

# Cross Cultural Study: Perception, Usage, and Adoption of Technology

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## ABSTRACT

The primary goal of the project was to understand the cultural similarities and differences in perception, adoption and usage of technology across three cultures (US, India and China) in the domain of home entertainment. The methodology used for this research project includes a combination of “etic” and “emic” studies of the cultures. The etic perspective is based on literature review of various behavioral models and cross-cultural theories. The emic perspective is based on ideation sessions in each country and an ethnography study that revolved around perception, adoption and usage of technology by participants representing the target group.

The study resulted in an understanding of the cultural aspects within the domain of home entertainment, which ranged from “expected cultural trends” to “unexpected cultural trends”. These observations were used to synthesize a framework which can be used by designers and innovators to identify opportunity spaces/concepts that have a greater likelihood of success in a specific culture or across several cultures.

The insights gained from this study indicated that it is important for cross cultural explorations, to focus on “unexpected cultural behavior”. Unexpected cultural behavior is a likely indication of change that the culture has undergone or is in the process of experiencing.

A three step process (SL method-developed at HFI) was used to understand the unexpected behavior observed for the sample population being studied and its relevance to the domain.

## Author Keywords

Ethnography, home entertainment, cross-cultural study, cultural dimensions, cultural similarities and differences, etic, emic.

## ACM Classification Keywords

H5.m. Information interfaces and presentation: Miscellaneous.

## INTRODUCTION

“Culture” is one of the important drivers that affects the perception, adoption and usage of technology. This in effect determines the possibility of success/failure of products and devices within cultures. This project aims at understanding the cultural nuances across three cultures in the domain of home entertainment. The insights gained from this project are expected to set the stage for further research and to help identify the important issues that need to be considered for cross cultural explorations.

The cross cultural study compared India, USA and China with respect to perception, adoption and usage of technology in the domain of home entertainment for nuclear families.

The study provided many interesting insights about perception, adoption and usage of technology in the context of home entertainment. Similarities and differences in the following aspects were observed:

- The types of media that the families owned.
- The combinations of media that the families preferred.
- The way the physical space of the homes influenced media activity.
- Need for a combination of multiple media.
- Effect of cultural dimensions on media adoption, perception, and use.

The project was executed primarily out of India, with the core team from HFI being involved in the primary research in the three countries. The project comprised of an extensive literature survey, ideation sessions in each country and in-depth interviews with six families in each country. The target population was defined on the basis of a previous HP study. The ethnography phase of the study is the focus of this paper.

## METHODOLOGY

The methodology was developed in consideration of the primary goals and available time frame of the project. It revolved around combining an “etic” study of the cultures

with an “emic” understanding gained through primary research. The etic study was accomplished via extensive literature review that included cultural theories and cross cultural studies by numerous researchers. The emic study was done in two parts. The first part involved ideation sessions with “experts” from each culture. The insights gathered from the ideation sessions were used to lay a framework for the second part which comprised of in-depth interviews with a representative sample of the target population.

The ethnography study focused on media in the lives of the target population within the domain of home entertainment. The data that was collected included the current and projected media usage, media needs, and the role of “culture” in the space of home entertainment.

**ETIC PERSPECTIVE**

The domain for the study was selected as “home entertainment” as it was considered an area that would be the least affected by the influence of ecosystems (which could be expected to vary) in the three cultures. The definition of the target population was based on family type, socioeconomic background and a set of psychographic parameters.

The secondary research on the three cultures included cultural theories by researchers such as Kluckhohn and Strodtbeck, Hall, Witkin and Berry, Hofstede and Trompenaars. Cultural dimensions were chosen as a tool to map the nuances and transitions in the three cultures, and were selected on the basis of their relevance for the domain selected. The cultural dimensions were then grouped as “primary” and “secondary”. Power distance, individualism/collectivism, long term orientations, uncertainty avoidance and masculinity/femininity were categorized as primary dimensions. Context, time, universalism, particularism, neutral-affective, achievement-ascription, personal space, and independent versus dependent self were categorized as “secondary dimensions”.

**EMIC PERSPECTIVE**

The cultural dimensions were used to map the observations about perception, adoption and usage of technology in the three cultures during the emic phase.

The emic perspective was gained through ideation sessions and in-depth interviews in the three countries. The ideation sessions were conducted in each country with three experts in the fields of home entertainment and cultural/social anthropology.

