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Cleveland Institute of Art

Product Development and Design Project

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Executive Summary

The Weatherhead design team of Ariel Egri, James Hopkins, Xiaoyun Li, and Jay Vaidya is undertaking a collaborative product development project that is based on the design work of the senior undergraduate students from the Cleveland Institute of Art ("CIA"). Each design student from the CIA has been tasked with developing a concept that addresses a stated problem in an area of interest of their choosing.

Using idependent research the Weatherhead design team has narrowed the focus of the project to two areas of interest: educational support services and the elderly and disabled service industries within the United States. The final concept selection will occur on December 7, 2010.

Once a concept has been selected a formal proposal for product development collaboration will be extended to the designer. The final goal for the Weatherhead team is to then assist the designer in advancing the concept through problem identification and development of design solutions.

Product Development and Design Project

1. Background

Introduction

Our team is undertaking a collaborative product development project that is based on the design work of the senior undergraduate students from the Cleveland Institute of Art ("CIA"). The designers have been tasked to select an area of interest, perform background research, develop a problem statement, and then develop design concepts that address the stated problem. Following their initial concept presentations, the students receive critiques from their professors and classmates, rework their problem statements and refine their concepts. Their process is one in which they will continue to revise their concepts and improve upon their ideas until they have a cohesive and complete product to present. It is important to understand that their process is one of continuous revision that will eventually lead to a well rounded design. This process requires patience from both parties involved and too use all time allotted effectively. Based on our own background research and selection criteria discussed below, we will select one area of interest that the students' focused on. From our research, we will select and area of interest that we feel has a product opportunity gap and where a new product can be developed to address that gap. We will also take care to select a student whose designs and abilities match with our design criteria (discussed below). As a team, our ultimate goal is to select one concept from the designers' final presentations by Dec. 7, 2010, and pursue a product development process that will result in actionable proposals.

Narrowed Focus

The two candidates that we have selected to further consideration currently focused in one of two areas: educational support service industry and the elderly and disabled service industries within the United States. Operators in the Educational Support Services industry provide non-instructional support services for the education industries. This industry is made of two major segments, educational testing services and educational consultants. Our designer is currently operating within the educational consulting realm. The industry is considered to be seeing quality growth, meaning that there is an emergence of technological advances and new markets. The industry itself is a $14.7 bn industry that has been only slightly affected by the downturns in economy, with growth predicted to be at 5.5% from 2010 to 2015, down from 6.2% from 2005 to 2010.

The Elderly & Disabled Services industry provides nonresidential social assistance services to improve the quality of life for the elderly, the mentally ill or persons with disabilities. Our designer is currently operating in the realm of those with sensory disabilities, specifically within the deaf community. The industry is predicted to grow two fold from 2010-2015 at 7.3%, up from 3.7% from 2005-2010 and has a yearly revenue of $26.0bn. Growth is stimulated by the increases in the elderly population based on the aging of the Baby-Boomer generation. The Major market segmentation of the industry is broken down into key groups; 40% are people aged 65 years

or older, 18.3% are people with physical disability, 10.4% are people with mental disability, 8.4% are people with sensory disability and the remain are comprised of a variety of disabilities.

2. Product Development

Concept Selection Criteria

The product development process undertaken began with an apriori identification of four decision criteria our team felt were important in selecting a successful product concept to pursue. These criteria helped narrow the number of designers and concepts under consideration and enabled team discussions regarding the nature of successful products.

1. Concepts should be refined to a point of clear value propositions, permitting the required primary research to be collected without having to spend an unreasonable amount of time, resources and efforts.

2. Concepts should demonstrate potential for significant customer impact as judged by the customers' perceptions of quality. Concepts contributing to the enhancement of overall product/service quality could effectively enhance the degree of end customer satisfaction and increase an organization's competitive advantage. Concepts with broader impact will receive preferential prioritization over those projects that affect only small number of customers.

3. Designer's chosen for collaboration should be able to clearly articulate the following question: what is the main problem being addressed and how does the concept address this problem?   If no persuasive argument can be identified then the concept is not worth pursuing.

