IPRO 305 Project Plan

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Social Networking as Economic Development Strategy in US and India

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1.0. OBJECTIVES

The course IPRO-305 is geared towards giving the students practical product development experience by addressing the problem statement provided by the workshop sponsor (and our client), Honeywell, Inc.

During the course of this workshop, we will implement the formative stages of a user-centered design process by developing and prototyping design concepts based on an understanding of existing social networks in small business communities in two neighborhoods, Pilsen/Little Village in Chicago and Powai in Mumbai. The goal will be to develop product, communication or service designs that contribute to increasing prosperity and small business growth within the Chicago and Mumbai neighborhoods.

This project will be undertaken in collaboration with graduate students at the Indian Institute of Technology, Bombay (IIT-Bombay) and their Industrial Design Centre, (comparable to IIT Institute of Design), as well as staff at Honeywell in Bangalore and Minneapolis. By working on this project students, both undergraduate IPRO students and graduate IIT, Chicago's design school students are intended to gain proficiency in remote research methods and collaborating with your contemporaries abroad on a global design project. The flavor of this effort will be a practical or professional one, working towards implementation and design refinement.

At the end of this experience, all participating students should have:

1. a solid understanding of methods and artifacts necessary to conduct design research internationally

2. experience in applying design and business practices to economic development issues

3. a basic understanding of existing social networks in 2 small business communities and how design can help address these

4. established professional relationships with Indian designers who share a human-centered mindset

5. a portfolio-ready project, complete with a recognizable client

2.0. BACKGROUND

A. Sponsor: Honeywell International, a multi-faceted corporation, is located in over 50 countries across the globe is a pioneer in developing solutions in accordance with emerging market needs. Below is a brief description of the company from their website. "Honeywell International is a diversified technology and manufacturing leader, serving customers worldwide with aerospace products and services; control technologies for buildings, homes and industry; automotive products; turbochargers; and specialty materials.

Whether you're flying on a plane, driving a car, heating or cooling a home, furnishing an apartment, taking medication or playing a sport, Honeywell products touch most peoples' lives everyday. Building a world that's safer and more secure … more comfortable and energy efficient … more innovative and productive."

B. Current Project Difficulty: The field research in Pilsen/ Little Village area for design students in India has faced obstructions owing to the language barrier and the immigration issues present in the area thereby making it extremely difficult to obtain an in-depth knowledge of the local small businesses. There is also a huge variety of businesses present which need to be analyzed in terms of their pros/cons and thus reduce it down to certain business(s) that can best help us understand the effects of social networking aspects in these companies. Once narrowed down, a

solution/ prototype will have to be developed depending on the chosen business of interest in order to better promote it.

C. Currently, the primary focus of this project is field interest focused on obtaining as much relevant data about local businesses existent in the Pilsen/LV area for the corresponding team at Indian Institute of Technology in India and obtain the same kind of information about Powai slums. The use of technology is bound to occur in the last quarter of this course for the development of the solution/prototype, however, the type of technology would only be determined at the time in accordance with the project progress.

D. The Institute of Design, IIT had a design workshop in Fall'07 semester focused on designing and developing a solution to improve the medical infrastructure present in villages located across India. After field and secondary research, this project developed a lantern to be hung outside their houses to be used not only as a source of light but also as a signal indicating need of medical attention. This product, however, did not turn out to be very effective as the villagers seemed to be very confused between the two functions as the product use might not have been explained clearly to them. That experience has forced us to analyze the current scenario more in-depth and better define our solution in terms of clear communication, user needs and so on.

E. As with any market research, certain ethical considerations must be considered. For example, at this instance, how do we ensure the information obtained from local residents pertaining to their businesses in the Pilsen area is kept strictly confidential. There are also cultural considerations that must be taken into account so that individuals involved in the research are not offended or feel violated. Assumption of standard must not be made by researchers based on their ethnicity, experience, education, etc . As we progress further into the IPRO, we should have

a code of ethics developing simultaneously to assist us in making a positive contribution to the course.

