

Design Project 3: Leaving on a Jet Plane

Design – beauty, grace, clarity + economy, user-friendliness – is an idea that ... if factored in at all on the average project ... comes late. That is a dangerous ... foolish ... self-defeating ... approach. So... stop!

Design is one of those magical realms that works on a subconscious level. It elevates us ... inspires us ... thrills us ... often without our understanding why. And: It is the essence of WOW. It is – oughta be! – a MAJOR component of every (that's E-V-E-R-Y) WOW Project!

— Tom Peters

*All my bags are packed I'm ready to go
I'm standin' here outside your door
I hate to make you up to say goodbye
But the dawn is breakin' it's early morn
The taxi's waitin' he's blowin' his horn
Already I'm so lonesome I could die*

*So kiss me and smile for me
Tell me that you'll wait for me
Hold me like you'll never let me go
Cause I'm leavin' on a jet plane
Don't know when I'll be back again
Oh babe, I hate to go*

— John Denver

Goals Your team will be placed under simulated conditions for working in a Web 2.0 media informatics company — INTERACTIVEDELIGHT.COM. Under these circumstances, assignments are often vague and incomplete. Your first job as a team, therefore, is to obtain from management a design specification. **The specification will emerge as small pieces of information, sometimes contradicting one another.** That's life!

Once you have a firm understanding of the assignment — or as complete an understanding as you can get in a reasonable amount of time — your job



is to carefully manage the remaining time in order to accomplish eight objectives:

1. Narrow the project; you can't accomplish everything. Start with your users. Who are they? Think about their needs and desires; think about the technology and what it can do; then decide what your project is about.
2. Submit to the Project #3 forum a set of design questions that will clarify the requirements.
3. Decide on your target users; develop a set of assumptions (predispositions); a design (or designer's) message for this project (your design mantra); and a set of prioritized functional requirements. Create two personas.
4. Create several [at least two!] alternative designs on paper; choose one for a paper mockup; revise your prioritized functional requirements according to screens; develop a "rough" task flow diagram.
5. Conduct a usability test of your design with at least three subjects.
6. Based on your usability test results, revise your paper design.
7. Make recommendations to management on your design, providing a rationale for major design decisions.
8. Create and deliver a compelling presentation of your design to INTERACTIVEDELIGHT.COM and to the management of airport operations at O'Hare airport. This is not an internal company presentation; it's designed to sell your plan to O'Hare management.

As always, you will be judged on your attention to the seven themes of good design, degree of professionalism, ability to work collaboratively with your team, quality of your presentation, and any other criteria that may emerge during "conversations with management."

Attention should be given to the design *process* (including team dynamics) as well as to the design *product*. All important decisions should be done by protocol voting. Only unanimous decisions get implemented.

You may think of your mentor as your Team Lead — someone who will guide you through your work, but who is unable to give definitive answers. HCI/d Mentors are INTERACTIVEDELIGHT.COM managers; they have participated in numerous meetings with management and are aware of company and project goals. Siegel is the Chief Technology Officer (CTO). He's giving the assignment to your team, but like many "visionaries," his descriptions are accompanied with "waves of the hand" as if you're supposed to read his mind. Being a friendly CTO in a



Erin called from headquarters and she really praised our team process. I love to hear this kind of 'client delight!'

I'm wondering why he's talking like this. The compliments seem almost artificial, yet I've been told by more experienced company members that Siegel can be quite genuine if he really feels you've done a good job. The problem is that these few moments of praise are separated by long periods of relentless challenges to do your best work.

I really get worried when he picks up the Dry-Erase marker and proceeds to the white board.

Big announcement. INTERACTIVEDELIGHT.COM just joined an alliance with Microsoft Professional Services. We've been asked to be the lead on the alliance's interface design of a new information system for O'Hare Airport in Chicago (and eventually in all major U.S. airports). Apparently, three other alliances were selected by O'Hare for the best design, and whoever wins will land a huge contract – likely several million dollars when it's all done.

You could see the mouths drop throughout the room. I guess this explains the late night meetings held by the senior management team these last couple of weeks.

