

Research at the speed of business...

## Contextual Innovation & Design Research Services

Contextual Innovation is a systematic, multidisciplinary process of inquiry into the frontiers of user system interaction, gaining knowledge on markets, people and their context to develop novel, and more useful and effective products and services...

- Research support for business innovation in emerging markets
- Ethnography & qualitative methodologies for culturally appropriate design
- Product realization & localization in global markets
- Experience modeling & design research

Center for Excellence in Ethnography & Contextual Innovation  
Human Factors International Pvt. Ltd., Mumbai India

# 1 What we do

## Who we are?

Human Factors International Pvt. Ltd. is a fully owned subsidiary of Human Factors International, Inc., a 100-person, \$13 million user-centered systems integration company. Our mission is to improve the interactions that people have with computers and other digital systems. We offer end-to-end solutions for Web/Intranet and Internet-based applications, Software Applications, IVR Systems, Handheld Devices, Telemetric, Public Service Networks, Medical and Automation Equipment, and help make our clients' existing offerings more user-centric, optimized and efficient.

Responding to the market needs for strategic design research and innovation as a partnership based service to corporations who develop IT & C products & services for the emerging new markets as well as reinventing existing markets, we have established a Center for Excellence for Ethnography and Contextual Innovation that mainly focuses on:

- ♦ Research Support for Business Innovations in Emerging Markets
- ♦ Ethnography & Qualitative Methodologies for Culturally Appropriate Design
- ♦ Product Realization & Localization in Global Markets
- ♦ Experience Modeling & Design Research

## What is Contextual Innovation?

Contextual Innovation is a systematic, multidisciplinary process of inquiry into the frontiers of user system interaction, gaining knowledge on markets, people and their context to develop novel, and more useful and effective products and services.

Users are the best source for new ideas. Our research methodologies, rooted in the social sciences (cultural anthropology, sociology, psychology), help us study potential users' "situated" behaviors, goals, intentions and thoughts. Unlike traditional market research, which employs staged focus groups and superficial questionnaires as their main data gathering tools, our tools and methodologies elicit "deep" responses—the building blocks of tomorrow's designs.

Our methodologies are organized into four stages:

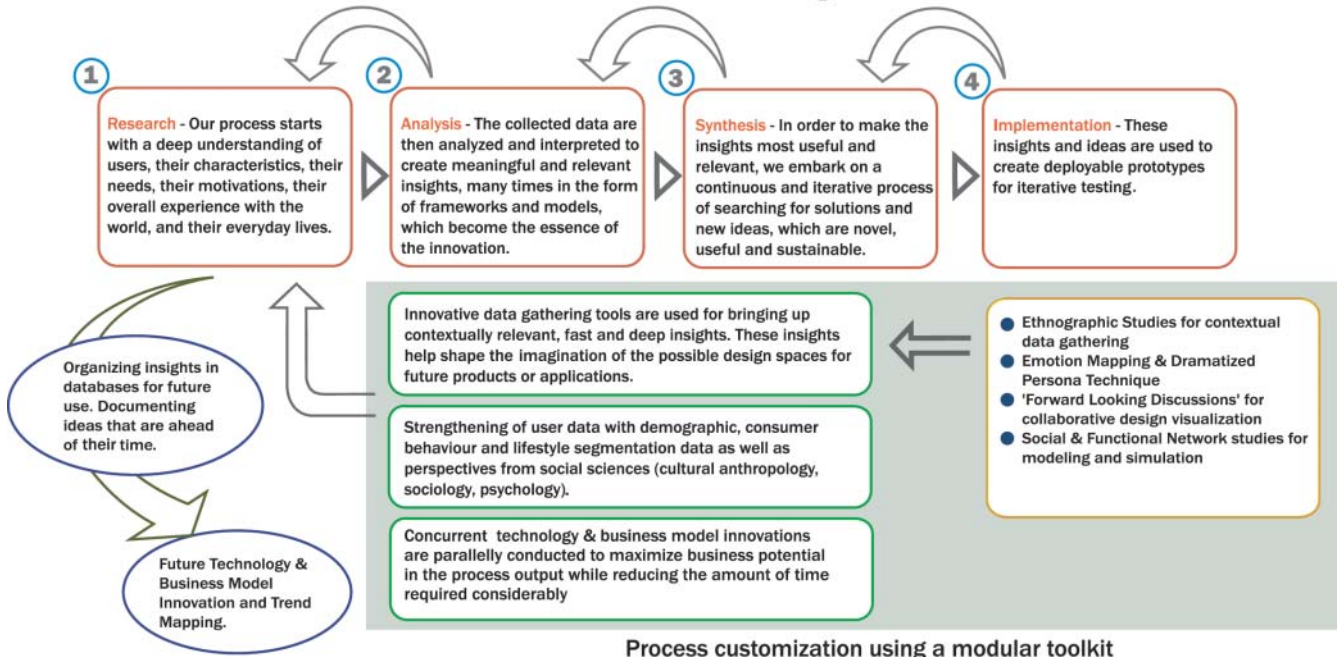
**Research** – Our process starts with a deep understanding of users, their characteristics, their needs, their motivations, their everyday lives, and their overall experience of the world.

