

**Designing for Interaction, Second Edition:
Creating Innovative Applications and Devices**
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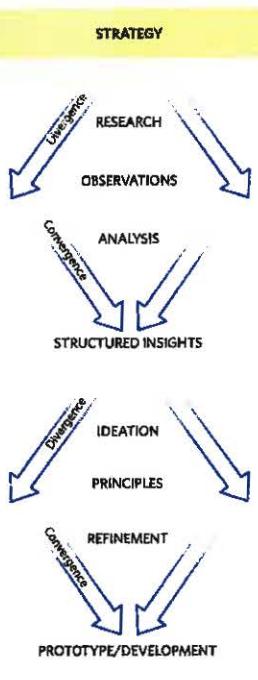
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Designing a product for everyone, everywhere, for all time is not realistic. Before you design anything, you need to determine what should be designed, and why. Just as importantly, you need to determine **what is *not* going to be designed**. You have to understand what the value of the proposed product is: **both for users and for the sponsoring organization**. And you have to figure out how this product will fit in—or, better yet, **redefine**—its **product category**, and how it will differentiate itself from other products on the market.

This is the essence of design strategy.

What Is Design Strategy?

At the beginning of a project, instead of saying, “Let’s design this new widget,” the first questions that should be asked are, “What should we be designing that will meet our organization’s needs and the needs of our customers?” and “How should that solution be manifest: as a widget or something else entirely?” This is what design strategy work helps determine.

NOTE Of course, for smaller projects, and especially those on existing projects, such as designing a wizard or adding a piece of functionality, a deep dive into strategy could be a waste of time. Strategy’s best application is for new products or existing products that are getting a complete redesign.

Design strategy is the product and project planning that takes place at the **beginning of the design process**. It is a combination of defining a vision for the end state of a project, and determining the tactics needed to execute on that vision. Design strategy is composed of several parts:

- ▶ **Framing the problem or opportunity to be addressed**
- ▶ **Determining key differentiators for the product to be designed**
- ▶ **Visualizing and selling the strategy to the organization**
- ▶ **Creating a product roadmap and a project plan to achieve the goals of the project**

Design strategy (along with design research, covered in Chapter 4) helps organizations determine what products to create over the short- and long-term, and it should be the first step in any design process. To begin a project without knowing what is being built and why is a recipe for serious difficulties deeper into the project. Strategy provides a framework for designers to justify the project to the business: why resources should be spent to design, produce, and market this product.

While many organizations still engage designers only after the strategy has been determined, it behooves designers to understand that strategy before beginning design work.

Strategy as a way of thinking has its roots in a 1980 book by Harvard Business School professor Michael Porter entitled *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. Porter said that design strategy doesn't mean **operational effectiveness**—being able to do what your competitor does **more effectively**—because eventually, this stops working. There is only so much efficiency you can get out of a system, and your competitors eventually figure out how to make their own operations as effective as yours. Instead, Porter says, **strategy is about being different from your competitors**: either performing different activities, or else performing similar activities differently. The purpose of strategy is to determine what *not* to do so that you prioritize ideas and can focus on setting your product apart.

NOTE One alternate view of strategy, which is seemingly practiced at organizations like Sony, Google, and Samsung, is to **simply execute on core competencies such as engineering, moving into different markets as they become known or popular without much regard for differentiation**.

Carving out a unique place in the market and tuning the organization (and the products it produces) to deliver products and services that fit that position gives a company a clear **competitive advantage** that is hard to replicate, and thus valuable.

Design Strategy and Business Strategy

A design strategy that doesn't work for the overall organization's strategy is like a bad organ transplant: the host body will reject it. Any design strategy for a **product (the product strategy)** has to **work with the organization's overall strategy to be successful**.

NOTE This is not to say that a good design strategy (and the resulting product) cannot change the overall strategy of a company: it certainly can. After the iPod, “Apple Computer” became simply “Apple” as it realized its future was also in consumer electronics.

When people speak of “strategy” within organizations, they can be talking about any one of these three things:

- ▶ **Corporate strategy.** Deals with how the organization is run: company structure, finances, and human resources. Corporate strategy also oversees how the other two strategy types are put into effect.
- ▶ **Operational strategy.** Looks at efficiency and effectiveness in processes. IT and (obviously) operations are in this category.
- ▶ **Business strategy.** Deals with generating new products and looking for new markets. Marketing, business analysis, and design are typically here.

Depending on the type of product being proposed, the product (and thus the strategy) could affect one or more of these. A new product may require different personnel, new IT infrastructure, and new marketing, for example. But product strategy almost always affects the last category. Thus, it behooves designers to have some knowledge of an organization's business strategy to make sure whatever will be designed fits into the big picture. A project that doesn't work with the business strategy will likely fail or at least not succeed as strongly as it could have, because they will be fighting the organization internally throughout their lifecycle.

Porter also defined the three types of generic business strategies. It's important to know which one the organization you are working for is pursuing, because it will affect the design decisions throughout the project:

- ▶ **Cost leadership strategy.** This strategy is all about making use of economies of scale to efficiently create basic, no-frills products that can be made at a low cost and widely sold. Dell and Southwest Airlines are examples of companies that mostly follow a cost leadership strategy.
- ▶ **Focus strategy.** This strategy is about effectively targeting niches, creating specialized products for a select few target markets. Medical device manufacturers and companies such as Leapfrog pursue a focus strategy.

