inherited cultural influences

Analogy between need and habit

Hymes, in his book *Child under Six*, **describes a habit as an action which can easily be broken.** “If you run into any major difficulty at all,” he writes, “Beware! You are probably not dealing with an old outworn habit. The chances are that you are tampering with a human need.”⁵

“It is not in the nature of nature,” writes Salk, “to provide organisms with biological tendencies unless such tendencies have survival value.”¹

We are born needing. We have need for air, food, sleep, and shelter. We have need for intellectual and physical stimulation. We have a need to be loved and touched.² If any of these needs goes fully or even partially unattended, the person hurts; and in the case of an emotional wound, the person may spend the rest of his life struggling to soothe the initial hurt.³

If the body indicates a need for food, treating it like a habit and disregarding it will not make the hunger go away. Ignoring the sensation of wanting to lie down and sleep will not cure one forever from having to sleep eight hours a day.

Analogy between need and habit

Let's begin by saying "In cell phone, charging the phone is a need not a habit.
Chewing the antennae is a habit not a need"

From need the design emerges and from design habits

Some habits are **inherited**

Some habits are **forced** on the user **by society and design.**

Some habits are **involuntary** and **subconscious** in our mind,

Some habits are formed in **due course of using** a product

Based on the above factors, the various functions in the product are **accepted, adapted or rejected by the user.** Thus functions evolving user interaction in the product, the user is habituated faster, some with time and some never.

If the interaction and function in the product are based keeping in mind the above parameters, we might churn out more "easy to use" products by the end of the day.

USER AND CONTEXTUAL INTERVIEW

Purpose of the interview was to identify the user pattern on different mobile phones, **to study the interface between the user and the phone.**

To achieve that, task which are more popular among the users ie smsing, making a call, saving the numbers and messages, were given.(annexure)

Questionnaires responders

Users: 16

Females: 7

Male: 8

Kid: 1

Experiment subjects

Males: 5

Females 5

User profile:

Designer

Doctors

Technical savvy

Marketing field

Stock exchange

Home makers

Students

Business (small, medium, large)

Workers (sabjiwala, autowala, construction contractor, carpenter)

Demographic data

- Age
- Professions
- Socio economic background
- Techno savvy

Understanding the users usage pattern

- Calling
- Receiving
- Storing address
- Sms
- Storing sms
- Billing
 - Prepaid
 - Regular payment
- Enquiry
- Emergency
- Simlock
- Pinlock

.....
habit formation phone mobile habit user pattern formation interface habituated inherited cultural influences

Questions ASKED:

Why do you use mobile phones?

How do you USE it?

When do you use it?

During non use mode how do you keep it?

In which situation you don't use it?

Do you abuse the phone?

There is basic difference in the model at hardware and software level
how do they affect usage?

What do you feel about mobile phone and their significance in your
routine?

How do you carry to?

How much function do you know about the model you are using?

And if you don't know is that deliberately avoided or is there a reason?

Since how long have you been using the mobile phone?

What other technical device are you familiar with?

When do you charge your phone and where do you charge it?

Any particular action which happened very often?

Methodology followed:

To find out the habits, **RAP (Rapid Assessment process)**, is used.

RAP , is basically :

- Very domain related.
- Has a wider scope than contextual inquiry
- It's a very iterative process of finding information.
- It's more related to perception and opinion.
- It's awareness related.
- It talks about the priorities.
- Talks about cultural and community issues.

Design always has some purpose. Interaction between the user and product always forms a conscious or unconscious matrix, on operability of the phone. users choose , their own way of dealing with the interface.

Habit formation is also influenced by users active and passive roles in a system.

Habits are very location specific, so where and in what situation the user is using the phone is very important, demographical data has its significance in habit formation.

Once users matrix of operability is formed, habit can be identified.

“With repetition, or practice, your competence becomes habitual and you can do the task without having to think about it.”

Thomas Lewis (1974)

.....
habit formation phone mobile habit user pattern formation interface habituated inherited cultural influences

ANALYSIS

PURPOSE DRIVEN HABIT (existing technology driven habits)

Function: SMS

It's a function, where user communicates with the other user, by typing a message

This technique is already being functional for the last many years in the Internet browsers.