**Analysis** – The collected data are then analyzed and interpreted to create meaningful and relevant insights, many times in the form of frameworks and models, which become the essence of the innovation.

**Synthesis** – To make the insights most useful and relevant, we embark on a continuous and iterative process of searching for solutions and new ideas, which are novel, useful, and sustainable.

**Implementation** – The insights and ideas are then implemented to create deployable prototypes for iterative testing.

### Contextual Innovation - Process model of the design research Toolkit



# Fact Sheet and Recent Projects:

## Key Expertise:

- ♦ Study the culture, lifestyle, and preferences of a specific market or culture in order to determine the type of products, services, messages or strategy that best fits.
- ♦ Observation and a competitive analysis of how your products, services, and brands are being used and perceived by your customers.
- ♦ Renew or redefine your product offerings for a new market segment.
- ♦ Research the social and cultural trends that affect your business, positioning, brand, products, and services.
- ♦ Establish a sustainable partnership with your company to streamline your product development process. Define and implement an internal process for innovation.
- ♦ Opportunities Analysis for existing markets to make the best of a new technology or capability you have developed or acquired.
- ♦ Proprietary Competitive Analysis that helps businesses understand their overall brand experience through real customer interaction.

## Industrial Design Capabilities

The industrial design (ID) capabilities compliment the process of contextual innovation. ID helps transform the design insights from contextual innovations into concrete product ideas. The team at HFI has extensive experience in managing a complete product design life cycle projects for industries such as automotive, consumer products and electronics, healthcare and electrical equipment. The expertises include:

- ♦ Understanding “Product-User-Environment-Task” domain and follow a system design approach
- ♦ Product safety and ergonomic studies
- ♦ Exploration of form based on product function
- ♦ Quick prototyping for iterative design process
- ♦ Design optimization based on value engineering techniques
- ♦ Support detailed technical design
- ♦ Product aesthetics and visual communication
- ♦ Development of functional prototypes for field studies and testing

## Media literacy project

**CLIENT: HP Labs**

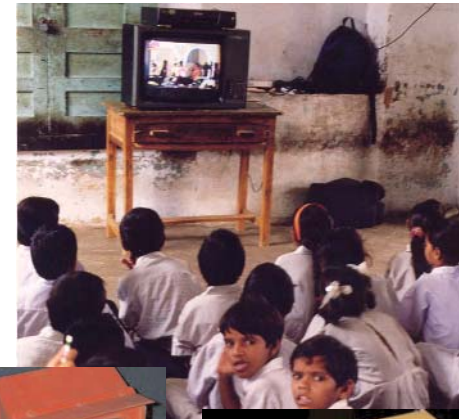
### BACKGROUND

Study the emerging market (India as pilot) to describe the cultural context, identify user needs and generate new business and product ideas.

- ♦ How things might be different in the future compared with the present.
- ♦ How things are today, and also how current technology is actually used.

### Ethnography of media use

- ♦ In addition to the main interview and traditional data gathering techniques like questionnaires, an experimental form of data gathering using cultural probes (including a disposable camera, media diary in the form of a post box etc.) was also used.
- ♦ “Cultural Probes” (inspired from the Presence Project from RCA, UK) aim to capture a more emphatic understanding (lifestyle and mindset) of the user than traditional (impersonal) methods like questionnaires / focus groups.
- ♦ At the end of ethnography, data collected included photographs, interview transcripts, media maps (showing media consumption within and out of individual houses), sound recordings and data from the Cultural Probes.



## Contextual inquiry & user research for mobile communication in Indian marketplaces

**CLIENT: NOKIA Finland**

### OBJECTIVES

- ♦ Research end user needs and wants, specific to the Indian market.
- ♦ Identify communication patterns of Indian users in general.