The cool thing is that the design is wide open – both software and hardware. Microsoft has been impressed with our work and they've specifically asked us to drive the interface design; they have some ideas on who might work with us on hardware implementation, but that can wait for now. This is a big deal for us! Of course, usability is going to be a headache, not to mention coordinating our efforts with Microsoft... the problems are quite complex.

I'm wondering what Siegel means by “complex.” Does this have to do with Homeland Security operations? I really dislike traveling through O'Hare; it's a nightmare when things back up there. I'm wondering what other vendors are competing for this contract. Sometimes I look around at my peers and I feel so inadequate!

[Siegel continues...]

What are we going to propose? An information kiosk? A hand-held device? What about that “information-in-place” idea we read about last week? What was it called, “WorldBoard?”

What was he talking about? He could see that we all looked confused.

OK, OK. I can see you have no idea what I'm talking about. Let me start again.



What's the biggest pain that people experience in an airport? I don't mean flight delays. I mean big pain like when there's a major crisis going on like a huge blizzard hits Chicago... or the international flight computer shuts down and strands 20,000 travelers with international destinations... or there's a terrorist threat, a fire, a tornado, a plane crash, etc. People panic; they are desperate for information and the only thing they see on the Departure screens is "flight delayed."

People queue up at the ticket counters or at the departure area. The agents don't know any more than the customers. A place like O'Hare shuts down and there is a real information crisis leading to frustration, stress, and potential danger; people often lose their normal demeanor and can become hostile.

And it starts a chain reaction. People get on their cell phones and start calling travel agents, airline centers, and personal contacts. An information deadlock occurs exponentially quick.

OK, so what do we need to consider?...

The guy barely took a breath... he was like a machine spewing out design ideas.

[Siegel starts listing issues on the white board.]

The idea is for airport operations to transform all information devices into ones that would provide useful information. For example, arrival and departure screens may provide various forms of emergency information. New phone channels [numbers] would open up for people to call. And depending on where you're standing, you might get different information.

I can imagine that information needs change over time and the systems would need to reflect this as well.

PDA's, cell phones, airport screens, etc. would all work together. Maybe emergency screens would be rolled out in strategic locations. Whatever. That's our job to figure this out!

He could see the look of "terror" on most of our faces, but that didn't slow him down.

And what about languages? Do you realize the number of different language speakers walk through the airport each day?

Tyler, ...

At least he didn't call on me!



... you've been sending me e-mails on GPS and information-in-place technologies. Could you post some of those links onto FORUM? What's already out there? Anyone else? We need to look at several examples. Of course, don't build your designs around just these... it's got to work well for the O'Hare team; and of course the Feds will be watching closely. Technology-centered is not our goal. User-centered is our goal.

I could see from the look on Tyler's face that he felt he had "scored." Oh well, the guy rarely sleeps, so of course he's up on all this stuff...

Look. We're not out to create panic among the traveling public. We're not talking about putting up signs that say, "The airport is under terrorist attack. Have a nice day."

We've got to think about how to keep people informed and calm, with resources for solving their problems. Thinking about the users' goals is crucial, remembering that these will change over time. And, of course, the information systems must return to their original state once the crisis is over or nearly so. It's a transitional problem too. And on and on...

It's the "and on and on" that really gets me worried!

Look, I'd like to see you [he's pointing to me!] get together with three other designers and start mocking this thing up. Shruti, Basey, Nina, and the others, put together a few teams and get them going on this... You know what I have in mind. In the next couple of weeks, let's figure out the core of this thing.

Let me know if you need anything or if I can clarify the idea for you; I check the FORUM regularly. Let's get this thing mocked up and do a little testing. We have exactly one month. On October 4th, Microsoft will be here to hear our presentations.

Is Siegel crazy?

I think he could see the look of terror in my eyes.

Don't worry. You're going to love this one! Oh yeah... one more thing...

Now I knew we were in trouble!

If we're going to win the contract from O'Hare, we've got to make this computer imaginative. Nothing less is acceptable. Make it simple, elegant, and exploit the machine! Let's think outside of the box! This is the traveling public – thousands of people stranded in a single location with security, safety, and emotional issues galore.

With that, he took a swig of his Diet Coke, munched down a hand-full of pretzels, and was out the door as fast as he arrived.



