Conceptual Designs:
The fastest way to capture and share your idea

by BJ Fogg, Ph.D.
bjfogg@stanford.edu, www.bjfogg.com
Persuasive Technology Lab, Stanford University

Published chapter in *Design Research: Methods and Perspectives* (M.I.T. Press, 2004)

Brainstorming is not enough

Brainstorming can be pure pleasure. With a good creative team, the new ideas can keep rolling in like fresh waves to a shore, one right after the other, offering endless variations on a theme. Being in the creative flow and having so many ideas wash over you can be invigorating. But like the billions of waves that dissipate on the beach each hour, the energy of simple ideas – even excellent ideas – usually gets lost after the brainstorm is over.

There's a problem in the process of invention: Designers lack an efficient method for capturing and communicating the power of their best ideas.

In this chapter I hope to solve that problem. In the pages ahead you'll learn how to create what I call a "conceptual design." The process I describe can help you develop your idea, transforming it from a simple concept to something that seems on the verge of reality.

What's more, the process of creating a conceptual design is simple and fast. In less than three hours you can crank out a first draft. Once you have a conceptual design in hand--even a first draft--you can share it with your target users, your colleagues, or your boss.

Conceptual designs let you share and improve your idea

Sharing ideas early and often is one key to success for designers of end-user products and services. When you share with target users, you get feedback to help you improve your concept. When you share with your colleagues, you can make sure everyone on the team has a similar vision. When you share with your boss, you can enlist her support and feedback early. Or if your boss hates the concept, she can let you know right away, so you can scrap the idea and work on something else that has more potential for your organization.

If you don't have a method for taking an idea from a brainstorm and moving it toward an actionable plan, such as a prototype or user research, you will lose time, momentum, and perhaps support.

I've been developing the format for conceptual designs since 1996 when I worked at Interval Research. Since then I've taken the method with me to my professional work,

inventing new products and services at Sun Microsystems, Casio Research, and for clients. I've also taught the method to about 150 students over the past seven years at Stanford University. Over this time I've improved the format, distilling the formula down to the essential parts in the right sequence.

Before I explain how to create a conceptual design, I suggest you go to the end of this chapter where I've placed two examples. These conceptual designs are by students who have no significant design experience. They did these projects in a handful of hours over a period of two weeks. It doesn't matter whether you like the creative ideas or not; what I hope you see is how quickly you can grasp these concepts. Like most conceptual designs, these slides share lots of information in a sequence that makes sense. What you don't see at first is how much the framework for conceptual designs helped the students (and myself in my own work) identify what they needed to do to make their concept understandable. By the end of this chapter you should see how all this fits together and what role conceptual designs can play in your own work.

So let's dive in.

What goes into a conceptual design

The standard conceptual design has twelve parts:

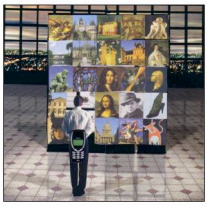
1. title page
2. overview
3. user description
4. storyboard of user experience
5. prototype
6. features/functionality
7. justifications for design (theoretical and practical)
8. results of user testing
9. shortcomings of design
10. expansion -- what else is possible
11. next steps in design process
12. summary

As I've evolved the formula for conceptual designs over the years, I've modified things. At times I added elements that I realized were missing (such as #11: next steps in the design process); other times I cut elements that weren't as important. As it stands now these twelve elements serve most purposes, though at times teams may need to add some elements to describe market landscape or revenue models.

Over the years I've also found that it's simplest to create conceptual designs in PowerPoint. Other types of presentation software will also work. Word processing programs aren't as good because they don't have the powerful visual abilities. Furthermore, sooner or later you'll present your concept by projecting your ideas onto a screen. For these reasons presentation software is the way to go from the beginning.

Because conceptual designs tend to follow a pattern – twelve elements in the same order – I've created a template (you'll find this template at bjfogg.info/cd). Starting with a template helps you be efficient in developing your idea; you simply start replacing things on the template with your own material. With this template in hand you don't have to think about order of ideas or formatting issues. Instead, you can stay focused on the particulars of your user group, your concept, and your audience.

The easiest way for me to demonstrate how this template works is to show an example. In the pages that follow you'll find my template next to a student team's final concept, each slide side by side. I'll explain things at each step. But you should also take time to note how the students worked from the template to create their deliverable. In this case, this two-person team spent 10 hours on this project, start to finish.