### Contextual Inquiry

The study involved observing how people communicate, and organize their life. The observations and interviews were conducted at the work place/home or other natural environment of the user. Detailed notes were taken about the communication styles, artifacts, interruptions, error recovery, behavior, relationships, environment, workspace, and other factors influencing the communication.



# Recent Projects:



## Design of localized ATM for low-income urban consumers in India

CLIENT: NCR Scotland

### BACKGROUND

- ♦ ASAN was developed by NCR Scotland and IIT Mumbai as a low cost ATM for a low usage Indian market.
- ♦ The objective of the testing was to evaluate ASAN in terms of its usability, aesthetic appeal, cultural identification and the target user group's willingness to use to device.
- ♦ ASAN was tested against a control machine, the Persona 70, which is used extensively across India.

A new probing methodology was created using cultural mnemonics and popular genres to get rich ethnographic data in the context of banking/saving and ATM usage among low penetration areas in India. This new methodology uses "Emotion Tickets" based on Rasas (shades of emotions), inspired by the traditional Indian structure of esthetics, art forms and poetics. These rasas were surprise, happiness, anger, loathing, courage, desire, gust/despair, mirth, pity.



## Hisaab (He-saab) [Account Keeping]:

### Design consideration for microfinance information system for semi-literate users in rural India

CLIENT: Media Lab MIT

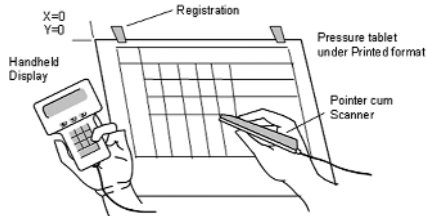
- ♦ ACM CHI 2003, Ft. Lauderdale, Florida & best paper award in the 2nd ACM CUU 2003, Vancouver

### BACKGROUND

Hisaab, a group-level micro-finance Information management application intended to document transactions at the lowest level of MFI operations, was a research project at Media Lab Asia (Media Lab MIT). The project involved the exploration of an interface design space for illiterate and uneducated users. The primary research agenda was to investigate the "phenomenon" of "numeracy" to determine the success of numeric interfaces that leverage the users' ability to remember, manipulate and enter numbers, irrespective of literacy levels.

- ♦ Goal of this project was to build a simple, easy to use accounting application that aids the transactions within the small village-level SHG groups.
- ♦ Building empowering tools for the community to facilitate the local economic processes of saving, borrowing, investing and earning.
- ♦ Exploring various interaction paradigms for illiterate users through a collaborative method by including the potential users in the design process

We looked at the analyzed data to arrive at the most appropriate mode of computing vis-à-vis a sustainable form of interface technology among the given set of users. Therefore the Idea of a low cost data collection terminal as an effective and optimized means of collecting transaction data was further explored.



## Recent Projects:



### **SOMA: A small business affordable device: a business opportunity exploration using a multi-disciplinary approach**

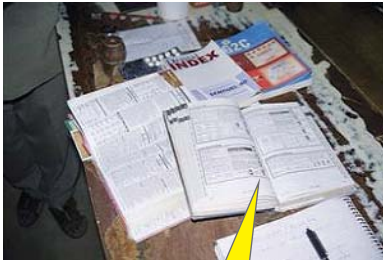
**CLIENT: HP Labs Asia**

#### **AIM**

Understanding the socio-economic context of the bulk of the population, from a point of view of identifying potential uses of ICT in the small business segment “point of sale” environment.

The objective of this study was to

- ♦ Generate product and technology ideas for small retail shops
- ♦ Evaluating and grouping concepts (products, features and systems)
- ♦ Ideation and visualization of product ideas