- ▶ **Differentiation strategy.** This strategy is about creating products that are seen as unique and therefore a premium price can be attached to them. Apple and Bang & Olufsen are examples of companies that follow a differentiation strategy.

In the simplest terms, designers should understand how the organizations they work for make money, and how the organizations plan to increase their revenues in the future. Ultimately, this is the context in which design work is judged, at least internally. (Users have their own criteria, which we'll discuss in Chapters 4 and 8.)

Learning this overall business strategy is part of framing the problem to be addressed.

Brandon Schauer on Design Strategy



Brandon Schauer is an experience design director at San Francisco design firm Adaptive Path, where he speaks, writes, trains, and practices experience design as a differentiator for business strategy. Brandon holds a Master of Design from the Institute of Design and a MBA from the Stuart School of Business. Brandon is also a co-author of Subject to Change: Creating Great Products & Services for an Uncertain World.

Why should interaction designers care about business strategy?

The projects an interaction designer works on are determined by the business strategy. The ideas and designs generated by an interaction designer are supported and funded if they fit the business strategy.

Many designers now research and plan for the larger context of people's lives when creating interactions. Well, there's also the context of the business strategy that is just as critical to the success of their work; it too should be researched and planned for.

What do you see as the relationship between design strategy and business strategy?

General business strategy should inform what activities a business engages in and how it goes about those activities. IKEA invests time and money in creating explanatory catalogs,

Brandon Schauer on Design Strategy (continued)

signage, and other store displays. That's an activity they engage in so they don't have to provide more expensive customer service. It's a strategic tradeoff IKEA makes in their business strategy.



A good design strategy should connect the practice of design within an organization to that overall business strategy. When you look at the design of IKEA furniture, you see that it can be flat-packed in boxes, self-assembled by customers with minimal tools and instructions, and can be manufactured in mass quantities for a low cost. All of these furniture design decisions by the in-house design staff reinforce IKEA's overall strategy to provide low cost furniture for a broad market. Design strategy infuses the business strategy into the everyday design decisions.

What is the most crucial part of doing design strategy and why?

Focus, vision, customer value, and scope are all key elements of a good design strategy, but I believe the most crucial is your ability to communicate and enact your strategy. Otherwise, it's all just a bunch of hand-waving.

Luckily designers have strong visual communication skills to show what their strategy delivers to the business and the customer—this quarter, next quarter, and next year. However, designers need to work much harder at verbally explaining the value of that design strategy in terms that the rest of the organization understands.

Take the example of Sam Lucente, the VP of Design at HP. When CEO Mark Hurd was focused on operational efficiencies, Lucente didn't pitch the standardization of HP logos across all products as an improvement to the presence of the HP brand. Instead, he estimated that shipping products with a standard logo would save HP \$50 million of development and manufacturing costs. That got the CEO's attention.

What's the biggest mistake designers make when doing strategic work?

Designers assume that because they can't create a complex financial model that they shouldn't bother interacting with numbers at all. Wrong. It takes very little effort to find out what metrics a business runs on, and slightly more effort to figure out how your work affects those numbers. An estimate of the value of a new interaction is simply just another kind of a prototype to be created.

Brandon Schauer on Design Strategy (continued)

You've said designers should strive for "The Long Wow." What is that?

The Long Wow is a means to achieving long-term customer loyalty through systematically impressing your customers again and again. For most businesses, customer loyalty has become essential, yet these same businesses create artificial loyalty programs based on ID cards and memberships rather than delivering the great products and services that customers want in the first place.

I started using Google Maps because of the ease of dragging the map. But Google Maps didn't require me to sign-up or join as a member. I've kept using it because it's steadily impressed me with great new uses, from direction for mass transit to street views and traffic information.

Interaction designers can achieve a Long Wow by not just thinking about the current project, but demonstrating how the current project can be a platform for delivering the next "wow" moment for the customer. Such additional planning and foresight is the basis for a design strategy focused on great customer experiences.

Framing the Problem

There's an old joke among software developers. When something works in an unexpected but strangely effective way, the developers often kid, "Oh, that's not a bug. That's a feature." While this is usually only a joke, designers can use the same technique of reframing the problem when tackling their own projects. In fact, there's an old joke among designers: "It's not a problem. It's an opportunity."

Typically, before a designer gets involved in a project, a business encounters or discovers a problem or a perceived problem. A current product isn't selling or working well or is simply out of style—witness the launch of new mobile phones every six months. Or a competitor has launched a better product, as occurred in the mid 1990s as companies intensely vied to produce the best Internet browser. Or a new market has opened up and products need to be created for that market, which is what happened with Facebook widgets and iPhone applications. These "problems" become the basis for involving a designer.