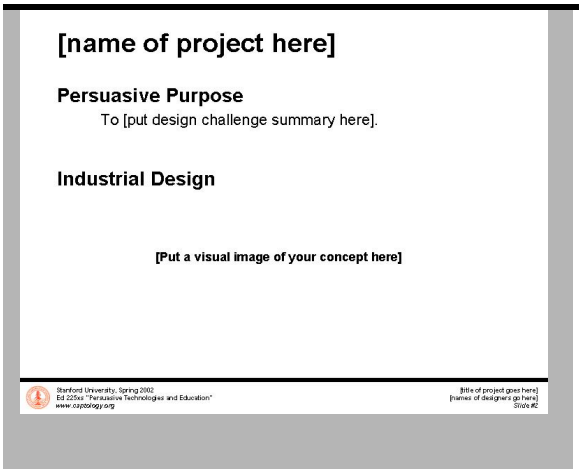
My basic template	**One team's deliverable – Blond & Chou (2002)**
1. title page	**1. title page**
[Concept Name Here] *A conceptual captology design by* *[names of designers go here]* Design Challenge To . . . [put the challenge summary here]. *Time limit: [put time limit here]* Stanford University, Spring 2002 Ed 225xx "Persuasive Technologies and Education" www.captology.org [title of project goes here] [names of designers go here] Slide #1	Art Smart *A conceptual captology design by* *Kara Blond and Josie Chou*  Design Challenge To design a mobile phone application that attempts to motivate or influence users. *Time limit: 10 hours* Stanford University, Spring 2002 Ed 225xx "Persuasive Technologies and Education" www.captology.org Art Smart Kara Blond & Josie Chou Slide #1

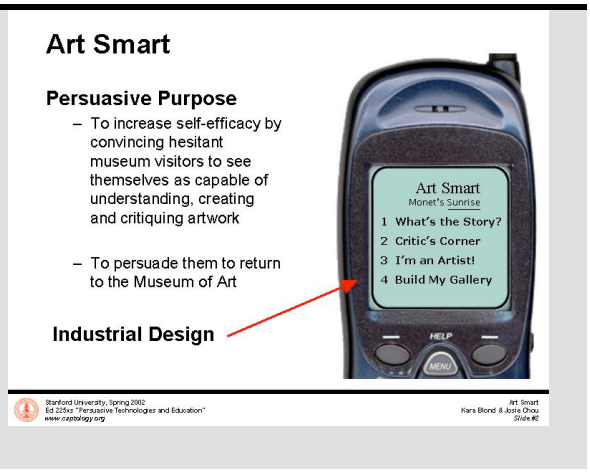
Notes about the <u>title page</u>

In the conceptual design formula the title page is more than a gratuitous cover; the title page launches the concept quickly and clearly. The concept name and creators are listed prominently, and the graphic generates visual interest. Both of these things set expectations about what's to come.

Because the template in this example is geared toward design challenges, the title page includes a summary of the design brief and the project time limit. In a corporate setting designers should instead say what they are trying to accomplish with their concept (for example, "Project Goal: To win back our market share in the digital camera space") and list how much time they've invested in the project so far. Explicitly stating the goal and time investment helps the design team and executives decide whether it's worthwhile to continue the project.

2. overview	**2. overview**

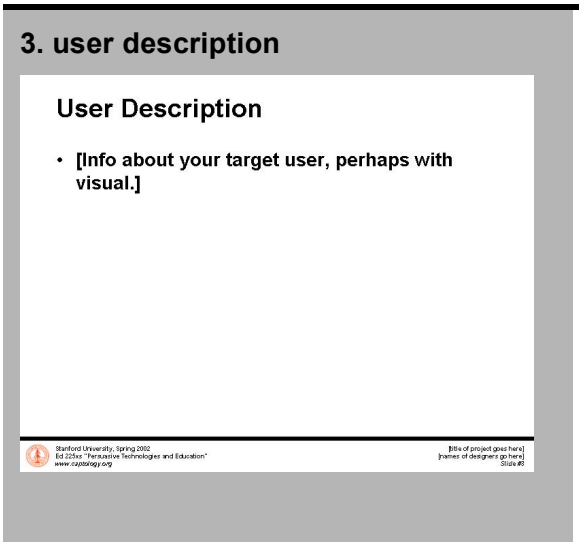


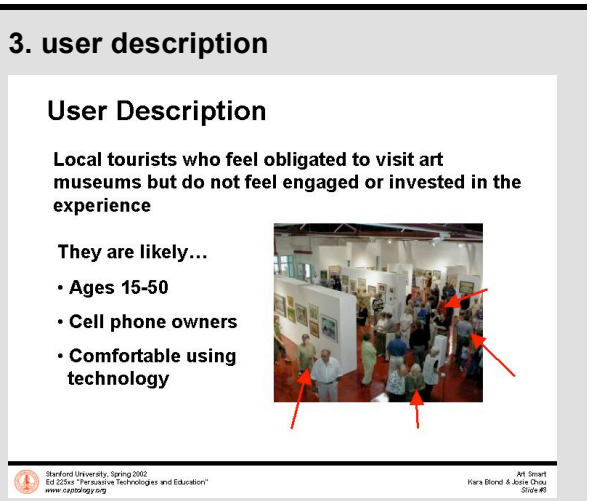


Notes about the overview

The overview restates the project name and expands on the purpose. It's worth repeating these things, since the concept will be new to your audience and many people don't pay attention to things the first time around. The most important element on this slide is the visual of the industrial design, whether it's a physical device or an interface. Getting this visual into people's heads early helps them start thinking about your concept in concrete ways.

