Human Factors International

PET User Interface Structure

Much more than just another pretty interface

A Conversation with Eric Schaffer
CEO and Founder
Human Factors International

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In this conversation, Dr. Schaffer talks about the PET design Structure.

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PET UIS—Much more than just another pretty interface —A Conversation with Dr. Eric Schaffer

Dr. Eric Schaffer, CEO of Human Factors, talks about PET User Interface Structure

We recently had a conversation about PET Research. Obviously, PET Research must lead to a concrete design of some kind. I've heard the term "PET UIS", or PET User Interface Structure. What is a PET UIS?

Well, first of all, PET Research as a foundation can be applied to a number of different design questions. When we first started we didn't realize it, but as we've moved ahead we found that PET Research informs digital strategy. It can give us a high-level direction for the application of technology that will trigger users to engage and convert. It can be used as a foundation for ideation of new products and new business models. We have found, for example, when we studied the way people felt using media, the research became a foundation for new kinds of offerings using video technologies. But our most common use of PET Research is for something we talk about as a PET Structure.

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A PET Structure is the direct analogue of what we talk about as a User Interface Structure (UIS). A UIS solves eighty percent of the challenge in classical usability. It solves what the interface should be, how it is navigated, what it looks like. It provides the specific and final design for the site or application structure (or the interface container). This high-level design will hold additional screens that will be created in the detailed design phase. The PET UIS is a high-level solution for the effective use of persuasion engineering approaches to convert customers.

PET UIS for Government: I'll come back to this throughout my comments, but when we think about how designing for Persuasion, Emotion and Trust (PET) applies to government—or any non-profit for that matter—we have to rethink some of the terminology. All of the key principles still apply, we just have to think a bit more generally about what we mean by terms such as "convert" and "customer". If we treat "convert" to mean "do what was intended" and speak of "users" or "visitors" instead of "customers", it's not so hard to think about how PET might apply to government sites.

This gets back to what HFI has been saying for some time now: The classical UIS relates to CAN DO whereas PET UIS brings the WILL DO into the structure.

Right. We recognize that usability is no longer enough. We need to go beyond making it so that people *can* complete a task; we have to make sure that they *will* do the task, that they will convert. It doesn't help that people can find a product unless they are motivated to buy it. This is the new frontier in interface design, which up to now has been approached by wishful thinking and people convincing themselves that they have good intuition about designing for conversion.

"Wishful thinking is no longer appropriate. Persuasion is an engineering problem."

But wishful thinking is no longer appropriate. Persuasion is an engineering problem. Just like structural design is not about somebody having a gift for structural design—it's about using a systematic approach based on the research, based on the billion dollars worth of studies that have been done on the human-computer interface. In the same way, when we go about building persuasion structures, we do it based on a foundation of methodology that comes out of solid research in how to influence people—some specifically focused on influence in digital environments.

PET UIS for Government: Again, keep in mind that "*convert*" doesn't have to mean "*buy something*" when we think about government sites. It means "*do what was intended*." For a government site, that might mean "*find the information you were looking for*." It could also mean "*submitted your information*" or "*contacted your representative*" or a host of other things.

A lot of people would say ad agencies already do this—they have flashy graphics that grab people's attention, and bring them down a certain path. But you would say that it's more than that. It's really a science-based approach, using a methodology which builds a persuasive structure?

Top-end and sophisticated ad agencies use a very scientific process. Actually, they use many of the same persuasion engineering approaches that we would. The difference is that when you get into an online environment, you have additional methods you can use. If somebody is making a TV ad, or publishing a magazine, they will basically approach the problem with priming, framing, and conditioning. We have a whole lexicon of additional methods we can implement

because we're in an online environment. We have the ability to interact with the customer, to engage the customer in ways that you can't do in traditional media like television, magazines, or newspapers.

PET UIS for Government: Government agencies are interacting with "*citizens*" rather than "*customers*."

Can you give us some specific examples of what you would do in a PET Structure that would be different from a classic UIS? How would apply some of these persuasion technologies?

"Most of the time, what we're doing is within the framework of the usability structure. We're adding emotional triggers—we're adding very targeted content that allows us to convert customers."

It turns out, really, that the PET Structure and the UIS go together very closely. The UIS is the container that holds the content. You have to be able to navigate; you have to be able to find the product. There are times when the user interface structure needs to be modified to meet the requirements of persuasion. But, that's less common. Most of the time, what we're doing is within the framework of the usability structure. We're adding emotional triggers—we're adding very targeted content that allows us to convert customers.