4. How will the new product/service be used by an individual? Has the designer presented a concept that will address the identified problem in a way that users will view the product/service as desirable, useful, and useable? Does the proposed solution align with an individual's existing lifestyle?

Initial Concept Introduction

The first introduction to the designers came during their initial concept presentations. During these presentations we were exposed to the designers' areas of interest, the research they had conducted, and the problem they sought to address through their concepts. At this stage each designer presented between 15 to 20 concepts, each of which was intended to address the designers' identified problem.

After the designers' presentations, the first inclination of our group members was to begin discussing the quality of the concepts we had seen and begin forming conclusions as to the probability of success or failure of each respective concept. However, through our conversations with the designers and our contact at the CIA, Kaja Buchanan, we soon realized that our conclusions were both premature and unfounded. Not only were the concepts the designers presented not yet finalized, but there was no credible basis from which our conclusions were drawn. This introspective realization led to the first recognition of the need expand our view. The first expansion of our scope led to a focus on the areas of interest each designer had

selected. By focusing on each designer's area of interest we hoped to avoid the pitfall of narrowly focusing on the designers' concepts that were still being developed. During this stage we embarked upon the first round of secondary research that was intended to provide group members with insights into the markets being addressed by each designer. The initial research sought to identify the following questions: what are the existing market segments in the designer's area of interest; how much revenue do these segments generate; and, who is serviced by these segments? Our team realized that these questions were useless in an indeterminate context where the designers were yet to crystallize their concepts and our team had no true understanding of the factors affecting each area of interest.

For a second time we decided to expand our scope. We realized that a true understanding of the designers' areas of interest required an understanding of the factors that influence each respective area of interest. Thus, our next step was to determine how to embark on research that would allow our team to share an understanding of these influencing factors as well as to understand how the designers had approached the process of conceptualizing solutions to the problems being addressed in their respective areas of interest.

Research Methodology

Our contextual research employed a combination of methods derived from the designers and a literature review of product development methodologies. The designers' research focused on direct observation, ergonomic studies, and task analyses. By coupling the designers' form of direct observation with the strategies elucidated in Jonathan Cagan and Craig M. Vogel's *Creating Breakthrough Products: Innovation from Product Planning to Program Approval*, we decided to use direct observation and secondary research to illuminate the social, economic, and technological trends affecting the designers' areas of interest. In so doing, we have developed a platform that allows our team members to identify trends and product opportunity gaps, which will ultimately lead to deciding on an area of interest, and a product to develop.

We began our trend analysis by narrowing the areas of interest to strictly U.S based concepts and ideas, which allows for a greater depth of research under the time constraints of the project. To begin, we created a concept map centered on the major trends that affected the general areas of interest which led to the identification of specific trends upon which to focus our research. Our trend analysis yielded major areas of trends to research that include the following: the relationship between the economy and donations and support of organizations, the relationship to political atmosphere and government funding, the changes in communication and its effects, the education systems of the U.S., the U.S. consumer and their lifestyles, and the current status of U.S. household/family dynamics (Appendix A). These trends were then analyzed through secondary research methods – i.e. newspapers, social news aggregators, magazines, trade journals, blogs, etc. – centered on the importance of unbiased analysis (Appendix B).

Additionally, these trends will be used to establish a decision matrix to narrow the clearly inferior concepts and allow for the team to focus on those concepts with the greatest potential (Appendix C). This decision matrix will include features from both the trend analyses and the selection criteria developed at the beginning of the process. Thus the decision matrix will assist our team in narrowing the areas of interest rom this point we will again look at the trends that we've researched to begin analyzing how the product opportunity gaps envisioned by the designers fit with the SET

trends (Social, Economic, and Technological) we've identified. Using the information gained coupled with our selection criteria, we will choose a designer who is willing to collaborate with our team in the spring.

Once collaboration has been agreed upon, our direction will be determined by the characteristics of the area of interest we select. We anticipate furthering our understanding of the chosen area of interest through our own primary research. This will entail direct observation of intended user, scenario development, ergonomic analyses, etc. – that will allow our team to develop an intimate knowledge of the intended users through the iterative refinement of user profiles. In sum, this phase will result in a deep understanding of the value opportunities available in our area of interest (Appendix D).