The problem with problems, especially the problems that interaction designers tend to get involved with, is that they are often messy and ill-defined. Unless the problem is simple and narrow (like, say, users can't find the Submit button at the end of a form), **don't take any problem that you are given—or even one you've defined yourself—at face value. What seems at first glance to be simple often really isn't—and the reverse is rarely true.**

Consider the simple problem of an online form on which users seem to have trouble finding the Submit button at the form's end. The simple solution might be just to move the button to a better place or make the button more prominent through color, size, or shape. **But this issue could also be an indicator of a larger problem. Maybe the form is too long. Maybe users don't understand why they are filling out the form, and the problem isn't that they can't find the button, but that they abandon the form in the middle, not caring to finish it. Or maybe they are afraid to click the button because they don't know what will happen next. And so on. Simple problems can be indicators of larger ones.**

NOTE *That being said, while working, interaction designers shouldn't overly complicate things and should pick their battles. Sometimes a button problem is just a button problem. Not every project needs to be completely rethought and broken down. The teams that interaction designers work with would hate them if they constantly did that. But—and this will be a theme in this book—be deliberate in the choices you make. If making the button bigger will solve most of the problem, well then, make the button bigger.*

Indeed, the kinds of problems interaction designers are often involved in are those called **wicked problems**, a term coined in the 1973 by design theorist Horst Rittel.¹ **Wicked problems are situations that aren't fully understood and have fuzzy boundaries. They have lots of affected people (stakeholders) with a say in them; they have lots of constraints, and they have no clear solution.**

In order to attempt a design solution to the problem, designers, along with client stakeholders, first need to **frame the problem**. There needs to be some sort of **border around the project—a shared understanding of the issues involved—so that the problem can be worked on**. One of the worst things a

¹ See for instance "Dilemmas in a General Theory of Planning," Horst Rittel, Horst and Melvin Webber in Policy Sciences, Vol. 4

designer can do is solve the wrong problem. Designers can't just solve problems; they also have to **problem set**.

Problem setting is when designers, in the words of Donald Schön from *The Reflective Practitioner*, "name the things to which we will attend and frame the context in which we will attend to them." Problems and the projects that are created to deal with them aren't usually a given; they are human constructs around a messy situation. Thus, the first part of any design strategy work is to frame the situation, to put design into the problem and impose some sort of order onto it. By "framing and naming," designers want to both understand the situation and, eventually, to change it. When framing, designers have no idea what the implications of the new frame will be, just that within the frame, they have created a space in which they can use the design process to try to solve the problem.

For example, let's say a company's new mobile device isn't selling well. There could be any number of reasons for this: everything from global economic issues to surly salespeople. In order for the design process to really get started, **designers have to figure out where the problem actually is, frame it, and then apply their talents there—or not.**

Framing the problem means doing two things: **zooming out to establish a border around the problem, then zooming back in to determine the details of the parts.** In many ways, this is a microcosm of the design process as a whole: **use divergent thinking to explore possibilities and opportunities, then converge on tangible artifacts to define and refine a solution.**

A strategic framework for a problem could be any number of things: a metaphor for the problem space; a story that encompasses the various aspects of the problem; a creative brief that describes what is in and what's out of the project; a visualization; a product plan. **It's anything that helps communicate to the organization and the design team where the borders of the problem are and what the purpose of the project is.**

The first step of this process is to **gather information.** Designers need input and other **points of view** from clients, stakeholders, colleagues, teammates, and others who have maybe thought about this situation (or similar situations). Designers typically get this information from three places: **traditional research, the design brief, and stakeholder interviews.** (Designers can, of course, get input from users, too; see Chapter 4.)



Traditional Research

The best strategies start with a candid assessment of the organization, its resources, its customers, brand, and position in the market. Traditional research is a good place to begin this, and should be done before other kinds of strategic activities (such as stakeholder interviews).

It's almost silly to say, but a simple Internet search on the subject you are dealing with and the company you are working for can be extremely revealing, as is examining company reports, press releases, and documentation, as well as books, newspapers, and magazines. These are the sources of traditional research.

Unless specifically told not to, designers should feel free to consult outside sources as part of the information-gathering process. Thanks to a little thing called the Internet, we now have access to information quickly and easily from many different sources. Designers should make good use of it! Very few projects are in an area that no one has thought about before. Even a cursory search of the Internet, and especially of e-mail list archives, discussion boards, and technical and academic journals, will likely turn up information about the subject area, as well as information about the company, its market, and its competitors.

NOTE *Traditional research does not include patent research. Interaction designers are encouraged to avoid patent filings and articles about patents at all costs. The penalties for patent infringement are high, and will be higher (at least in the U.S.) if the designers knew about the patent beforehand. Let the lawyers handle patents. Ironically, not knowing about a patent is the best defense for patent infringement cases.*

As any doctoral candidate can attest, a person can spend a nearly infinite amount of time gathering information. It's important to focus this part of the process on gathering *germane* information that will eventually find its way into the solution. The goal is to gain general knowledge about the project's subject area (and perhaps related areas), and also deep knowledge about the particular problem that is being addressed.

Design Brief

The design brief is a document, usually from the client (or an internal business manager or unit hereafter referred to as a client), although increasingly it is being made by the design team. **The design brief should lay out the reasons for employing the designer (the problem) and often make suggestions for the solution as well.** The brief is an excellent starting point for gathering information. Briefs can contain such information as brand considerations, technical constraints, expected timetable and deliverables, detailed goals of the project, and contact information for major stakeholders.

Design briefs are becoming less and less common, so they can also be a deliverable that the designer generates as a result of the stakeholder interviews, traditional research, and competitive analysis. The brief then becomes a way of capturing and communicating what was learned during the initial information-gathering period of the project.

In a client-supplied brief, designers usually get some insight into what the client thinks will make a successful project. This likely won't be spelled out; it may just be a throwaway line like "We want to make the new application fresh" embedded within a 50-page document filled with complicated business and technical goals. But if the designer meets all those goals but creates a conservative design that doesn't address the client's desire for "freshness," the client will be unhappy.