One of the problems we've seen is that people—even sophisticated people—who begin to address this issue of conversion start to put various kinds of persuasion tools into the interface. They might use testimonials to have social proof and social learning. They might put in a comparison to make use of the law of contrast, and make the price look lower. They just start making these moves in the design towards conversion, and initially they work. So, you can take the persuasion tools that we teach, and just start throwing them at the design, and you will begin to get some positive increment in sales, just from doing that. The problem is that over time you start to get persuasion clutter.

We have all seen persuasion clutter—you go to a site, and it's shouting "FREE, FREE, FREE" and "Our Subscription for less than a cup of coffee a day!" and "THIS IS THE LARGEST WEBSITE" and all these things are going on at once. It's just a mess. It breaks trust, and it makes a chaotic experience.

What we want is a PET Structure that uses a carefully selected set of approaches geared to a particular user population. These approaches need to be based on a deep understanding of the user population. And that's what we get from our PET analysis.

"What we want is a PET Structure that uses a carefully selected set of approaches geared to a particular user population. These approaches need to be based on a deep understanding of the user population."

It's not enough to know that I feel like my mobile phone must reflect my status in the community. It's nice to know that—and that's about as far as most research will get you. But as a persuasion designer, I have to know more—I have to know what this status in the community means. Why is it important? Is it that "My parents have worked hard, and I'll feel guilty if I don't reflect well on them?" That's very different than "By having high status, I'll be able to find the best friends." It's very different than "I want to have high status so that I can make a difference in the world and contribute."

When people talk about status, we need to understand the deep beliefs and feelings around that objective of status. What would it feel like to not have status? Why is it so important? Once we understand that, based on that really deep understanding, we can begin to look at how that cell phone can be designed to support status; how a website can be designed to sell that phone based on status. Then we're using methods targeted at the particular drive or block that user has. Maybe a user has a block around it being too expensive. Why is that block there? Do they feel they're not worth it? Do they feel that they'd be embarrassed around other people because they've spent so much, they'd feel foolish? What is underlying that issue? Then, we can attack that with appropriate persuasion engineering methods.

PET UIS for Government: Hopefully, you're beginning to do some of your own translations now. Instead of finding products, you're *finding information or performing some other task*. We're not so much converting customers as we are *helping users accomplish specific goals* (i.e., finding information, submitting something, doing something offline, etc.). We'll assume you've got this straight from here on out.

Are you saying that you have a list of methods you can apply and that these are defined in a PET Structure, and what's important is that the methods you use are based on the PET design research? Otherwise, you're throwing out persuasion methods without knowing what will have maximum effect?

There are quite a few methods that we know will have an effect. We don't want to throw those out at random. What we want to do is apply them to a particular situation that's going on for our customer base. If I feel like I'm being irresponsible by spending so much money, then I need to attack this issue at its root. Do I feel like I'm irresponsible in that I might be making a mistake in buying the wrong thing? Then, we need to take measures that will make me feel certain that I'm buying the right thing, and that I've done enough research, and that I've been responsible. We need to focus the tools. Each tool is scientifically verified, but each tool needs to be focused on a particular need for that population in order to get them to convert.

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PET UIS for Government: Yes, methods used for government should be based on PET UIS Research. A key area for government to focus on is "Trust". Remember, the "T" in "PET" stands for "trust." This is particularly relevant when we talk about government sites. A big part of the dynamic at play when a citizen uses a government site is trust—trust in the information, trust in the source. When we do PET research, we need to understand what PET strategies will promote trust and how to avoid or minimize situations that would erode it.

Can you give an example of how a specific tool could take advantage of a missed opportunity that you wouldn't know about unless you did PET Research on a product, say in the banking industry or something like that?

One of the things we found when we studied internet banking in Africa is that people were motivated to bank online because they felt like it gave them a more positive self image. It was actually seen as a boost to the ego. Therefore, we can use methods that frame the use of online banking as "you appear to be cutting edge" and "somebody who is able to manage the latest technology." We want a design that supports the person's self image and we do that with imagery, with

testimonials from people who are obviously savvy, and with functionality that makes the person feel powerful.

And this is an opportunity that wouldn't be addressed in a classical UIS project?

No. In fact, in some ways, the results can be the opposite. Somebody who wants to feel tech-savvy doesn't want an interface that's really completely simple, because then they haven't accomplished anything. They want something that's more on the edge, a bit more powerful, even at the expense of self-evidence. While there is a balance—we don't want people to have a bad experience—if somebody is going to have this as a basis of boosting their ego, clearly we need something a bit more complex, not just a simple toaster.

"At the end of the day, if we build something that's highly usable but doesn't sell, we haven't met our objective."

It might be better for the user to have something a bit more challenging.