F. See attached documents (research protocol from a sub-team) in Appendix focused on the above described sections.

3.0. METHODOLOGY BRAINSTORM/WORK BREAKDOWN STRUCTURE:

A. Problem(s) Defined: The proliferation and widespread use of social networks for personal professional and business development have established social networking as an important business development strategy. This project will focus on the use of social networks by small business owners throughout the lifecycle of the business (through conception a start-up anurture a growth) and will address the following:

1. What business tools (products, services, systems) can be designed based on social networking

2. How can design facilitate social networking within the lifecycle of a small business.

B. The devised concepts will be sent to counterparts in India to test them in the Powai slum village. They will be tested in the community within businesses and then evaluated on their effectiveness. Prototypes will then be refined from the user reaction to the product or service. Counterparts in India will send their concepts and prototypes to be tested here in Pilsen/LV. The prototypes functionality will be assessed and data will be sent back to India for refinement.

C. All aspects of the project: research, concepts, schematics and evaluations will be documented. All sub-teams have to document and compile the complete process of their product development. Currently primary research in the form of write-ups, photographs, videos and audio clips have been documented for each subteam. Similar documented material from counterparts in India has also been compiled. Other documentation, mostly IPRO deliverables are being handled by the IPRO subteam consisting of all IPRO students.

D.   To evaluate results of concepts and prototypes sent here by IIT-Bombay students, the IPRO team will implement them in Pilsen and Little Village. The financial and social effects of the product or service on the network will be assessed and documented. The reactions of users will be evaluated and the overall impact will be compiled and then sent to India for re-evaluation of the design. Similarly concepts created here will be evaluated in Powai in a similar fashion and sent here for re-assessment. Final results will be presented to Honeywell at the end of the IPRO.

E.   IPRO deliverables are the responsibility of the IPRO team which consists of only IPRO students. Each member of the IPRO team will contribute to complete deliverables.

4.0 EXPECTED RESULTS

Below is a tentative list of expected results to be attained by the end of this semester:

1. In-depth analysis of small business(s) in Pilsen/ Little Village for IIT-Bombay in accordance with their specific area of interest.

2. Identification of business tools based on social networking for small businesses located in Powai slums in Mumbai, India.

3. Designing/ Development of product(s)/ prototype(s) to boost these local businesses.

4. Testing of the designed/ developed solution(s) followed by feedback.

5. Revision in the product(s), if necessary and finally implementation.

6.

5.0 BUDGET

There is no estimated budget currently for this project since it primarily deals with field and secondary research finally leading to designing and development of solution that would identify social networking aspects of small businesses and thus help enhance them. The creation

of prototype/ solution in the final stages of this project might possibly require nominal costs which would in turn be provided by our sponsor Honeywell International.

6.0 TIMELINE: TASKS AND MILESTONES

This IPRO/ design workshop will be divided into 3 main work phases:

1. Research & Concept Development (7 weeks)

2. Prototype Testing I and Design Refinement (4 weeks)

3. Prototype Testing II and Design Refinement (4 weeks)

1.28 | Research & Concept Development | Orientation and research planning

In this class we will be introduced you to: our client (Honeywell), research partners at IIT Mumbai and the neighborhoods of Pilsen, Little Village and Powai. During this week, we will be divided into 4 teams and be paired with corresponding Mumbai research teams.

Assignment: *Conduct secondary research to supplement class presentations on Pilsen, Little Village and Powai. Visit Pilsen/Little Village and develop a list of your areas of interest for research in Powai.*

2.4 | Research & Concept Development | Developing and implementing a remote research plan

Develop a research plan for Powai based on your list of interests. In creating a research plan, research ethics will be discussed in addition to strategies for implementing the research plan for Pilsen/Little Village that your Mumbai partners will send you.

Assignment: *Develop a research plan and protocol for implementation in Powai. Implement Mumbai research protocols sent to you by your Mumbai partners in Pilsen/Little Village.*

2.11 | Research & Concept Development | Developing and implementing remote research

In this class we will discuss your initial experiences conducting research in Pilsen/Little Village and the efficacy of implementing your Mumbai partners' research protocols. Please be prepared to present your research plans and protocols for Powai to the class.