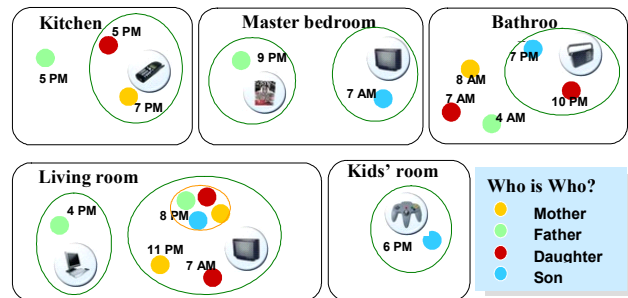
Scenarios depicting the influence of cultural dimensions within the domain of home entertainment were used as triggers during the ideation sessions. Cultural dimensions, their relevance and influence on the perception, adoption and usage of technology were the focus of the ideation sessions.

The significant outputs from the ideation sessions were:

- Insights on relevance of the cultural dimensions within the domain of study
- Understanding of transitions within culture
- Understanding of variables that affect the dimensions within each culture

The ideation sessions were followed by an ethnography study that involved six families from each country. The families were selected using a psychographic screener and parameters such as family type and socioeconomic background. The participants were nuclear families based in Mumbai, Shanghai and New York. The primary goal of this step was to get a deep understanding of the perception, adoption and usage of technology by the target population, in the domain of “home entertainment”.

Prior to the in-depth interviews, the participants were sent “media boards” that they were asked to record their media usage on for three days. These boards enabled each family member to record time, space and emotions associated with the use of various media within the house. A summary of media and space usage by one US family is presented in Figure 1.



**Fig.1 Summary of Media and Space usage for one US family**

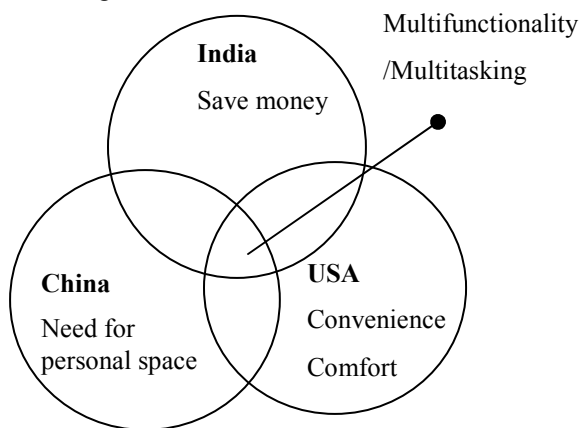
During the in-depth interviews, open ended probing and various interactive exercises were used to help the participants articulate the following:

- Activities during free time at home
- Modes of entertainment that they most preferred
- Role and presence of media in daily routines
- Media usage patterns (shared v/s individual)
- Current and future media ownership
- Buying decisions and their decision making process.

To find a relation between culture and the perception, adoption and usage of technology (media devices in the households), the participants were engaged in an exercise where possible usage models for combinations of media (TV + print, TV+ any media, and Radio + any media) were probed. This exercise was done in two parts. The first part focused on TV+print combination, where the participants were asked how and where they would use this combination

in their daily life. This activity led to ideation of various usage models with the family members. In the second part, various entertainment devices were shown to the families and each family member was asked to make possible combinations (TV+ any media, and radio+any media) of the entertainment devices that they had thought of in the past or had wished for. The participants were also asked for their preference and the drivers behind the needs for the particular combinations.

The usage models and the media combinations were then used to highlight the cultural similarities and differences. Comparison of the main drivers of usage models (for the TV + any media combination) for the three cultures is presented in Figure 2.



**Figure 2. Comparison of drivers for usage models for TV + any media combination**

The observations from the ethnography study were mapped against cultural dimensions to understand the impact of culture on the perception, adoption and usage of technology in the domain of “home entertainment”. The findings of the study were synthesized and depicted in the form of personas. One family persona was created for each country: the Patels represent the sample population from Mumbai, the Smiths from New York and the Qins from China. A synopsis of the influence of one of the primary dimensions, its relevance and role in the lives of these personas is presented below.

### INDIVIDUALISM/COLLECTIVISM

**The Qins’** are surprisingly more individualistic than expected. While they are very close knit, each individual does their own thing within the home. The multiplicity of media devices seems to partly stem from this need for each individual to have their ‘space’. There is also rather limited interaction with friends and extended family with infrequent visitors to the home. Meetings with relatives happen outside the home, very often in ‘family’ restaurants.