Sure, if you're trying to create a sense of flow, of autonomy, a sense of efficacy. If you want the experience of fiero, which is the emotion of success, overcoming an obstacle, then by definition, you need an optimal level of challenge. You can't design the interface to be as simple as possible. You need something that will engage people. Just straight usability engineering alone is not competitive today—although of course you need to have that skill set in the mix. It's a given that you have to have usability skills—that's for sure. But in order to be competitive, you need to go beyond classical usability and be able to create conversion.

Right. This is a good example because it shows how, in the classical UIS, you would do it a certain way, but with the PET UIS you might take an opposite approach based on the research on your user group, and apply a tool that you would have missed with regular UIS.

When I teach the PET course, I often warn the usability people in the audience that their heads are likely to explode. This becomes a recurring joke throughout the course because there are often times when usability engineering practices and persuasion engineering practices directly contradict and conflict. That's something which takes a little adjustment for the died-in-the-wool usability

expert, but it's something that gets us where we want to be. At the end of the day, if we build something that's highly usable but doesn't sell, we haven't met our objective.

PET UIS for Government: And, at the end of the day, if we have a government site that doesn't provide information, facilitate participation, or otherwise inspire citizens to action, we haven't met our objectives. Whatever your objectives are, whether they be selling widgets, *providing information, engaging with citizens*, or anything else, PET principles can help understand the underlying drives and blocks that inform a strategy to help make that happen.

"The question is, are you using this in a way that is in the user's interest, or not? You can use these tools for good or evil, and I think that's the main issue."

In some ways, the PET approach to building a UIS is more beneficial to the business rather than the user, in the sense that we build the classical UIS from the user's perspective, but sometimes that might miss the business imperative.

You could definitely look at it that way. The usability person is trained to see their customer, their client, as the user. They advocate what the user wants, whereas the persuasion engineer is really advocating the business. Obviously you need to consider both these things but, for example, from the perspective of persuasion engineers, if something was a bit less convenient but it sold more, they wouldn't have a problem with that. We have to have that perspective and I guess we are promoting that throughout the usability field.

PET UIS for Government: Things are a bit more balanced when we consider government sites. The "business" side of the equation here is not focused on making a profit. They are focused on fulfilling mandates and provide citizens with the information and resources they need. PET strategies are tools. You can use them in many ways for many reasons. Whereas a commercial site may use a particular PET strategy to maximize profit, a government site is more likely to use it to promote trust, participation, or action. For example, a commercial site may implement a social network (leveraging PET strategies such as social learning and social proof) to help defray the costs of technical support. A government site may implement a social network to promote the goal of participatory government with the citizenry.

Some people, especially those who always look at things from the user's perspective, might say this is manipulative, leading users down a path they wouldn't normally take just for the sake of selling a product. Is there an ethical issue here?

It certainly is manipulating the user. The question is, "Are you using this in a way that is in the user's interest, or not?" We've seen persuasion engineering projects that were used to get people in third world countries to wash their hands after going to the toilet. Or to get a vaccine—clearly, those saved lives. On the other hand, we've seen very sophisticated persuasion engineering products which are designed to get people to smoke—those take people's lives. You can use these tools for good or evil, and I think that's the main issue.

We do absolutely have a technology of manipulating people to buy, to consult with their doctor, to vote, to enroll, and this is a very real part of a business world today. We need to be able to have customers engage with us, to come back to the site again and spend more time on the site, to make the site sticky. It's funny how many people talked for a long time about making a site sticky, but they were so unclear about what makes a site sticky. So, they were talking about things like flashy colors—that's not going to make a site sticky at all. What makes a site sticky are things like optimal level of dissonance, social pressure. Things like that make a site sticky, not having pretty graphics.

So, graphics aren't that important, and are not part of the PET UIS? Or, are they just one of many tools?

They're tools. But the difference is this—is the graphic being used because it's pretty, or is it being used in very specific ways? We use graphics in a very intentional way to stimulate a drive or remove a block. We use graphics to highlight a contrast. We use graphics to highlight and stimulate a drive. There are lots of different things that we do with graphics. But the intention is not to be pretty—the graphics are used for very specific psychological reasons.

What kinds of projects do you think would benefit most from a PET UIS?

Well clearly PET UIS is great for e-commerce. But it's for other things as well. A site which provides content that wants to be sticky—maybe it's being paid by number of page views—PET UIS is great for that. Or a government site which isn't selling anything, but is trying to get people to engage with the government through a less expensive online channel, or make people feel like they're being well served. That's another example.

"There are lots of different things that we do with graphics. But the intention is not to be pretty—the graphics are used for very specific psychological reasons."

So a PET UIS might make it easier to fill out tax forms? Or, to start a business?