Note that at the bottom of each slide there is a footer that contains information about the project, date, designers, and so on. If someone comes into the presentation late, these elements help orient the late-comer to the concept. Also, in many corporate settings presenters hand out paper slides for people to take away. These pages can get separated down the road, so it's good practice to put all this information on each slide.



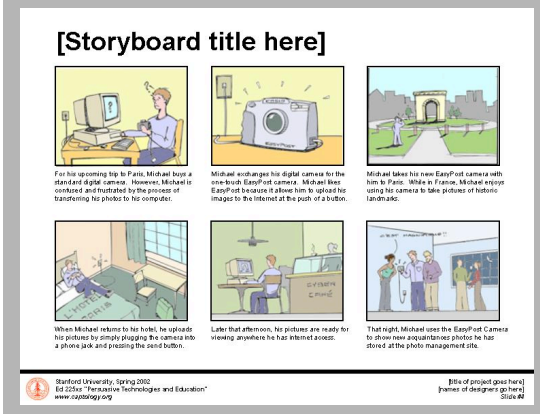


Notes about the <u>user description</u>

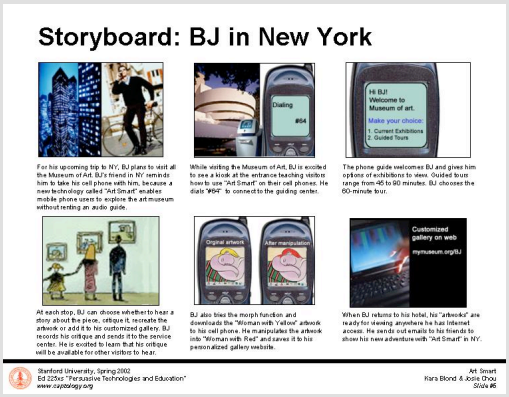
The user description should not be overlooked, although it sometimes is when designers assume that *everyone* knows the target user. The fact is that someone new to your concept won't know the target user unless you tell them what you're thinking.

At this point in your design process you may not have much information about your target user, but you can put something down on this slide, ideally including visuals to help bring that user to life. If the project expands, then this is one area in the conceptual design that will expand dramatically as you get more understanding about your target audience.

4. storyboard of user experience



4. storyboard of user experience



Notes about the storyboard of user experience

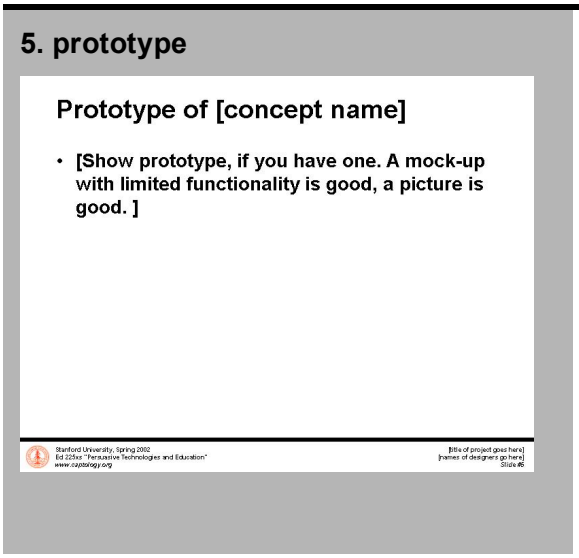
I'm a big fan of storyboards. Here's why . . .

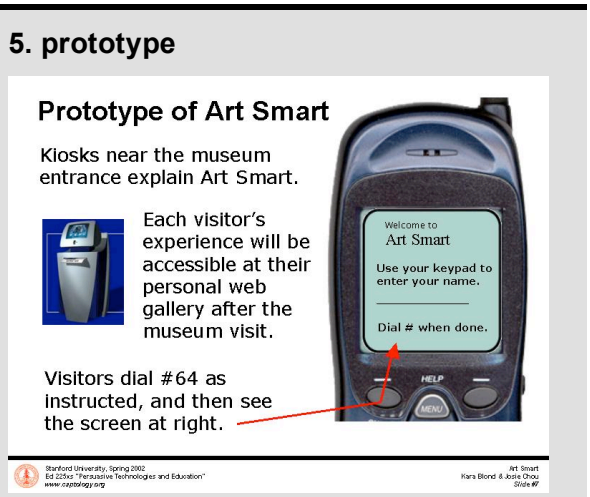
The most effective way to share your concept is to tell a story about how a particular user would experience what you propose. Of all the slides in a conceptual design, this is the one that has the potential to communicate best – and to win people over. In fact, if you have time to share only one slide from your conceptual design, this is the one to share.