Within the home, the family is more individualistic, but outside their homes, they are more collectivist within a close group of relatives and friends.

The Qins use their media devices individually most of the time, even within very limited physical space. They achieve this by having multiple devices. Devices which are not in abundance (computers), are used in a ‘relay’ fashion. Family members sit in the same room using different devices shifting from one device to another seamlessly.

The Qins are not too comfortable with the idea of their children’s friends visiting. In addition, the idea of friends visiting without any parental supervision is not acceptable.

**The Patels** show moderate to High Collectivism. The Patels are very close to their relatives, who stay in the same city. They usually try to meet them during holidays and weekends. Family friends are usually Riya and Alok’s office colleagues or parents of their children’s friends. Riya and Alok do not mind if their children go for studies or for play to their friends place but they do mind if their children stay over for the night.

The Patels stay in a small house. Most of the activities are done together as a family. The children are more individualistic and even Riya at times feels the need for personal space and the drift towards individualism.

The **Smiths** are individualistic, but in a moderate sense. Within the family they behave in a very collectivist manner. This is evident, for instance, from their desire to think about the other family members when they decide on entertainment options. This can be seen especially in the way the parents care a lot about their children’s happiness. They also like to do things together, like having dinner and watching TV. About once a week the whole family watches TV together. Family members are more frequent visitors to the house than friends, who are rarely invited over.

### DESIGNING FOR THE “UNEXPECTED”

It is common to look at the cultural dimensions that characterize a culture and design for those characteristic dimensions. While this is a good beginning, however, given that a culture is dynamic (to a lesser or greater degree), it is necessary to chart the changes that the culture undergoes over time.

For example, the Patels were expected to need very little ‘personal space’, as per the way this specific cultural dimension has been evaluated for India, in the past.

However, some members of the Patel household (wife and children), though making do with very little physical space in their home, indicated their desire for more ‘personal space’ (the opposite of what was expected). Some of their media wish list was impacted by this desire.

An important aspect of any cross cultural exploration, therefore, needs to be the focus on unexpected behavior. Unexpected behavior would very likely be an indication of change that the culture has undergone or is in the process of experiencing.

At HFI, we have begun using a method for design research and innovation work. Specific parts of this method were applied in this project.

The three step process (SL method) enables us to build a framework to understand the unexpected behavior observed for the culture being studied (more specifically, the sample group in question) and its relevance to the domain being studied (media in home entertainment, in this case). The three steps of the process are:

1. Detail out the attribute list of the domain (of each media in this case)
2. Identify cultural Choke points and pressure points for target group
3. Compare media attribute list with cultural choke and pressure points to identify optimum 'fit'/opportunity spaces

A performance analysis view identifies choke points. These are tasks that are difficult and physical needs that are not fulfilled. An example of this would be a lack of health information or difficulty in planning the distribution of the salts that save lives during cholera outbreaks.

The second type of insight is the psychodynamic pressure points. These are based on the emotional needs of the target population. For example, there may be a need for status markers so any type of certificate of education is valued.

## CONCLUSIONS

Cultural dimensions cannot necessarily be applied uniformly even within one country. Parameters such as region within the country, age group, income level and gender influence the cultural profile of the population and hence cause variation within one country.

It is common to look at the cultural dimensions that characterize a culture and design for those characteristic dimensions. While this is a good beginning, given that a culture is dynamic (to a lesser or greater degree), it is necessary to chart the changes that the culture undergoes over time.

An important aspect of any cross cultural exploration, therefore, needs to be the focus on user behavior resulting from the changes that a culture undergoes over time. User behavior that is different from what is predicted for that culture would very likely be an indication of change that the culture has undergone or is in the process of experiencing.

This change is in part, a reflection of the rapid economic changes and integration in the global market through globalization. This suggests that the design environment which addresses culture is potentially very dynamic, creating great opportunities for successes as well as for gross failure.

Do the compensatory needs of people act as major drivers in determining cultural behavior, specifically in the realm

of their media usage? A compensatory model looks at a given culture and its characteristics. It posits that these characteristics can cause people to behave in a certain predictable way but at the same time the characteristics can put pressure on people. This causes people to behave in accordance with their culture but also seek release to the consequences of the constraints of the culture, at least in subtle ways. This behavior would be classified counter culture.

If the 'compensatory model of media usage' is indeed correct, then it implies a shift in focus from the 'given' cultural characteristics to the 'tensions' between the 'given' and the 'desired'.

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