Finally, with an understanding of the environment in which we are operating (Phase I) and a deep knowledge the value opportunities cherished by the users in our area of interest (Phase II), we will work with the designers to realize the opportunities we've all discovered. The realization of these opportunities will be heavily dependent on the then-present ability of the designer's concept to satisfy the unmet value opportunities discovered in Phase II of the process. Therefore, a determination of the process to be undertaken during the third phase of development is premature at this time.

3. Relationship Management

As we have progressed, we learned of the importance of managing the relationship between our team and the designers with whom we are working. Our relationships with the designers can be seen as inseparable from the success or failure of the project in two ways: (1) our ability to work with the designers in a collaborative setting where honest feedback can be presented (from both parties) is essential to creating a product that will have a lasting impact on its users; and (2) the free flow of ideas between ourselves and the designers will only serve to heighten the teams understanding of one another's strengths and weaknesses allowing for us to become a high-performing team.

We have gradually been developing awareness of the issues detracting from the successful collaboration between ourselves and the designers. Of particular interest to our group are the differing views the designers hold as to the role our group will play once final concepts have been presented. From our discussions with the designers we have uncovered a vast discrepancy between our initial assumptions about the nature of the collaboration to occur next semester and the designers understanding of the process to occur next semester.

In order to achieve a shared understanding with the designers of the goals of collaboration next semester and the nature of our work with their concepts, we have begun the process of scheduling time to allow the designers to learn about our process and abilities much as they have done for us. We are convinced that by ensuring close collaboration and communication with designers we can achieve a lean, flexible design process while further promoting the collection, transmission, integration and sharing of the designers' ideas and knowledge. We believe that mutual understanding and trust is essential to our success and can be built through dialogues and cooperation.

Our foray into collaborative work with the designers has already paid dividends in the form of a better product development process. The methodology of our initial trend analysis is a direct extension of our own observations and discussions with designers as to the nature of research they performed for their areas of interest. From speaking with designers, we came to the realization that their research is particularly different from the research that we, as business students, have become accustomed to. We chose to revamp our research to be open to changes in the designers' concepts. Through our conversations, we believe that we have established a method of research that is similar to the path taken by the designers themselves. We hope that this will create a stronger relationship based on the fact that our discussions with the designers regarding their area of interests will be in a shared language that will allow for more pointed conversations about the nature of the concepts being developed. This level of openness to new ideas, we believe, has helped strengthen our relationships with the designers and will serve us well going forward as we have shown the desire to truly understand and benefit from designers' processes.

4. Conclusion

As we end the semester, we have finished our preliminary SET trend analysis and refined our selection criteria to a point where we have narrowed our selection option to two candidates. Our final selection will occur on December 7, 2010.

After completing our final concept selection we will offer a formal proposal for for product development collaboration to the chosen designer. The proposal will clarify the professional comeptencies of each member of the Weatherhead team and the expectations of required work for successful collaboration next semester.