The brief should be only a starting point in discussions about the project. Indeed, the brief could raise as many questions as it solves. What exactly does making the application "fresh" mean? That's where stakeholder interviews come in.

Stakeholder Interviews

Stakeholders are people who have a particular interest in, and/or influence on, the outcome of the project.

Stakeholder interviews (Figure 3.1) are usually one of the designer's first tasks on any project. The interviews are the client's chance to tell the designer why the client thinks that the project is needed, to reveal the client's frame around the project. As stated earlier in this chapter, these reasons may be mistaken, and the designer should feel free to challenge them. The problem may not be what the client thinks it is, and the designer will have to do her own problem setting.

Stakeholders



COURTESY ISTOCKPHOTO

Figure 3.1

If possible, conduct stakeholder interviews in-person and individually. Try to meet with as many influential and powerful people as you can.

Stakeholder interviews work best when they cast a wide net, so designers should take the time needed to do them well. The designer will want to interview not only those who are sponsoring the project (that is, putting up the money and resources), but also those in the organization who will be affected by the project. Often, people lower on the organization chart with direct access to customers such as salespeople have deeper insights into aspects of a project than those higher up. For example, consider a redesign of an application through which customers contact customer service. Although the project may be sponsored by the chief information officer and run by the director of customer service, the designer would be remiss if he or she didn't speak with the people who actually work with those contacts: the customer service representatives.

Interaction designers should not only ask the How and What questions, but also the Why questions. Why does this work this way? Why is it important to sell a million ball bearings a month? Why should this application be on a mobile phone? Why questions help designers avoid questions that don't provide much information, such as those that can be answered with a yes or no.

Here are some sample questions that could be asked in most stakeholder interviews:

- Who are you and what is your role in this organization?
- Why is this project important to you? To the organization?
- What would make a successful project?
- Has anyone ever tried to address this problem before?
- What doesn't this project cover?
- If we could only do one thing with this project, what would that be?
- How could this project affect your day-to-day life?
- Are there any issues about this project I should be aware of?
- What are the risks in doing this project? What could make it fail?
- What are your competitors doing in this space?
- Who else should I talk to about this project?

Stakeholder questions

Stakeholder interviews are the time for the client to tell the designer (or for the designer to probe about) the business goals of the project. Business goals can be anything from hard numbers ("We need to sell 5 million ball bearings a day") to acquiring new customers or entering new markets to soft, company-brand goals ("We need a more elegant interface"). But again, the designer needs to be careful! Look for the *unstated* goals of the project. Sometimes, organizations want to use projects for different ends, such as to merge two departments or add staff, and will use the design project as a means to do so. Solutions that run contrary to these unstated goals could be greeted coldly.

Stakeholder interviews also help designers understand the *constraints* of the project. No project is without some boundaries that for business, technical, or resource reasons cannot be crossed—at least not crossed easily. Constraints can be placed on a number of entities, such as marketing, accounting, management, IT, and of course, users. Sometimes constraints are as simple as the medium in which the project will be created ("We want a Web site" or "We'd like to make a new mobile device"). Sometimes constraints are a lot more complex ("We've already sold advertising for each Web page, so you need to design space for that" or "This robot can make only left turns right now and occasionally explodes"). Interaction designers need to capture and document constraints throughout the course of the project, in everything from stakeholder interview notes to wireframes. These constraints will shape the design decisions that are made later in the process (see Chapter 7).

Con-
straints

Metrics and Return on Investment (ROI)

By learning about the business goals of the project, the designer should also learn about the overall business strategy as well as what the organization will consider a successful project at the end ("We sold 10 million ball bearings today!"). These measures are referred to as *success metrics*. Success metrics let you take an objective look at a project's result to see what progress has been made toward its goal. Success metrics for the project should ideally be tied to the overall success metrics of the organization as a whole (increased market share, higher profits, and so on).

In short, get some basic numbers that can be used as a baseline to compare against once the project is over.

Track
progress

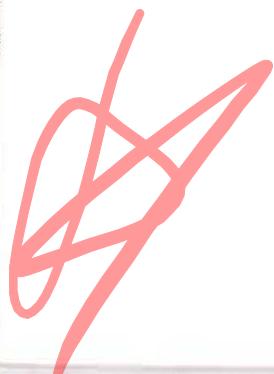
Designers have a selfish reason to find out the impact of their work on the organization. **Demonstrating value**—particularly monetary value via affecting the bottom line—to an organization proves that design isn't what is known as a **cost center**. Cost centers such as human resources or research and development only add value to the company indirectly, and these are often the parts of the organization that are viewed as the least valuable and most easily disbanded or downsized when times get tough.

Evaluating success, of course, is much easier for projects that have hard-numbers expectations than for those with softer goals. It's sometimes not easy to measure what businesses call return on investment (ROI) for interaction design. If an organization expects a design to meet an ROI goal, the designer needs to be sure some mechanism for measuring success is in place before the design work begins. Designers should want some sort of baseline criteria culled from the existing situation that they can then use to measure the new design against. For example, before beginning the redesign of a Web site registration process, the designer should get some quantitative data: numbers, in other words. It takes six minutes to register. On an ease-of-use scale of 1 to 5, with 5 being excellent, users currently rate registration as a 2. According to server logs, half the people stop registering after the second page. With this baseline data in hand, at the end of the project, the designer can measure the new solution and compare the new data to the old and also to the goals of the project. If the designer has done the job well, the numbers will likely show it.