Absolutely not. A classical UIS can make it easier to fill out tax forms. Usability work makes it easier. But, if you want to increase compliance, so that more people actually file their taxes, that's a PET issue.

So it could be useful for government in other ways too. Selling lottery tickets, for example?

Well, that's an e-commerce issue. But even a newspaper site, that's another case where PET would apply. Whether I'm selling something directly, or selling an experience, or trying to influence people to vote differently—these are all cases where I'm trying to convert somebody. But if there's no decision to be made, then PET is not interesting. If I'm an airline pilot, and I'm filling out a flight plan—if I only have one place to fill it out—there's no persuasion needed. The FAA provides that. I have to do it. And, that's pretty much what's going to happen.

People that actually do this kind of design work—they must require some kind of background or technical training to understand the tools of the PET Structure and how to apply them?

We have the PET design course which gives people a pretty good foundation in how to do that. That's our intent. Clearly, somebody with a background in

psychology has a great foundation for doing persuasion engineering work. Other people who have graphics skills, for example, have a valuable foundation. Depending on the situation, that's something that we need to optimize for ourselves.

We will also soon be releasing an advanced course "The PET Architect". This course goes beyond the application of tools to determination of a synergistic set of persuasion methods tuned to a customer population. And we will show how this applies to strategy and innovation, as well as application and site design.

"If there's a decision to be made, then we need to do more than just bring a person to that decision. We have to address the issue of motivation. We have to address the issue of trust."

Would you say that applying PET design to a structure is like turbo-charging the site or application to really take advantage of how a user thinks on a deep level? Is this a business model that can be really effective in leading the users to get what they want while at the same time fulfilling the business goals?

Yes. If there's a decision to be made, then we need to do more than just bring a person to that decision. We have to address the issue of motivation. We have to address the issue of trust. We have to make sure people don't reject our site because we don't trust it. We have to be aware of the emotional triggers to get people to actually go ahead and interact.

Is there anything else you would like to add?

It is interesting that organizations spend a lot of time and money doing graphic design, developing interactions, developing demonstrations. But often these are not focused very precisely on the customer population. They're not part of a systematic approach to move people toward conversion. They're not based on a deep understanding of the customer. I think anybody can start reading books and start throwing various persuasion methods into their site. The result is, initially, you'll make some more money. So it's good from that viewpoint.

But soon clutter sets in, which degrades the experience and your numbers. It's so much stronger, rather than just picking up tools that look nice, to have a real blueprint of what you're trying to achieve, and then use the tools to achieve that end very systematically. That's what a PET Structure does. It's something that

takes maybe six weeks to do, eight weeks at most. It requires that we do some very in-depth work to understand customers.

This is quite different than most kinds of data gathering. It's very different from a task analytic interview. It's very different from the insights we get from focus groups, which are actually quite a poor way of getting anything deep from a customer's viewpoint. The focus group does identify what people say in public—which is not necessarily at all what they're really feeling.

"What we want is an engineering approach which guides the creative work of our graphics staff, which guides the investment in interactivity, and which, in the end, will create a highly targeted site that will effectively convert people."

So we want to approach this issue of conversion not as something which is based on luck, not as something which is based on needing to have some God-given intuition. What we want is an engineering approach which guides the creative work of our graphics staff, which guides the investment in interactivity, and which, in the end, will create a highly targeted site that will effectively convert people.

Is there always going to be a PET Research component to building a PET UIS?