Techno savvy users are already well conversed with the technology of yahoo or MSN chatting and therefore quickly adapt to the habituated technique and implement it in the cell phones.

SMS is an economical text base supplement to calling up.

Habit: Chatting forms a very integral part of the human communication. This is a strong habit very well incorporated in the SMS.

Insights of Cultural / technical inheritance of habits:

Probing into the various classes in the Indian context, the breed 1) "**bania**" a classic economical business man, never answers the call but SMS/calls back, because receiving a call more expensive than making one via the MTNL line.

2) **Teenage techno savvy group**- are much habituated to the video parlors and computer games, thus cell phone links them to this habit. SMS then becomes a communication game, by sharing jokes and exchanging expressions. "The art of SMSing".

Insight: Art of smsing and sending the expression is addictive.

Sms service is complimentary to human psyche of being economical, which is very well tapped. As they are habituated to it.

Design idea: A step further in rendering interactivity and user friendliness to the SMS is giving expressions as add ons.....concurring, the above habit is an opportunity to be economical, as calls can be avoided.



chatting screen

PURPOSE DRIVEN HABIT

Function: Checking MAILS ON THE PHONE

Habit: This habit is a follow up of checking mails on the internet. Mobile phone use similar method. "It is **mobile internet**" **It saves time and is flexible.**

Insights of Cultural / technical inheritance of habits:

1) Highly mobile marketing personnel, tech savvy professional and business class, are already addicted to checking mails quite frequently with every passing hour.

Insight: Thus mobile emailing is a good solution to the already habituated "emailing" class. (for the moment wireless net connectivity is not available , therefore laptops and palm tops have limitations)

PURPOSE DRIVEN HABIT

Functions: mobility of cell.

Habit: not using telephone booth, even when its close by, but communicating by personal mobile

Insights of Cultural / technical inheritance of habits:

The USP of mobility and convenience of anywhere anytime, with less effort, is buyable.

The yellow box incompetence syndrome, and the lack of drive to make an effort to use a coin driven device, promotes the cell usage.

The unhygienic condition prevailing in the public phone booths, are a deterring factor to many users. Cell phone being a personal commodity at their service is an added advantage.

PURPOSE DRIVEN HABIT



Function: To get reminder of a task/time

Habit: using phone as alarm clock,

Insights of Cultural / technical inheritance of habits:

Using alarm clock is quite often a routine in the user's life. It is used quite extensively by all static and mobile users.

Insight: Incorporating the alarm clock in a watch and later in a cell phone, rendered mobility and convenience to the alarm clock needy users.

Design idea: As Microsoft outlook, uses meeting reminders with little notes attached. Similar technique could be incorporated in mobile phone.

PURPOSE DRIVEN HABIT

Function: To lock the phone, Keypad locking to avoid self activation of the phone.

Habit: Locking and unlocking the phone when not required.

Insights of Cultural / technical inheritance of habits:

The very concept of locking a possession is a human virtue.

habit originates or could be related to many things like normal activities of locking your home, closing and open a pen cap to start writing.

Even when the user is unsure of phone being locked, he does it as a precautionary measure, often adding confusion...of locked locked....oops unlocked.

Design idea: Currently only one small icon or text indicate the status of phone. Design solution could be a hardware which locks and unlocks the phone automatically to avoid confusion.

Non purpose driven

Function: To track the missed calls.

Habit: checking phone in every 10 minutes to keep the track of calls.

Insights of Cultural / technical inheritance of habits:

Of and on looking at the watch to see the time once every few minutes.

regular gazing at the train tracks to see the incoming train.

checking mail on net frequently shows restless the impatient user.

This habit is carried on well to on the cell phone to check the missed calls frequently.

Non purpose driven



Habit triggered by the Product form

Function: The function of antennae is to receive signals

Habit: The antenna is happily used by the users to rotation, chewing and playing. Also it acts as a handle to pull the phone from the pocket.