Competitive Analysis

In order to be taken seriously, interaction designers have to understand what the current landscape of competitors is. It is important to understand **market factors**: overall trends in the market, what industry leaders are doing, what products are popular and/or selling well (and why), and the latest technology. This is definitely not to say that designers should slavishly follow the market or trends, but rather that they should know about what is currently available so that they don't inadvertently replicate what is already out there, and thus create little or no value for the organization they are working for.

The other reason to do competitive analysis is simple: to find holes in the market and unsolved problems that a new product could address and provide competitive advantage.



When doing competitive analysis, always look for unconventional competitors as well as the ones that directly compete for market share. For example, traditionally the competitors of news organizations were other news organizations. Now they compete with blogs, photo-sharing Web sites, and news aggregators as well. A useful tool to find these competitors is to ask, “What would customers do if all the traditional competitors went away? What would they do instead?”

Once you have your list of competitors (and stakeholder interviews may turn up more), the next task is to figure out the criteria by which you will be comparing and contrasting them. These can be broad (brand, tone, users) or detailed (analysis/presence of a particular feature).

The data you collect when doing a competitive analysis (Table 3.1) can be anything from a simple yes/no (“Does Product X have search?”); multiple choice (“Type of search: Site only”); a scale (“How well does search work on a scale of 1 to 10?”); or a description (“Search returns 10 results per screen”).

Table 3.1 Sample Competitive Analysis

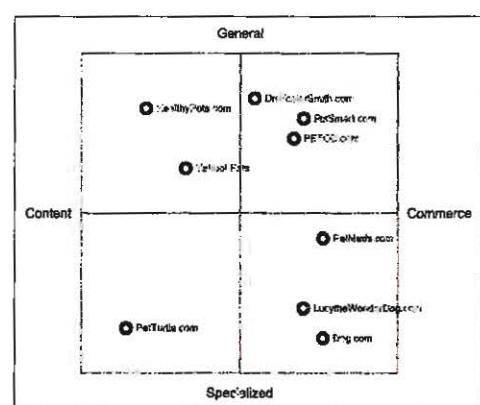
Competitor	Touchscreen?	Years on Market	Brand Promise	Customers
Competitor 1	No	7	Ease-of-use, simplicity	Beginners
Competitor 2	Yes	1	Powerful, robust	Professionals
Competitor 3	No	2	Sophisticated	Professionals

Aside from this more raw, at-a-glance view of the data, overviews and conclusions drawn from a competitive analysis can be a compelling means of showing market opportunities (Figure 3.2) and promoting the project internally (see “Visualization and Visioning” later in the chapter).

By the end of the framing process, you should know a few things: the boundaries and scope of the project; what the internal context of the project is (that is, why the business wants to do the project); the external context (the marketplace and competitors); and

Figure 3.2

In this two-by-two, different pet-related Web sites are plotted on a simple graph. The axes of the graph represent the scope of the content (commercial versus advice/information) and specialization (number of pet types supported).



COURTESY D. N. BROWN/FROM COMMUNICATIVE DESIGN

some important metrics around the project. Now it is time to determine how you can position the product into this environment and make it successful for the organization and valuable (that is, worth paying for) for its users.

Determining Differentiators

A major step in the design strategy process is determining what the **value proposition** is. The value proposition is what customers will get in return for buying or using this product over another, similar product. If you are not adding value for a user, you are simply making the product different for the sake of being different, and this is not good design.

Donald Reinertsen in *Managing the Design Factory* challenges designers to define the value proposition in 25 words or less. "Most successful products have a clear and simple value proposition. Buyers typically make their choice between competing products on the basis of three or four factors," Reinertsen says.

Traditionally, value propositions have focused on two things: **cost and quality**. Either a product is cheaper than its competitor (its **price point** is lower), or else it is better quality. (This can be a false dichotomy, and designers should almost always focus on the highest possible quality at the lowest possible cost—or at least the lowest possible cost to **manufacture**.)

Increasingly, design has become part of the quality equation, especially around how devices work. A 2006 study by Elke den Ouden found that most electronic products that were returned to the store weren't broken, but instead worked exactly as designed; they were returned because customers expected them to do more than they did or they just didn't like the design, or they simply couldn't figure them out.² Interaction designers can provide business and customer value simply by making products work better (and thus decreasing returns and/or abandonment).

But even more than that, the overall experience of using the product has become a major differentiator, and interaction design has a significant part to play in that. A **differentiator**—something that sets a product apart from its competitors—has too frequently been features. "Our Web site is not just another social

² See an analysis of her findings at "Soft Reliability: a 'New' Angle on Quality Management (or Usability?)" at www.uselog.com/2008/01/soft-reliability-angle-on-quality.html

network; we also have e-mail." But features, unless protected by patents (and even then), are eventually replicated. And while features are certainly important, designers should strive to find long-term differentiation. This is a much harder proposition, and designers should look for those opportunities throughout the design process, particularly around areas of behavior.

Interaction designers can create differentiators both in how the product behaves (see Chapters 7 and 8), and also in the behaviors it engenders (Figure 3.3). Let's look at video cameras, for example. Most video cameras focused on the behavior of shooting the video. Flip Video, instead of competing against Sony, Canon, JVC, and so on, focused on the behavior of transferring video off the camera onto a computer, and thus gained a competitive advantage.

