

Design and Innovation for social needs

Andy Cargile

Vincent Ball

Microsoft Research Design Expo

andy.cargile@microsoft.com

vball@microsoft.com

Jorge Meza

Design Department Universidad Iberoamericana

jorge.meza@uia.mx

About Microsoft Design Expo

Design Expo is a Microsoft Research forum where the world top graduate design institutions showcase their prototype interaction design ideas. Microsoft Research sponsors a semester long class at eight interdisciplinary leading design schools and invites the top class projects to present their ideas as part of a Faculty Summit.

Design Expo allows design grad and undergrad students from around the world to learn from exploring a particular local or social need and build ongoing relationships between universities. This fact enables students to network and learn from other students in different design programs around the world about how they approach design solutions

Microsoft provides a voice for design schools within the Microsoft Research Faculty Summit to present innovative students' work, raising the awareness and importance of design in society and companies.

Interactive and Industrial Design students solving social needs

For two years (2008 and 2009), our Design Department has been invited to participate in this Microsoft's event. The Design Expo creates a forum for encouraging "out of the box" thinking, by exploring and contrasting students' visions for the future of design, information technologies and computing.

In 2008 edition, nine institutions with established programs in interdisciplinary design presented new ideas around the theme: "Learning and Education". That year's schools' selection include participants from USA, China, India, Europe,

and for the first time Mexico, representing Latin-American countries.

Each school presented innovative ideas, concept prototypes, visual and industrial designs, and supporting research in their media based presentations around the proposed theme.

In 2009, for seven international and recognized universities, the design challenge was to explore new ways of working. The goal was to design tools and services that may support new ways of working in the next future. This included: many different economic and cultural contexts, mobile and migrant workers, and part-time, micro-financed work.

In both occasions the students tried to showcase exceptional design thinking about the future of computing and interaction linked with Mexico City's social problems.

The design process

During a semester 16 students from Industrial and Interactive Design are working in innovative business ideas, concept prototypes, visual and product designs around different local problems and they develop different proposals. The process is guided by the professors and one or two Microsoft's liaisons.

Microsoft's key design points:

- Designs solutions should include user interface interactions as part of the user experience demonstration.
- Designs should address particular needs & desires of users, ideally coming from diverse economic, professional and cultural backgrounds.
- Proposals must take a point of view and must be clear on what the user's scenario is addressing and what is not.
- Validation of design's solutions with actual user feedback.

The organization of problem-solving activities for MR design expo's projects is conducted in three phases, which goal is to structure the processes for planning, conducting and analysis of the MR design's project.

Phase 1

First design thinking (launch of the project)

Activities:

- Visit of Microsoft's liaison
- Short period of field research (close observation of people needs)
- Identification of social needs and possible design problems

- Generation of primary knowledge
- First understanding of what is needed
- Nonjudgmental generation of ideas
- Brief analysis of the more promising solutions
- Feedback of Microsoft's liaison, professors and classmates

Phase 2

Structure of design problem.

Steps:

1. Research and analysis. Deep ethnographic field research and more referenced sources that are needed to analyze the problems detected in the previous phase.
2. Problem's descriptions (Brief explanations and descriptions)
3. Context and users (contextual observation)
4. Possible Scenarios
5. Definition of design goals
6. Synthesis of knowledge (analytical and theoretical models)
7. Framework for MR design's
8. Configuration of design's solution

Phase 3

Definition and implementation of possible solutions.

Steps:

1. Design problem's description
2. Definition of design's parameters (from perceptual to cognitive)
3. Analysis of users and context
4. Possible fields for the design's proposal
5. Design's shape and interaction
6. Users and topologies (cultural, physical, etc.)
7. Social and cultural relations attended
8. Usability and ergonomic testing
9. Feedback (receive input from the users on the impact of their actions on the interface or product system)
10. Final Presentation
11. Evaluation

During the whole design process the students consider three key elements, related to problem solving and innovation, these are:

- Empathy – Continuous research to users and context in order to learn about the possible product or service solution; understanding needs and design problems.
- Insertion - Transitioning to physical, emotional and cognitive ease and familiarity needed for new products or services that may be inserting in new contexts or cultural situations.
- Sensation – Excitement or surprise and other emotional factors that will create positive interest and

maintain engagement with the solution and acceptance of the service or product.

Design's solutions

Once scenarios and possible solutions are defined, each team builds a design prototype (considering the interaction and user experience). If the design solution involves software, students mock up what a user would see and do, thinking through the interface, the context of the user and results desired. The goal of the prototype is to create a vehicle which best communicates the tangible experience of the design solution. The Microsoft liaison works closely with the professor to determine the practical milestone date for the prototype completion and the nature of what makes and appropriate prototype.