Assignment: *Continue with research activities in Mumbai and Chicago.*

2.18 | Research & Concept Development | Working session

In this class each team will give a brief update on research so far. We'll discuss refinement of research plans / protocols if this is necessary.

Assignment: *Continue with research efforts implementing refined plan. List insights and begin developing corresponding design recommendations.*

2.22 | IPRO Project Plan Due]

2.25 | Research & Concept Development | Brainstorming

In this class we will guide you on how to approach brainstorming new product and service concepts based on the insights you have gained from research and the corresponding design recommendations.

Assignment: *Analysis and brainstorming: Finalize research insights and design recommendations. Begin visualizing design concepts (in sketch form).*

3.3 | Research & Concept Development | Submit brainstorming results

In this class each team will present key insights, design recommendations and sketches of preliminary design concepts to the class.

Assignment: Visualize design concepts(3+) in sketch form, prepare presentation for design review with Honeywell.

3.3 | IPRO Mid Term Oral Presentation 4:30 – 6:00 PM]

3.7 | IPRO Code of Ethics Due]

3.10 | Research & Concept Development | Working session

Design review with Honeywell (Mumbai students' presentations will be shared for review).

Assignment: Based on Honeywell and class input, pick the most promising design concepts. Develop sketches to further explain design idea if necessary and begin prototyping.

3.7 | IPRO Midterm Written Report Due]

3.24 | Prototype Testing I | Working session

In this class we will advise you on prototype testing and discuss your approach to this for your chosen design concept(s).

Assignment: Prototype testing in Chicago and Mumbai.

3.31 | Prototype Testing I | Working session

Discuss results of prototype testing.

Assignment: Prepare presentation to discuss prototype testing results and implications for design refinement.

4.7 | Prototype Testing I | Presentations

Teams will present the results of their prototype testing to the class (Mumbai students' presentations will be shared for review).

Assignment: Based on feedback, refine designs and begin developing prototyping plan for Phase 3.

4.14 | Prototype Testing II | Working session

Assignment: Test prototypes in Mumbai and Chicago.

***NOTE: IIT Bombay last class

4.18 | Meeting Minute Due]

4.21 | Abstract, Poster and Presentation Due]

4.21 | Prototype Testing II | Working session

Assignment: Test prototypes in Mumbai and Chicago, prepare materials for IPRO Day.

4.28 | Prototype Testing II | Working session

Assignment: Refine designs based on results of prototype testing, prepare materials for

IPRO Day.

5.2 | IPRO Day]

5.5 | Prototype Testing II | Working session

Assignment: Prepare presentation in which you will present final designs to Honeywell.

5.12 | Prototype Testing II | Present final designs to Honeywell

7.0. INDIVIDUAL TEAM MEMBER ASSIGNMENTS

First name	Last name	Major/Minor	Skills and strengths	Experience/Academic Interests	Team	Assignments done for IPRO
Anshul	Maheshwari	Biomedical Engineering	-creating new ideas -developing business plans -opportunity assessments -experience in both primary and secondary research, concept development and prototyping -can work with all types of people -team-player	-worked at the University of Chicago Hospital and done mostly research pertaining to biomedical engineering -interested in business studies and product development.	2	-field research, -IPRO research -project proposal -secondary research
Dan	Folwaczny	Aerospace Engineering	-working on interdisciplinary teams -conducting research	-interested in how emerging technologies and globalization impact existing social, government, and business structures.	3	-background and field research -compilation of materials sent to our counterparts in India
Edwin	Steinmetz	Psychology	-innovative	-interested in the use of	1	-research