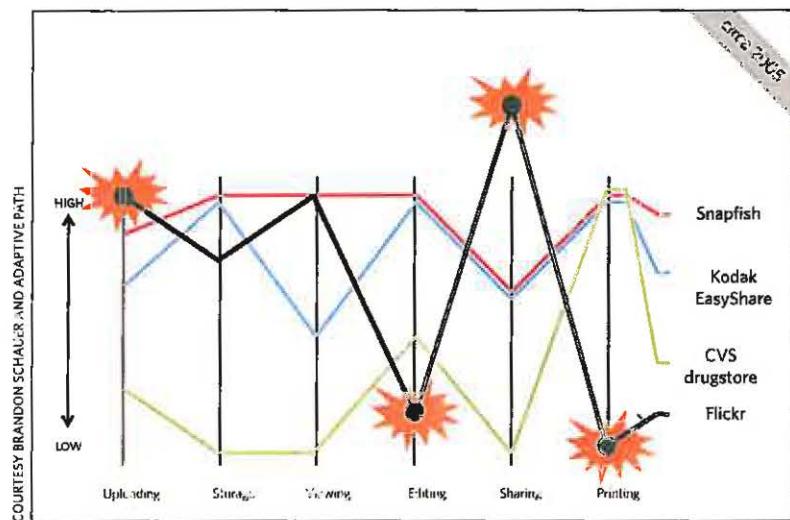


Figure 3.3
A chart comparing the differentiation of photography Web site Flickr (circa 2005) with its then-rivals. Inspired by *Blue Ocean Strategy* by W. Chan Kim and Renée Mauborgne.

Aside from product behavior, there are some known ways of differentiating your product:

- ▶ **Specialization.** Target your product to a very specialized market that is currently underserved. Kayak.com differentiates from Google simply by focusing on one area (travel).

- **Generalize.** The opposite of specialization is to broaden the market by taking what would otherwise be a specialized product and designing it for a wider audience. A classic example of this is rolling luggage, which was originally designed for flight crews.
- **Localize or change context.** A product that works well in one context could be redesigned to work well in another context. Touchscreen kiosks were in use at point-of-sale locations for years before airlines started to use them for passenger check-in.

Any differentiators should be checked against the value proposition. Otherwise, you are just making the product different to be different, and that isn't typically a good design practice. A differentiator that doesn't support the reasons the customer would buy or use the product will just lead to a confused or, at best, a shallowly-differentiated product. For example, most people enjoy music, but every product doesn't need a music player incorporated into it. **Features added without an understanding of the real value proposition don't add value; in fact, they do the opposite by confusing the purpose of the product, which often translates into an overly-confusing interface and form.**

Two exercises, which can be done alone or as a group, that have proved helpful in determining the value proposition and key differentiators are the **elevator pitch** and the **advertisement**. The elevator pitch just formalizes Reinertsen's challenge of "25 words or less" into an exercise to do just that. Describe what you want to design so that you can explain what it is, what makes it unique, and why someone would use it instead of something else. It should be able to be spoken in less than 30 seconds and understandable to someone who isn't involved in the project. Similarly, the advertisement exercise is one where the packaging and advertising for the finished product are imagined and created. The ads can be anything from online banner ads to printed pieces to mock TV commercials. Both of these exercises are not only helpful in defining the value proposition and differentiators, but they can also be useful tools for helping sell the project internally.

Fighting Feature-itis

People love features. We enjoy comparing products side-by-side and choosing the one with the most features. We figure, logically, that more features for the same money is a better value. Companies love features, too. It gives them something to easily market and talk about. It also allows them to simply replicate what their competitors are doing without having to come up with real differentiators. **But features, as noted before, are a poor long-term strategy because they are eventually replicated.** And more features does not necessarily make a better product; in fact, it can make for a less usable, more confused one that, instead of doing one thing well, does many things poorly.

An article by James Surowiecki³ points out the feature paradox: “Although consumers find overloaded gadgets unmanageable, they also find them attractive. It turns out that when we look at a new product in a store we tend to think that the **more features there are, the better. It's only once we get the product home and try to use it that we realize the virtues of simplicity.**”

Don Norman’s advice⁴ is this: “**People are not willing to pay for a system that looks simpler because it looks less capable. Make the actual complexity low, the real simplicity high. That's an exciting design challenge: make it look powerful while also making it easy to use.**”

But like tic-tac-toe, the only real way to win the features game is to not play it. People want to feel that they are getting something—some value—for their money. This is what the value proposition is all about. In lieu of any other feeling—desire, joy, playfulness, luxury, and so on—people will turn to power, possibly out of fear. (“It’s ugly as hell but at least this thing will work. I hope.”) The feature list makes them—us—feel more comfortable with our choice.

The product strategy should instead focus on the story: how the product is not only what a set of users need, but also what they want to buy because it fits an empty space in the market—or creates a whole new market altogether. The features are there to support the story, not drive it.

³ “Feature Presentation” in *The New Yorker*, May 28, 2007. Online at www.newyorker.com/talk/financial/2007/05/28/070528ta_talk_surowiecki

⁴ In his article “Simplicity is Highly Overrated.” Found online at www.jnd.org/dn.mss/simplicity_is_highly.html

Case Study: Wii

The Company

Nintendo, one of the world's largest video game companies.