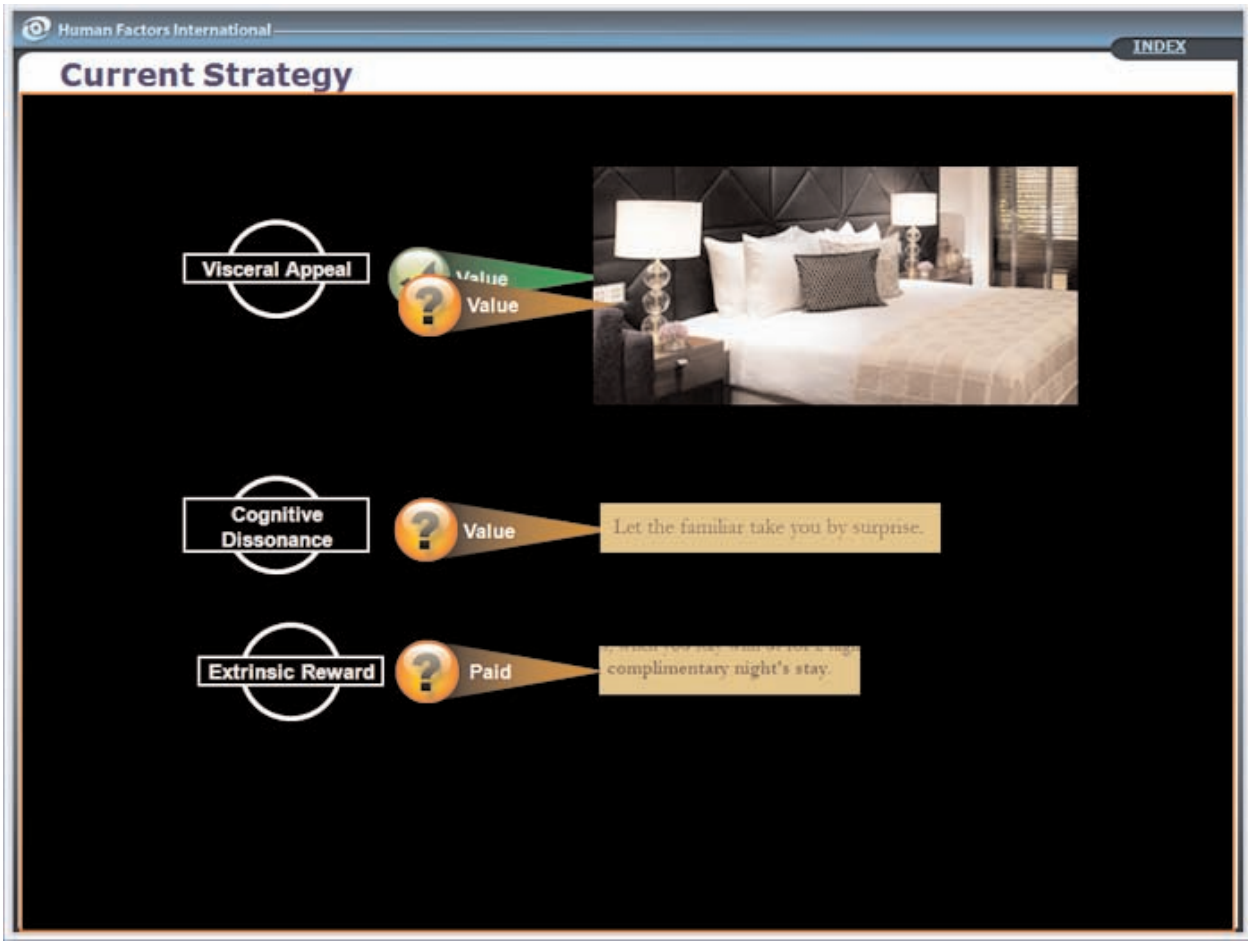
Absolutely. A PET UIS, a PET Structure, is always going to have a major requirement for us to understand the user deeply. Without a task analysis you can't optimize a workflow. Without a PET Analysis you can't optimize persuasion.

Find out more about HFI's PET design™.
www.humanfactors.com

Examples of persuasion flow before and after applying PET design methods.