			-goal-oriented -team-worker	social networks by small business owners throughout the lifecycle of the business		protocol development -field research -secondary research
Soham	Patel	Biomedical Engineering / Business	-innovative -goal-oriented -business-minded -team-worker	-two internships pertaining to biomedical engineering (one at Rush University and the other at a pharmaceutical company in India) -gained not only expertise in certain research areas in the specific field but also a strong sense of work ethic and commitment -over 40 hours of leadership activities from participation in the Leadership Academy organized events at IIT -business classes and a previous Entrepreneurial Project (EnPro) that have included working in teams, doing market research, developing research protocols and deliver goals such as developing business plans, prototypes and deliver them in a timely manner.	2	-research protocol development -field research -secondary research -project plan
Vasile	Bora	Electrical Engineering	-web design -team-worker -conducting research	-worked on various projects in electrical engineering, web design, multimedia design -interested in business development	3	-research protocol -primary and secondary research -preparing deliverables
Vishwesh	Kelkar	Food processing Engineering	-innovative -goal-oriented -team-worker	-worked for 2 years in India as process development engineer. I look forward to work in a food industry	1	-research protocol development -field research -secondary

				in process engineering		research

7.1 IPRO team leaders

Anshul Maheshwari, Soham Patel

7.2 Sub teams

Due to the nature of our project all IPRO team members are on different teams of the ID583/IPRO305 class. It is important to notice that this class is designed as a workshop divided into three main work phases:

1. Research and Concept Development (7 weeks)
2. Prototype Testing I and Design Refinement (4 weeks)
3. Prototype Testing II and Design Refinement (4 weeks)

The main class is divided into four teams, each of them being required to submit their own research and prototype. All of the IPRO team members will work on the required tasks for the team they belong to.

8.0 DESIGNATION OF ROLES

Agenda Maker: Vishwesh Kelkar

As a group, we decided that we each will do our part to keep the project moving smoothly and we don't need timesheets to keep track of our work. We will keep track within our own sub groups and then update each other so that everyone is moving in the same direction and towards the same goal.

APPENDIX A. Relevant Documents to Background Information

Research goals/protocols for corresponding team in India – Sub-team (Team 2, Chicago)

Goal: To understand the social networking aspect of small business operating in Powai. To come up with design concepts that leverage or enhance the networking aspects of this neighborhoods.

Areas of interest:

Mandals: Mahila mandal, Yuva mandal, Food: grocery stores, convenience store owners, mobile vendors,
Jewelry makers, working from home, savings

Methods:

In depth interviews of business owners using AEIOU frameworks,

Fly on the wall - Observe make notes of interactions between business owner and clients,

General instruction to be followed during field research: These are just some pointer based on our past experiences in ethnographic research.

- Please ask for permission before you take pictures or record anything.

- Carry some fruits, candies or nuts for children in the neighborhood.

- Be respectful of gender differences, do not approach a minor or female member without the permission of the senior in the household.

- Be in a pair or a group, but not an intimidating number.

Observe, ask questions, take pictures and notes about

Activities: How do you promote or increase your business, is there a good day for business (peak season)
or a bad day (low season), what are the factors leading to it, Where do you buy or sell you products or
services, How does the credit network function, How do you decide the price/rate, how do they save for
future, What do you invest in, Where and how do you save your daily earnings(cash), How do you ensure the security of your daily earning and business?(paying bribes, local goons etc)

Environment: Infrastructure facilities, water, electricity, drainage, sanitation, living conditions during extreme weather?

Interaction: How does festival season affect the business, what is the source of entertainment, festivals celebrated and how do you and your business participate in it?

Objects: What do they sell, manufacture or produce, how open are they to technology, gadgets that they own, Eg. TV, cell phone, radio etc. what is their most valued possession, what are the objects they want
to buy in future and why?

Users: About business owners- demographic information, age, family members, earning family members, monthly income, place of origin, education level, languages they speak, where do they operate their business and where do they live- is it rental or owned, what is their business, how long they have been practicing the business and how did they get into it, number of people working with them, future plans
or goals –personal and professional, who is the target customer?

Other information:

Typical day and a typical weekend or holiday, how is it different?

Social dynamics- Role of men, women, children, joint families, Average size of a family.

Tell us 3 things that you don't like about your existing business, how can it be changed or made better? Tell us 3 things that you like about your business, how can it be made better.