Of course, executives will want to see hard numbers to make a business decision, but I've found they can't easily say no to a good story. In the early stages of design, you don't have time to round up all the market data or technical requirements, but you should take the time to invent a story and create some visuals. When you show a storyboard to executives and decision makers, they will understand your idea quickly. And if your story is compelling, you buy yourself more time to round up the data management will need down the road.

Storyboards are also a great way to share a concept with target users. Showing this slide starts a productive discussion in focus groups and interviews. A storyboard can give you the same type of high-level feedback as a rapid prototype.

Storyboarding is also an effective strategy for cross-cultural innovation. During the three years I worked with Japanese executives who had marginal English abilities, I found that sharing storyboards was key to making my concepts clear. Carefully scripted pictures can overcome language barriers.





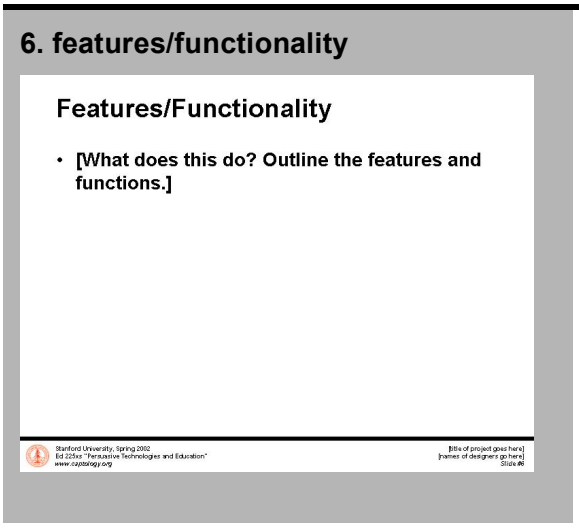
Note: The team created four more pages of prototype material, which is not shown here.

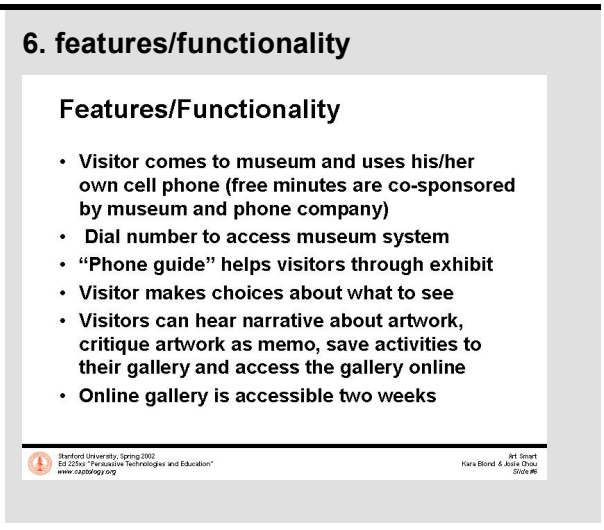
Notes about the prototype

I define prototype broadly. A prototype can be a visual that suggests the functionality, as the example shows above. It can be photographs of a paper prototype. Or it can be a rapid digital prototype created in just a few minutes. In these conceptual designs the level of prototype depends on how much time you have given the project. Even if you have just three hours to produce the conceptual design, you can at least sketch a prototype. Often a sketch at this early stage is superior to something that appears to be high resolution, since a sketch will evoke comments about the overall concept, while a high-resolutions version can distract users or executives who might focus on pixel-level details.

When sharing a new concept, some people jump right into presenting the prototype before they establish the project purpose, the target user, and the context of use (shown in the storyboard). Rushing to show the prototype is a mistake. Without knowing the other elements, your audience won't know be able to think accurately about your concept or how to evaluate your prototype. They'll make guesses about the purpose, your user, and the context of use. That's not good.

In my year-long stint as a VC just before the dot com crash (after which we all returned to our normal lives and lived happily ever after), I listened to dozens of presentations where entrepreneurs proudly showed off their prototypes while people on my team sat in the dark scratching our heads. We had little idea what the entrepreneurs were showing us. It was frustrating. I eventually learned to stop the entrepreneurs so they didn't waste everyone's time; I would ask them to back up and tell us a story about someone using their innovation, whether it was another company using their video compression technology or an end-user wearing a new type of fitness device.