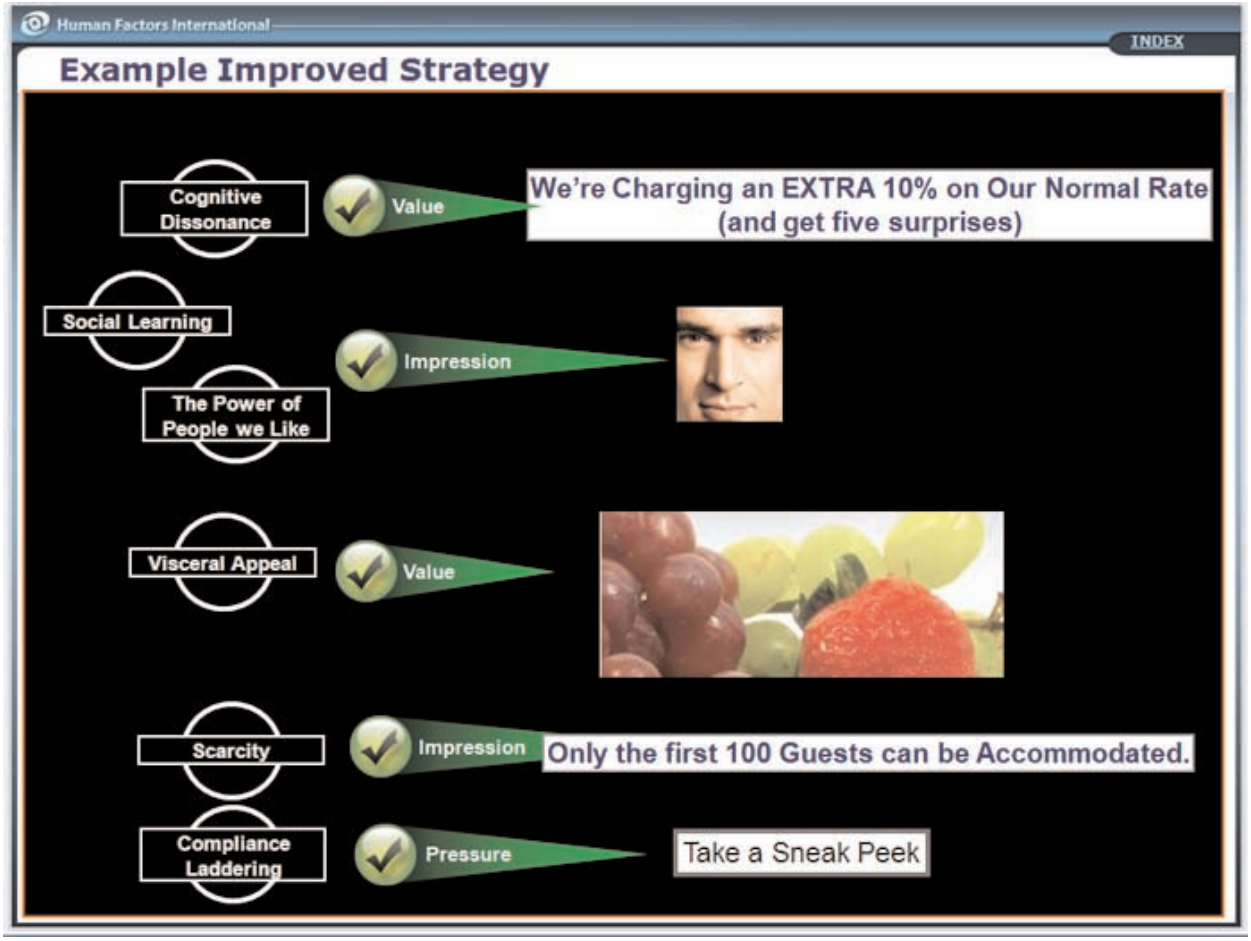
These are slides that show the analysis of the current persuasion flow in yellow if they're not very good, red if they're very bad. Then, an alternative design. This is a before and after from a purely PET point of view. Each method is a well-understood, well-defined technique in persuasion engineering.

Example 1



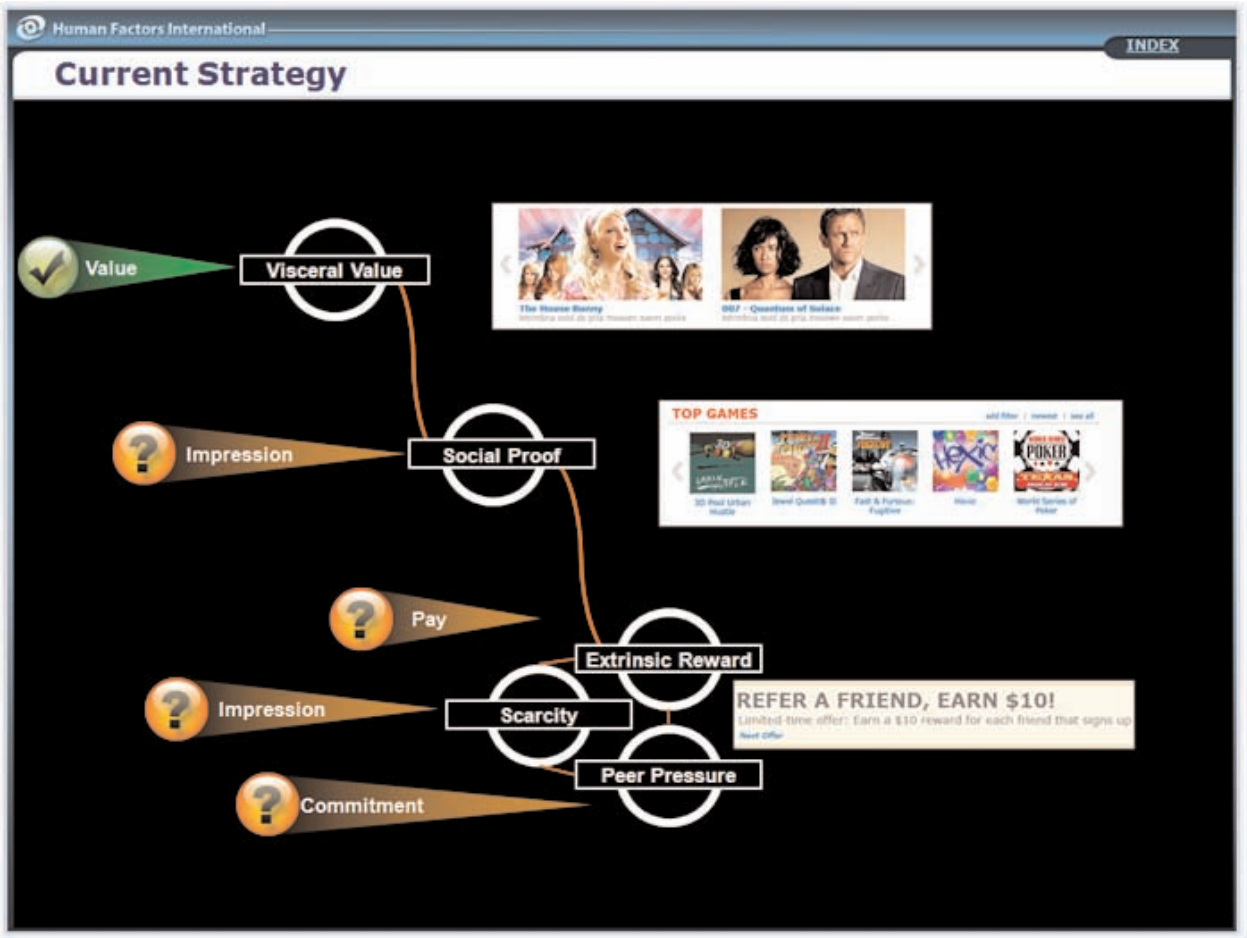
This was done for Taj hotels. The original design had some very pretty looking pictures of architecture, which was nice, but not necessarily targeted at what people care about in a hotel. We suspect that pictures of nice architecture and pretty beds is not the main focus for most people when selecting a hotel. Clearly, if you run the hotel, you spend a lot of effort and expense on those things, but if I'm an executive picking a hotel, there are other concerns that may be more important. There is also some intent to use cognitive dissonance, an affect you can think of as curiosity. "Let the familiar take you by surprise"...it says that it's