Insights of Cultural / technical inheritance of habits: - Human tendency to fiddle and fickle when tensed, is normal. Chewed pencils, pen caps, nails are to name a few classic examples. Cell phone unhappy antenna is a happy addition to the above list...finally it breaks. Nokia was wise, to introducing a new model with antenna integrated inside the form. (Much to the annoyance of the chewing users)



Non purpose driven

Function: Phone flap to cover/switch off the keypad in the phone-Eriksson

Habit: To play with the phone flap keep flipping it Eriksson model has this cover, which people use it switching on/off the phone



habit formation phone mobile habit user pattern formation interface habituated inherited cultural influences



Non purpose driven

Displacing existing products based on habits: replacing it with one all encompassing, to cater simple needs of the user.

- Hand watch
- Pocket calculator
- Calendar
- Pocket Address/phone book
- Notepad

Function: Display time/ run calculations/scribble,

address books, check dates on the cell phone

Habit: To wear a hand watch, carry a pocket calculator, address book, check the time, run simple calculations on the **cell phone rather than using the watch** and calculators.

Insights of Cultural / technical inheritance of habits:

The frequency of wearing a hand watch by the mobile users is decreased.

The mobile users have started avoiding carrying the pocket calculators, as the mobile phone is equipped to make simple calculations.

Carrying, pocket address book, calendar, notepad, are slowly being replaced by the cell for certain **target segment of users.**

habit formation phone mobile habit user pattern formation interface habituated inherited cultural influences



Gender based habits

Gender has a lot to do with using and adapting to technology.

Females

1) In the Indian context, the dress poses barriers to carrying the cell phone, making the women to hold the phone in hand or place it in the purse. Hanging on neck is not such a convenient solution.

Disadvantage:

Frequency of missed calls by females is higher than males. as most of the time the phone is inside the bag and they cant hear it ring.

2) Females are comfortable and satisfied using the basic phone functionalities and often don't explore more. Limited set of functions serve the purpose quite well for females.

They don't often feel the need of upgrading the phone.

Suggestion: to design a phone which has just the minimal function required by most of the females

Male

1) Males have a convenient solution by carrying in the pocket and hanging it on the waste line.

2) Males have the habit of changing the phone models.....

New brands with updated technologies, just like playing games marios1, mario2, Nokia 3310, Nokia 3110.

They are more comfortable in adapting to the new models and technological changes and a more indulging in terms of understanding technicalities of phone. They use currency converter, check mails, they pay bills more often (13/1 female knew of a currency converter)

Lessabled user- blind

-Has the habit of calling up by using the pre numbered and configured dialing option.

E.g. Dialing number 1-marx, 2 Lenin

-They are habituated to bigger phone model, where one can feel the interface of the phone

Design idea:

could have both text and audio facility.

So that phone can enable these users to do SMS.

AUDIO feed back will always help them.



Hardware related Habit.

Sony model has just 5 switches to operate. The scroll bar can do every other function, This facility is habit driven and is quite convenient for the techno savvy users using computers and scroll bars.

Users

1) Using different models is normal. Once the user is habituated to the model of a particular brand, they stick to brand loyalty.

Design idea:

A factor for strong consideration for the companies is to make the interface simple to navigate and user friendly.

Since the interface has a small screen and a lot of facilities are being added in with every model, hence dwelling into system complexities.

CONCLUSION.

Very soon mobile phone will be ubiquitous. Reaching to mass with communication facility and trying to make niche in every users life is a challenge

All users have their sets of likings and disliking based on that nowadays technology is rated by the users.

The purpose of the study to classify these likings and disliking as habits (liking) which are formed by the user and some are consciously done.(disliking)

study gives insights into relevant classification which can question interaction of mobile phone. simultaneously elucidate Hardware and software aspect of the product and tries to relate communication technology to humans in a better way.

The study could lead to the idea of designing customized phone.

Modularity at the interface level other than upgrading it with new features.

The design should evolve keeping the incorporation of human habits in mind.

Today we have 37 million fixed-line and 10 million mobile phone subscribers in India. In a few years the equation will change dramatically and mobiles will become the preferred choice of communication for most Indians