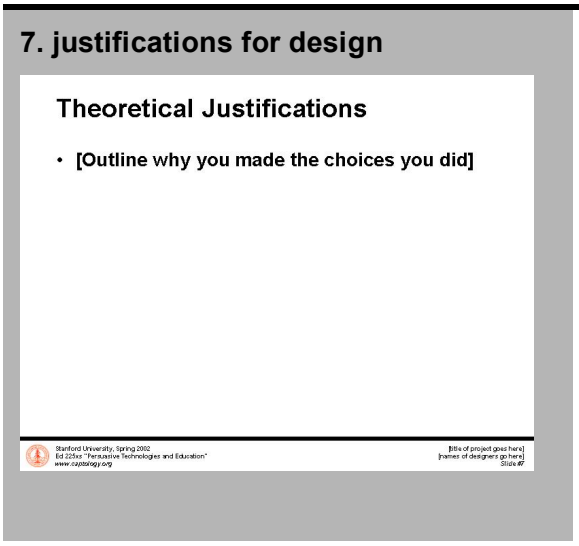


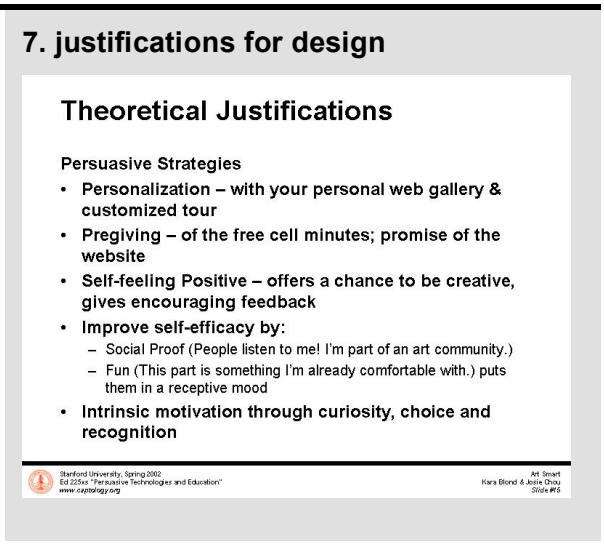
Notes about the features/functionality

This features/functionality part of the template gives you an opportunity to outline details of the concept, including those that the storyboard and prototype could not convey. At this point your audience understands the big picture and should be ready to deal with more details. But don't include everything on this slide. One of the hardest things about creating a conceptual design is knowing what to include in your concept and what to exclude. The temptation is to include lots and lots of feature and functionality. Don't do it!

To help myself and others resist the temptation to overload the features/functionality slide, I ended up adding a new slide toward the end of the template: #10 -- What else is possible. This is where you can put ideas you really like but that don't fit into the streamlined vision. More on slide #10 later.

In an industry setting after the sections on the prototype and the features/functionality, you'll eventually want to include an overview of technical requirements or a systems diagram. When I work on industry projects, I farm this part out to engineers.



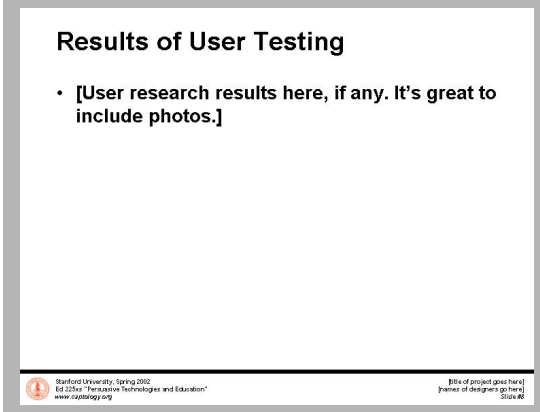


Notes about the justifications for design

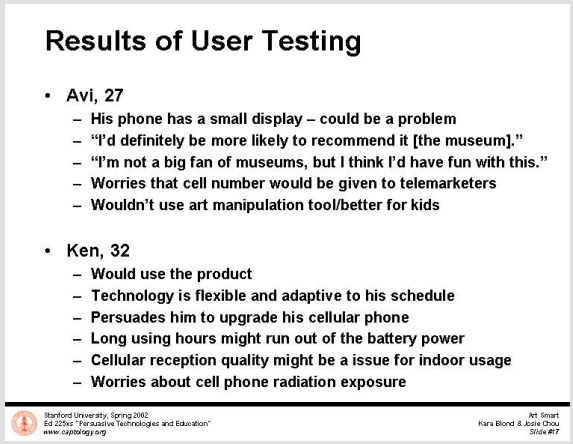
The justification section allows you to explain the rationale behind your design decisions. In the example above the designers justified their concept by drawing on academic theories of persuasion and compliance, which is fitting for this type of project.

But in an industry setting you've got to be more practical, since people who control the purse strings are rarely impressed by academic theories. While theoretical underpinnings might strengthen your case in the corporate world, I've learned that executives want to see practical types of justification, things like the value proposition; the market size, timing, and positioning; and the fit with company's goals, risk profile, and competencies. If you understand a company's market and goals, these bullet points are fairly easy to outline in a few minutes. If you feel out of your element, just give it a shot and take comfort in knowing that the company hired you to innovate and design (they hired someone else to make strategic decisions). In my experience, the real benefit of this slide is to start a discussion -- both inside the innovation team and with decision makers -- about if it makes sense to pursue a concept further.