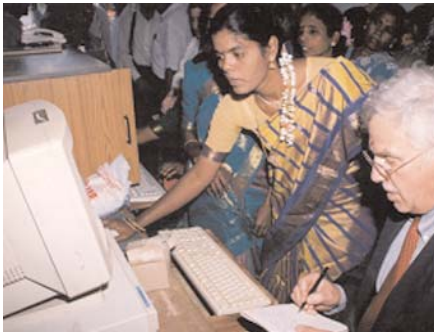
Reference Index



Customer Credit Record



Short Item Book



### **Study of user needs & usage pattern for a new ICT platform for middle tier India – initial study**

**CLIENT: Intel & HP**

#### **BACKGROUND**

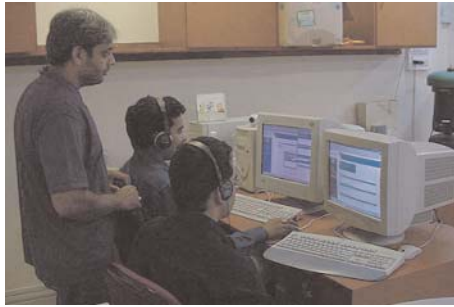
The main aim of this project was to find out “what” is it that makes people from emerging countries desire to buy/own/use a particular product/service, with special emphasis on usage. For example, people may buy/own a product/service as a status symbol but may not use it in its intended usage model. This was termed as Technology Dissonance. For this study, the specific population segment that was studied was derived from the following regions in India.

The study explored the context in which people view and use computers and other technology in their daily lives. The concept of dissonance became more and more redefined and a crucial platform for investigation that helped us identify directions of possible product space in the given market segment. The study was designed to collect data in the following format:

- ♦ Existing usage patterns in PC and PC related technology
- ♦ What issues/needs/desires are unmet by the present state of play of technology/device usage and how people cope with it —“What-if” scenarios and wish lists
- ♦ Forward-looking discussion of lifestyle futures
- ♦ Emotions associated with computers and technology
- ♦ Broad-based study on composite technology/device usage that will document the ways people interact, combine activities and replace physical mediation with technology
- ♦ How their preconceptions, environments, and other important factors influence or are influenced by such technologies
- ♦ Technology usage issues in specific contexts of health, education, entertainment, utility, and trust/security (personal or financial)

## Our Clients & Associates:





## HFI Offices in India



**Eric M. Schaffer**, Ph.D., CUA, CPE  
CEO Human Factors International

Dr. Schaffer has been working as a professional in the field of human factors since 1977. He worked as a Human Factors Specialist with several different companies, as Principal, Executive Vice President and Chief of Technical Staff with Human Performance Associates in New Jersey. He worked as Co-Founder and President, then CEO and Chief of Technical Staff for Human Factors International, Inc.

Dr. Schaffer supervises human factors and other technical specialists and works actively with clients in the forefront of user-centered design. He has extensive experience developing advanced Web, graphical, voice, and public access systems for clients in the financial, insurance, factory automation, and telecommunications industries. His experience includes: interface design, needs analysis, task flow analysis and design, forms design, documentation, training, and all phases of online support.



**Apala Lahiri Chavan**, M.Sc. in User Interface Design

Apala has been working as a professional in the field of human factors since 1990. She worked as CBT Designer with Tata Interactive Systems, as a Multimedia Program Designer for Chrysalis Multimedia in England (working with clients including IBM UK and Glaxo Research), then as a User Interface Design Consultant, working on a variety of consulting assignments. Currently she is Managing Director of Human Factors International's India operation.

Her current responsibilities include heuristic reviews and recommendations for improving site usability, data gathering and usability testing, as well as developing high-level and detailed design specifications for Web sites and software applications. She is adept at working with development and technical requirements teams, as well as with subject matter experts and end-users to develop efficient and effective solutions.



**Kaushik Ghosh**, M.Des. in Communication Design

Kaushik graduated from the National Institute of Design (NID) Ahmedabad, India as a communication design professional. He went on to work on various research projects with Industrial Design Center (IDC), IIT Bombay in HCI and User Centered Design. He has over 5 years of experience in the industry working mainly for the interactive systems design and research.

He is actively involved with "India CHI" (West India chapter of ACM SIGCHI), and the Computing (India-Linux) initiative in India. Kaushik worked as a Project Manager Design with Tata Interactive Systems, a Multimedia & learning systems Development Company.



**Devika Ganpathy**, Human Factor Specialist

Devika has worked as an Interaction Designer for 3 years and in the field of Human Factors for 2 years. Her core work areas are Interface Design (Web and GUI), High Level Navigation Architecture, Expert (Diagnostic) Reviews, Overnight Page Reviews, Usability Testing, Technical Consulting, Research and Documentation

She has worked extensively on the Schaffer Methodology, HFI's User Centered Design Methodology, and a major part of HFI's product—"Usability Central". Devika's responsibilities include coordinating and managing projects, technical consultation, diagnostic reviews and recommendations for improving site usability, usability testing, and developing high-level and detailed designs for Internet and Intranet sites and applications.