Royer, [I asked, almost in desperation], *what does he mean by “thinking outside the box?”*

[David exchanged a mischievous smile with the other managers.]

Let’s talk about that in the FORUM when you’ve sorted out your questions.

Well, there goes another weekend!

Yet, without letting the managers know it, I was psyched to get started. Design must be in my blood! In fact, it all started when I took that HCI/d course at IU from Professor ... what’s his name?

Oh, how soon we forget...

Getting Started

You need to start formulating questions and get them into the FORUM. It’s a good idea (this is a polite way of saying that it’s a requirement) to select one person from each team to write the team’s questions in the FORUM; otherwise there will be 40 people asking questions, and chaos will ensue. This person is the facilitator. This means that you’ll need to decide who will take the team facilitator’s role; choose someone who hasn’t done this yet, if possible.

The design specs will be found in responses to various postings and replies, so these will need to be organized and processed by your team.

Considerations

The following are some things to consider as you design your solution:

- How do you make this design imaginative and an experience that creates confidence and security among the passengers? This is a different kind of user experience than we might think of for online gaming, for example.
- What physical form will it take? What’s available? It’s up to you, but cost considerations are always a factor. You might check out Jim Spohrer’s original article, but don’t get carried away with hardware solutions. See: <http://researchweb.watson.ibm.com/journal/sj/384/spohrer.html>
- Who are the users? Is it just the passengers? Might different people have different needs?
- What about input issues? Think about the broad range of people who will be using these devices.
- How will devices be coordinated?



- What's interactive? What's not?
- e use a kiosk, let's get away from box-like shapes!
- What kinds of computer imaginative solutions might you get from "outside of the box" thinking?

Surely there are many other considerations and questions. Use the FORUM (the Project #3 forum) to inquire about them. **What is discussed in the FORUM should be viewed as an appendix to this specification document; in other words, it's officially a part of this design document.** You should read the FORUM frequently to follow the changing specifications.

Share resources freely among teams in the FORUM. **We're one company.**

Mockup

Your mockups must be done in some tool or on paper and scanned into your presentation. **Remember that Microsoft will want to review your slides. Make sure that there are on-screen directions or clear off-line directions to guide Microsoft people when you're not there.**

Usability Test

You will need to conduct a usability test. Create good tasks that will help you understand the strengths and weaknesses of your design.

What to Submit for Project #3

1. Post in the FORUM your team's design questions. Your team will consist of four people (in a few cases, three people). Siegel and the mangers (mentors) will respond as the questions arrive. All members of the first five teams that post questions will receive a magic point.
2. Describe your vision for this project and what your system will do. Explain how the user's experience will be enhanced. Be brief. Limit of one page.
3. Submit assumptions (predispositions) and constraints, a design message, prioritized functional requirements, and a "rough" task flow diagram for your final design; no page limit. Don't worry about every aspect of your task flow diagram; at this stage we want to simply get a feel for how your system works.
4. Submit design sketches for your pre-design work. Submit this on paper. (No page limit.) These are your initial sketches. Don't throw them away!

[All students must participate in 1-4 above.]



5. Submit the result of the usability test for your first design. Your design should be tested with at least three people. (Limit of four pages for your usability report.)
6. Submit a file (called “Team _”) of your final mockups.
7. Submit your design documentation and justification (rationale). This should total a maximum of three pages. Submit this as a *Word* file as well. This explains the decisions of your final design.
8. Submit your presentation to Microsoft. This is the file that Microsoft will review for judging. The design documentation and justification document will go to Microsoft as well. Thus, you may need to repeat certain parts from previous documents, but Microsoft is not interested in your process necessarily.
9. Submit all files electronically to *Oncourse*. Submit paper versions of all presentation and *Word* files as well.
10. Each person on the team must submit in a **sealed** envelope their collaboration evaluation of each person on their team, *including a self-evaluation*. The form will be posted in *Oncourse* and the FORUM in the next few days.
11. All components of your team project should be submitted in one large envelope by the team facilitator, delivered at the start of class on October 4, 2007, with the electronic versions in the Drop Box by noon that day.

Consultations

Each team should arrange to meet with their mentor **at least twice** in the design process. The team’s facilitator should arrange the meeting. Failure to have these meetings will lower your team’s score.