8. results of user testing



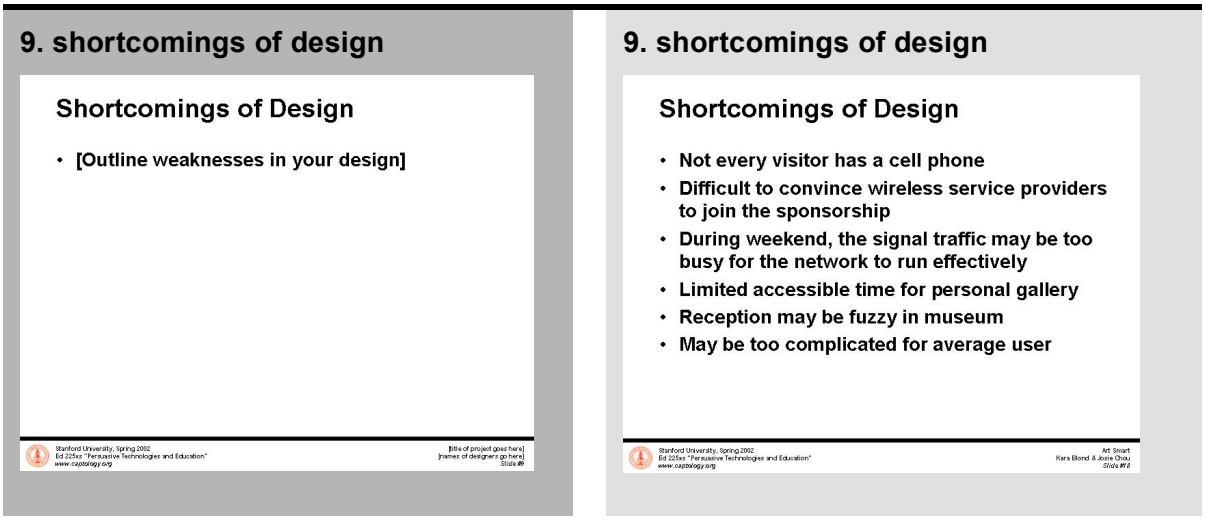
8. results of user testing



Notes about the user testing

I'm always pleased when designers manage to complete some users studies as part of a 10-hour project. It's true that having just a handful of studies may not reveal much (though at times they do), but I think it's good discipline to perform some user studies at this early stage, even if it's just a couple, as the example above shows. This is true for both academic and industry conceptual designs.

I include this slide in the standard template to make a point: user studies are important. But in reality this slide often ends up empty. And with good reason. It takes time to prepare materials and conduct user studies. It's a rare designer in a rare situation who can complete user studies within a three-hour conceptual design project. If your time is limited, you won't be able to fill this slide with substantive results or user feedback. But don't leave this slide blank (or worse, just delete it). In my own work when I don't have results to share, I use this slide to outline a rough plan for running future studies with users. This takes only a few minutes and shows you're serious about going further with the project.



Notes about the shortcomings

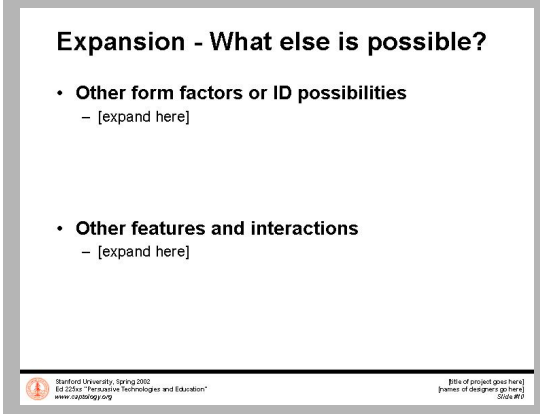
While all the other elements in the conceptual design formula point out the positives – the potentials and possibilities – this section on shortcomings points out the problems, both in the concept and the work done so far. Beginning designers find this step counterintuitive. But in an industry setting it's vital to make weaknesses clear. And it doesn't hurt. Really.

Paradoxically, the positive elements in your conceptual design become more positive when you point out key shortcomings. In other words, when you include shortcomings, the concept you're proposing will seem more realistic and less like hype. You also build your own credibility by showing an awareness of why your concept may not work.