going to give you a surprise, but the familiar means that the surprise isn't much of a surprise. Then they give you a reward of a free night's stay. So, this isn't a very strong strategy from a PET perspective.

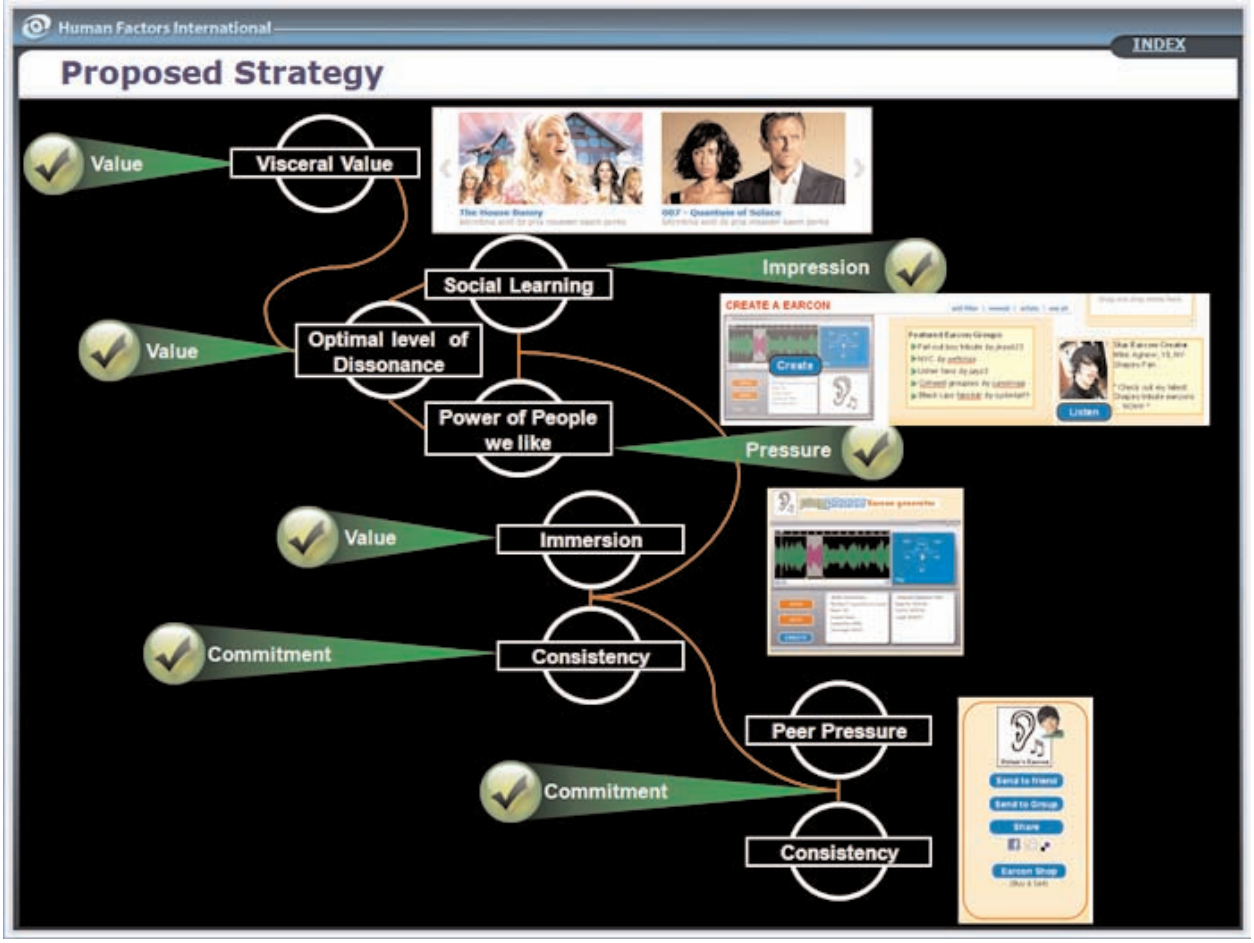


The redesign says, "Let's put out something that really seems different." Like, everybody expects a discount on a hotel; we'll say we're charging an extra ten percent on our rate, but you're going to get ten surprises. That you might be interested in. Then, social learning and the power of people we like—have people who are like the target population describe their experience, maybe talking about the surprises. We put in visceral appeal rather than the architecture, which is pretty—we would want to have instead something like food which will wake you up emotionally, but also be more tied into what your experience there will be. We may also want to have scarcity—only the first hundred guests can be accommodated. Make it something which will trigger my response based on scarcity. And, compliance laddering, which is step-by-step bringing you in, giving you a sneak peak, and then showing you more and more things.

Example 2



This site sold ringtones and wallpapers. Basically, the only thing they had working for them was pretty pictures of the ringtone covers and wallpapers. It had pretty pictures of the people who were singing the songs. This was pretty—but that's about it. Social proof—you want to show people that lots of people are doing it. Top games does that to some extent, but we don't know what "top" means. Then they have refer-a-friend where they are giving a reward which is scarce (only for a limited time). And it would create peer pressure, because you would be selling your friends.



The redesign: Same visceral value. We have pretty pictures. But now, in order to get a person into the site, we have optimal level of dissonance, social learning, and the power of people we like. And these are combined with the idea of creating a customized ear-con. "What is that?" I'm curious what an ear-con is. I can see somebody like me who is recommending it. Then, I create an ear-con which becomes a marker of my group, and so people in my social group can use this ear-con, and we all have, in a sense, a similar ringtone because it starts with a tone or something that's similar in our group. Then, I get involved in creating the ear-con—I work hard to create it (an experience of immersion). And I commit to giving it to my friends—so we get that kind of consistency effect where I'm saying, "OK, I'm going to do this" so then I have to do it. That ends up with my friends feeling like they need to be part of this experience as well, since it's become a marker for our group.

About Dr. Schaffer

Eric Schaffer, Ph.D., CUA, CPE
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Dr. Eric Schaffer is the founder and CEO of Human Factors International, Inc. (HFI). In the last quarter century, he has become known as the visionary who recognized that usability would be the driving force in the "Third Wave of the Information Age," following both hardware and software as the previous key differentiators. Like Gordon Moore's insight that processor power would double every 18 months, Dr. Schaffer foresaw that the most profound impact on corporate computing would be a positive online user experience—the ability for a user to get the job done efficiently, easily, and without frustration.

Dr. Schaffer's book, *Institutionalization of Usability: A Step-by-Step Guide*, provides a roadmap for companies to follow in order to make usability a systematic, routine practice throughout their organizations. Dr. Schaffer also co-developed The HFI Framework™, the only ISO-certifiable process for user-centered design, built on principles from human-computer interaction, ergonomics, psychology, computer science, and marketing.

Dr. Schaffer has completed projects for more than 100 Fortune 500 clients, providing user experience design consulting and training. He has recently been traveling the world teaching HFI's newest course, How to Design for Persuasion, Emotion, and Trust.

Dr. Schaffer is a member of the Human Factors and Ergonomics Society and a Certified Professional Ergonomist.

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