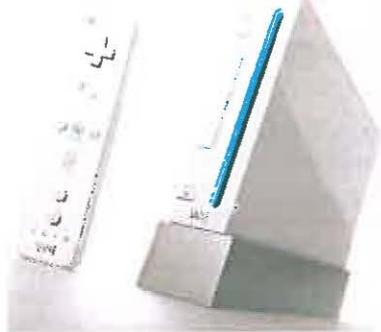
The Problem

In the early 2000s, Nintendo faced a decision. Its high-end gaming console at the time, the Nintendo 64, was aging. It had been released in 1996, and Nintendo was watching its market share erode thanks to Sony's PlayStation and a new competitor in the space, Microsoft, with its Xbox console. In fact, in 2002, Microsoft pushed Nintendo down to third place in consoles sold in North America. Nintendo had to determine how it was going to compete in this increasingly challenging market.

The Process

Nintendo looked at the competitive landscape and determined that to challenge Xbox and PlayStation directly was a losing proposition. Those two gaming platforms were going head-to-head, feature-to-feature in the same market space, after the same audience. Instead, Nintendo focused their efforts on developing a product that would be played by those who didn't consider themselves "gamers" a market that Xbox and PlayStation had basically given up on. Its differentiator would be how its games would be played, with gesture-based controls.

The Solution



By focusing on the behavior the Wii engenders (playing a game in space), Nintendo opened up an entirely new market for gaming, and redefined the category in which it would have likely continued to lose ground had it simply released another console to compete directly with PlayStation and Xbox. While Nintendo still focused on hardware, it offered a strong value proposition by having a unique way of playing digital games that has been embraced by groups from the elderly (who hold Wii bowling tournaments) to small children, audiences who would never think to buy an Xbox or PlayStation.

The Wii has been an unqualified smash success and has become a worldwide phenomenon, winning countless awards and making billions of dollars in sales. In the first half of 2007 alone, the Wii sold more units in the United States than the Xbox 360 and PlayStation 3 combined, according to the NPD Group. In many countries, the Wii is now the top-selling game console. Sales are expected to surpass 50 million units sold in 2009, according to Nintendo, and demand, three years after its launch, is still incredibly high.

Pricing

The sister of features is pricing. At some point in the strategy process, someone is going to have to determine the **revenue model** for the product. Is it given away free? Sold as a subscription? A luxury item? A bargain item? Supported by advertising?

The **price point** is a significant piece of information, because it determines a lot of the decisions to be made during the design process and often during resourcing as well. There is often a significant difference—in both materials and the time allotted to design it—between a high-end, specialized product and a bargain, mass-market one.

How pricing is determined is a bit of a black art. Certainly, what competitors charge for a similar product will be a factor, but there are many other considerations as well. The **profit margin** has to be determined: how much profit does the company want versus the cost to design, manufacture, market, and support this product. Too much of a markup on a product and it could seem overpriced; too little and the product may not be worth creating.

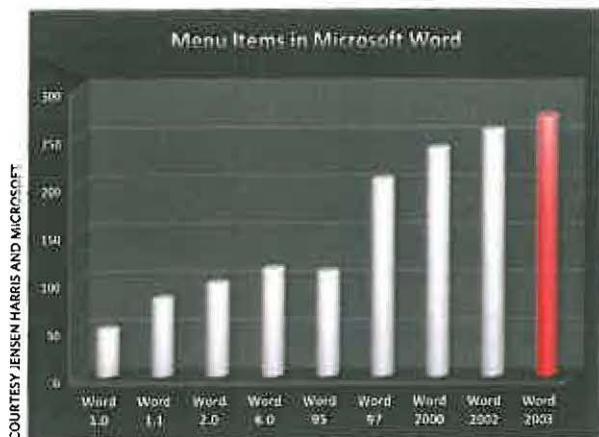
Complicating this, some companies rely on volume of sales with low profit margins to increase their revenue (the cost leadership strategy described earlier), while some sell only a few items at high profit margins (the differentiation strategy). And increasingly, the products themselves are sold at a loss, with the services they hook into making up the difference (common in mobile phones, for example).

Designers may or may not have a say in pricing, but at a minimum they should be aware of the price point before embarking on the remainder of the design process.

Visualization and Visioning

Once you have the value proposition and the differentiators, it's time to start figuring out what the product might be like; to create a theoretical "shadow" product that embodies these characteristics. This is where visualization and visioning come into play.

One place where projects can get mired is in the strategy work. While it can be somewhat easy to find differentiators and determine the value proposition, it can be difficult to move past that into getting the go-ahead from

**Figure 3.4**

Graphs like this one helped convince Microsoft management of the need for a radical overhaul of its Office suite (see the Case Study in Chapter 1).

stakeholders to create an actual project. This is where the designers' visualization (and persuasion) tools come into play. **Using tools of communication design to visualize aspects of the design strategy (Figure 3.4) can motivate the organization into action.**