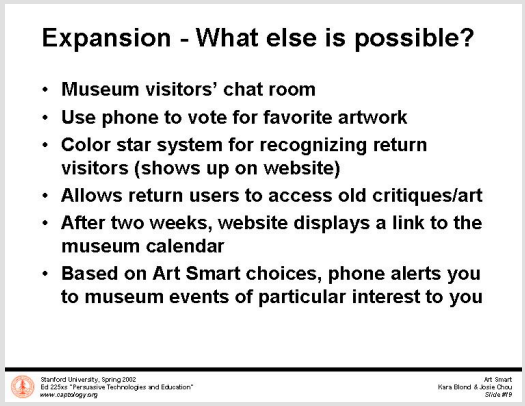
Industry projects have a greater chance of succeeding if the innovation team and decision makers address the shortcomings of a concept early. And I've found that if you do not point out the shortcomings to executives, they will do it for you. In fact, this is likely to be an executive's first response: outlining all the reasons why your idea won't work. You take this negative response away from them when you point out the weaknesses before they have a chance (and if they interrupt before you get to the shortcomings, you can tell them to hold on – you have a section discussing the weaknesses).

When sharing the shortcomings with target users, they will agree with some of your points but — more interestingly – I find they sometimes argue back, saying that certain things aren't really weaknesses. For example, the first shortcoming listed for the ArtSmart concept is that not everyone has a mobile phone. If you share this shortcoming with users, you may hear them saying you're wrong: pretty much everyone has a mobile phone these days – or they will – so this isn't really a shortcoming. Sharing shortcomings with your target audience is a way to figure out if users perceive the same shortcomings or not, a helpful perspective.

10. expansion -- what else is possible



10. expansion -- what else is possible



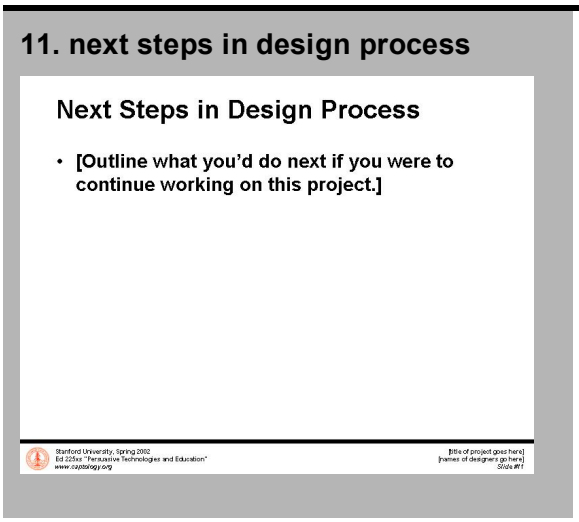
Notes about the <u>expansion – what else is possible</u>

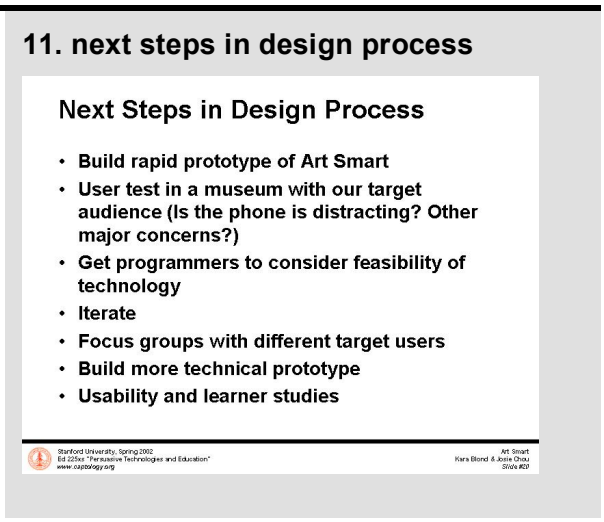
The section on expansion allows you to capture and share a wide range of ideas you had for the concept. Of course, not every form factor or feature can go into a single concept; you've got to make decisions about what ideas to cut. But some of these ideas may be good and cutting them can be painful; some of the ideas may be part of "Plan B" or a future project. For these reasons I've found it important to include a section on "what else is possible" in the standard conceptual design template.

When an innovation team reaches a sticking point about what to include and what to cut, being able to put someone's pet idea into this slide (rather than making it a key feature) helps the work move forward. In this way the pet idea doesn't get lost, but it doesn't end up derailing the project or the process.

When sharing a conceptual design with executives, you might find that they light up about an idea you've listed in the expansion section. They may focus on one bullet point and essentially say, "That's it! That's the angle I want you to pursue." In the more typical case, showing executives "what else is possible" lets them see you have considered and ruled out competing alternatives.

Sharing the expansion points with users allows them to give you quick feedback about ideas you're cutting from the project. You may find that one of the ideas on the chopping block is actually the secret sauce for your entire concept.