In 2008 the students work around five different topics: obese kid's food habits, environmental education, stress and technical education. The selected project was called: "Foodmates".

Project description:

Foods disorders have become more common. Lack of education about this issue has caused younger generations also to be affected. The project aim was to educate children about healthy food habits.

Foodmates is a system that combines thinking, fun and exercise, providing the necessary information in order to create better food habits between children and their parents. To accomplish the goal, the system contains three elemental pieces: an interactive toy, a video game, and a parental application. With Foodmates, children learn how to balance exercise with what they eat and also discover how to separate and combine the different food group.

In 2009 the students work around four different topics: freelancers, micro businesses, unemployment and service workers. The selected project was called: "Work Recognition System E-tag".

Project description:

Lack of work recognition is a problem in Mexico City. Motivating and keeping employees, in the services industry, requires effective management but also a good system to motivate and reward them. WRS develop Etag, a gadget and an awards system game to motivate positive behavior among service workers.

Results

Microsoft Research Design Expo have allowed our design students to acquire a series of experiences that have expanded their vision of the critical situation of Mexico and the rest of the world; as well as the responsibilities of designers within the Network Society. Through their projects the students have shown a self development of new process of learning, different from the one generated in the classroom, which is clearly related to a more global and less fragmentary vision of contemporary problems.

MRDE projects facilitate the synthesis of theoretical and practical concepts and connect them with new media and information technologies. During these two years, that we have participated at Design Expo, the students have generated innovative solutions thanks to the connection with specific Mexico City's problems, where they have evaluated if their concepts have been pertinent and viable.

Manuel Castells affirms that: "technology is a fundamental dimension of social change". MRDE students know now that new communication media constitute a susceptible tool for a positive or negative utilization.

Howard Rheingold says that: "beneficial uses of technologies will not automatically emerge just because people hope they will. Those who wish to have some influence on the outcome must first know what the dangers and opportunities are and how to act on them"⁵¹. Through MRDE projects students assumed the responsibility of the social, economical and political changes that come with design and information technologies; they had to be capable of analyzing and evaluating properly the context where a specific need is located so their proposals should be pertinent to the places and people, incorporating in them, a pertinent formal language and an effective use of technologies and design.

Design Expo students have confronted the enormous problems of urban Mexico, assuming in their projects the social impact and economical implications of design and information technologies. They have realized they have a great challenge in the future: to humanize new technologies in order to collaborate with Mexican social development.

Details sewing the invisible

Jum Nakao

Fashion designer and creative director
Instituto Brasil de Arte y Moda, Brazil
jum@jumnakao.com.br

A Costura do Invisível took 180s days and 700 hours and a team of 150 people to create. For clothing I chose the late nineteenth century, a period when fashion was extremely elaborate and precious, both in volume and textures. Those values would be crucial in causing in the spectator an instantaneous, intense feeling of wonder at the work.

The paper reliefs were embossed by Brazil's most traditional engraving company, Balsemão. To cut the lacework for each model, we used the laser technology of Universal. And among paper manufacturers we negotiated with ArjoWiggins, which produce a unique paper products line. We therefore selected vegetable-fiber paper because of the subtle transparency it would give the clothes, and verge de France for its toughness, suitable to the setting.

Aline, my assistant, cross-referenced all the possibilities and brought together those who were cutting, weaving and sewing. Hilda, our seamstress, amazed herself by sewing paper. In his studio Julinho, our scenographer, came up with the solution to the fauna for the setting around our fairies, designing and producing anemones out of paper cones.

In order to generate enchantment we created the Playmobil fairies. This playful element so present in people's memories, would make it easy to the spectator to project themselves into the work, as if in a fairy tale. The serial reproducibility of the dolls – after all, they are exactly alike – would allow the spectator to identify with any models on the catwalk. As in a forest, where there are no well-trodden paths, everyone would be able to strike out on their own, choosing a new direction with each new character.

Fernando Andrade, our make-up artist, re-created the Playmobil esthetics in the models by outlining only their eyebrows and mouths. To achieve the fairy's glance, he would paint their eyelashes white. Inês Sacay, our hat maker, was in charge of the Playmobil wig that would connect the audience minds with our universe. Vana, our props manager and doll-maker, coordinated the efforts of a team of craftspeople entrusted with the task of transforming

⁵¹ Rheingold, Howard. "Smart Mobs: The Next Social Revolution". Basic Books. 2002. p xxii