Trend Identification Map

APPENDIX B

Evolving SET Analysis Concept Map
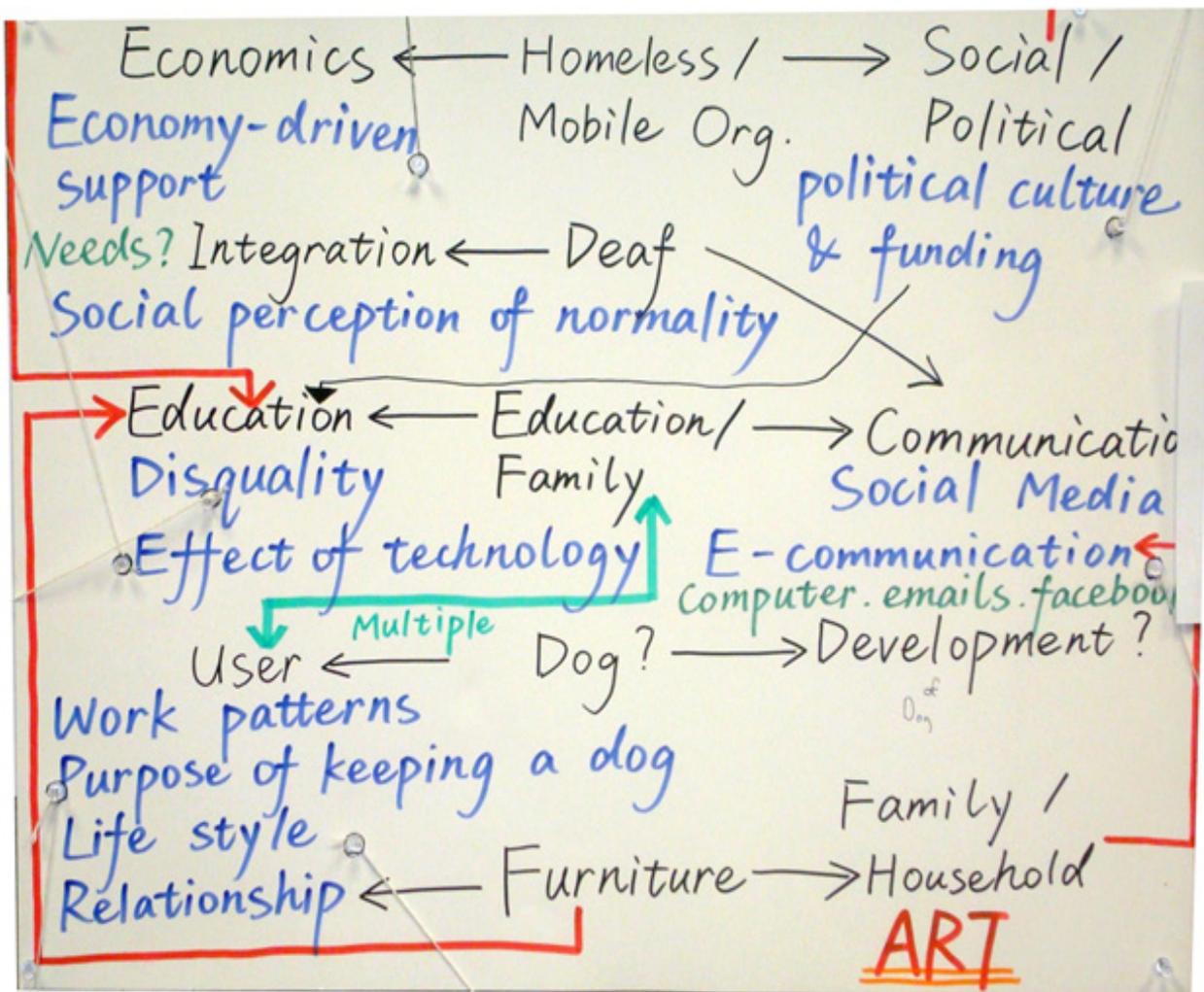
APPENDIX C

Sample Decision Matrix

CRITERIA	WEIGHTS	OPPORTUNITIES opportunity #1	opportunity #2	opportunity #3	opportunity #4	opportunity #5	opportunity #6	opportunity #7	opportunity #8
time and financial resources	3	2	1	3	3	3	1	2	1
potential for a useful, usable, and desirable product	2	2	1	2	2	1	1	3	1
potential market size	1	1	3	1	3	1	2	2	1
potential creativity	2	2	2	2	3	3	1	3	2
potential contribution from team members	3	3	3	1	3	2	3	3	3
TOTALS		24	21	21	31	24	18	29	19

Value Opportunities

Value
Opportunities

1. Emotion: Adventure, independence. Security, Sensuality, Confidence, Power, etc.
2. Ergonomics: Comfort, Safety, ease of us
3. Aesthetics: Visual, auditory, tactile, Olfactory, taste
4. Identity: Point in time, Sense of place, Personal
5. Impact: Social, environmental, etc
6. Core Tech.: Reliable, enabling
7. Quality: Craftsmanship, Durability