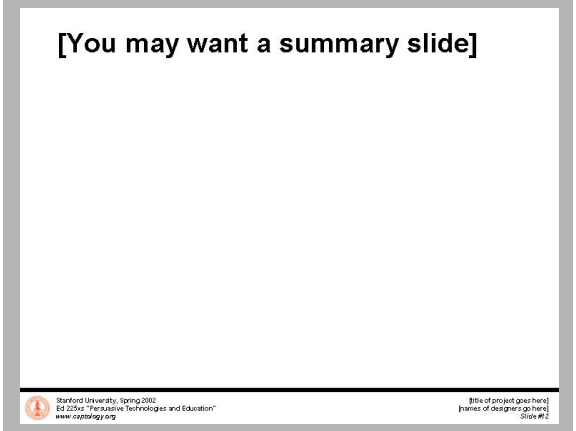
Notes about the next steps in the design process

The last new piece of information in a conceptual design is a list of next steps in the design process. Creating a plan for next steps doesn't require a lot of time; it's a good investment of your limited time. These steps may be tentative, or they may hinge on decision maker's response to the concept.

In an industry setting the section on "next steps" gives the innovation team a chance to discuss and identify what they should do next. This keeps people coordinated around a plan, even if the plan is simply a few bullet points. As the conceptual design becomes more fully developed, this section will start looking more like a project plan, with a work schedule and deliverables.

I've found that many students are unrealistic (or naïve) about what their next steps would be. Even after the dot com crash, some student teams still list the same next step: "get funding." This gives me a chance to help them understand what steps would come after the first draft of a conceptual design – and it's not fundraising.

12. summary



12. summary

[This team did not include a summary slide.]

Notes about the summary

Just as books and articles conclude in various ways, the final section in a conceptual design can take on different forms. The default mode is to provide a summary of the project, like one of the examples does in the appendix. Or you can simply cut the summary and focus your conclusion around the "next steps," as discussed in the previous section. Either way works.

When presenting a conceptual design to decision makers in an industry setting, I almost always use the summary section for action items: "This is what I want from you now." I typically list bullet points asking for immediate feedback, for support (including money or talent resources), and for a decision about the next deliverables and deadlines. I like to discuss and decide right on the spot, not in some future meeting. This keeps a project moving.

If decision makers decide to kill the project, it doesn't hurt so bad, because you have not spent weeks or months putting your heart and soul into the concept; you've invested only a handful of hours. And if the decision makers like your concept, you can move forward with confidence and with some preliminary feedback. Getting team and executive feedback early boosts your efficiency and, quite frankly, work satisfaction.

I hope the above template, example, and explanation has shown why I believe the conceptual design template is an effective method for structuring early-stage design and innovation. It's also an effective method for sharing your concept and getting feedback from others on your team, decision makers in your organization, and even your target users.

What comes after the first conceptual design?

So now that you've seen what goes into a conceptual design and how it works, you may be wondering what comes next. After the first version of a conceptual design, you can build on what you've done to create expanded versions. And that's one of the things I like most about this method.

You can complete the first draft of a conceptual design in about three hours. After that you can stick with the framework of the conceptual design and expand. This format will serve you well deep into a project's life. In one project, my team expanded (and refined) our conceptual design for at least six months. At that point in the project many other parts of the organization were involved. They started creating their own documents (such as technical requirements or spreadsheets with revenue models), but the central artifact of the project was still in the conceptual design format. We eventually had about 70 pages of content. From that overblown conceptual design document we would select the pieces we needed for our audience and purpose. For example, when meeting with a potential strategic partner, we'd select certain slides. If we were meeting with technical people inside the company, we'd select other slides. No matter the audience or purpose, we almost always included user descriptions and storyboards as part of the mix.

As you start to use the conceptual design format you'll find it's both easy and powerful. A few words of warning: First, unless you have a compelling reason, don't change the order of the ideas in a conceptual design. I've created and evaluated over 300 conceptual designs. I've found that when people change the order of the ideas, they usually weaken their document. There's a reason these ideas come in this order. I've articulated some of them above. But some of the reasons are difficult to articulate. For the most part the order has to do with how to tell a story – what builds on what.

Next, depending on the breadth of your job, you may need to add slides to the conceptual design that deal with business or technical issues. This won't be true for all designers and innovators, but I've found that blue-sky ideas don't go very far in most companies without something more concrete behind them.

Another caution: Realize that when you present a conceptual design most people will assume you're much farther down the development path than you really are. The conceptual design framework creates the illusion of lots of work. That's one reason I like to include the time investment on the title page. People who hear your concept will have different questions and expectations for a project that's 180 hours invested as opposed to just 8 hours.

Finally, I want to ask for your help. I've been developing this conceptual design format for about seven years. When I find a good idea or see something new that works, I incorporate it. So this conceptual design format is actually the work of many smart people I've worked with or heard from over the years. Although it's a strong method and (I think) quite evolved, it's not perfect. As you use this method and find ways to improve it, I would invite you to share your innovations with me so I can update and refine the template that's freely available at bjfogg.info/cd.

By getting ongoing input and by sharing the conceptual design template widely, I believe we can increase the quality, efficiency, and enjoyment of our work as innovators and designers.