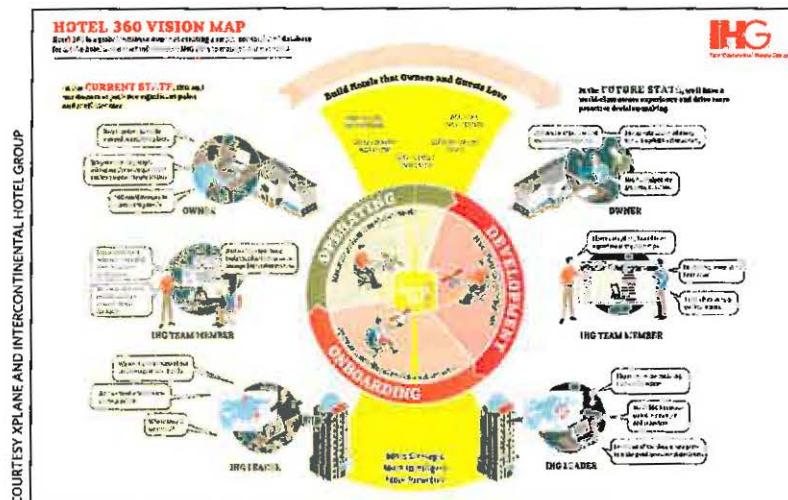
Designers are capable of making the abstract into something tangible, and this is a skill that is used throughout the design process (see for example Chapter 5 on modeling research data). During design strategy, visualizations of the

strategy and proposed project (Figure 3.5) can make for powerful tools of persuasion for the company to go ahead with the proposed project and to assign it enough resources (time, budget, and labor) to make it successful.

Visioning is where the creative synthesis of all the ideas that have accumulated through problem setting, stakeholder interviews, competitive analysis, and differentiation are given form. This is where parts of strategy can be articulated: success metrics, target market, value proposition, and differentiators. This is where you lay out what the product you are about to design will be.

What you absolutely do not want to do is only present what is already known. **There is little to no value in presenting data without some analysis of it, unless the organization is chaotic and needs to simply know what its own stakeholders said.** But it is in the consolidation, analysis, and visualization of the collected information that designers demonstrate their value in strategy work.

In visioning, it's important to indicate how the organization will know if the project is successful. **Visioning is also a good time to indicate market segmentation.** That is, who are we targeting this product towards? Who are the expected customers and how many of them are there? What is their behavior, and how does it intersect with the proposed product? This information could be revised heavily after doing research (see Chapter 4), but knowing the likely customer base gives something to aim toward in research planning.

**Figure 3.5**

Hotel 360 is a common database and series of applications that provided one view of the data across the enterprise, replacing dozens of disconnected databases and applications that didn't talk to one another, causing great pain for owners and employees alike. This project helped IHG visualize the pains that existed in the current state, and the benefits of Hotel 360 in the future state.

Visualizations can take many different forms: from charts and graphs to storyboards to posters and presentations. The form of the visualization should be determined by the organization. That is, what does the organization best respond to? How do people in the organization communicate ideas? Using a familiar format to communicate an idea may help it be accepted. Then again, designers may want to avoid formats like spreadsheets and Word documents that are too easily ignored because they are so familiar. An unusual form can make a powerful statement by drawing attention and interest.

Vision Prototypes

One tool for visioning is the **vision prototype**. Vision prototypes are an imagination of what the final, polished design might look like (Figure 3.6). A faux screenshot, a CAD rendering, a movie or animation, or some sort of photorealistic image are usually what vision prototypes are. The purpose of a vision prototype is to make tangible what the end result might be and thus get stakeholder enthusiasm and organizational resources to start the design process.



Figure 3.6

A vision prototype created during the strategy phase for Soundflavor's desktop application. Although the application changed considerably, the final form and feature set were highly influenced by this image.

Vision prototypes can be dangerous tools, however. You are showing what looks like a final design without going through any of the work to actually make the final design. Stakeholders could latch on to what is produced and expect that it *is* the final design. Radical changes (which are likely) in the design that occur over the course of the design process will need to be

explained and justified as to why it is different from what was shown earlier in the process.

Project Planning and Roadmapping

Now that you understand the business objectives and environment, have defined the differentiators and value proposition, and envisioned the end state to get the stakeholders aligned, it's time to become tactical and figure out how to get the product made.

Almost every project is constrained by three things: **time, budget, and manpower**. Once a strategy is agreed upon, a project plan should be created (or at least reviewed) to more accurately determine how to allocate these resources appropriately.

Start by setting an **end date**. This also means finding out or determining the **market window**, or an estimation of how long there is before another competitor moves into the space, or the opportunity no longer exists because of other (economic/social/technological) forces. Once you have the **end date**, work backwards from there, blocking out time in chunks for the various portions of the design process: **research and analysis, ideation, refinement, and prototyping**. If you have a very limited amount of time, some of these steps will be severely truncated, if not eliminated from the process altogether. Some tips for allocating resources:

- ▶ If "the user" or "the customer" is ill-defined or being used as a strawman to justify any decision (especially conflicting decisions), you'll want to spend time to research user behavior (Chapter 4) to create personas (Chapter 5).
- ▶ If you are working in a different culture or context, or in an unfamiliar subject area, research and testing (Chapter 8) are practically necessities.

tips for allocating
resources

- If the business logic or constraints are challenging, leave time for use cases, functional specifications, and logic flows (Chapter 7).
- If the activity to be designed is complex and has multiple stages, leave extra time for alignment diagrams (Chapter 5), and task flows, scenarios, and storyboards (Chapter 7).
- If you are working on a product that combines hardware and software, build in integration time and checkpoints throughout ideation, refinement, and prototyping (Chapters 6–8).
- While it is difficult to determine at this point, if you suspect your product will have many different states or screens, leave extra time during refinement for storyboards and wireframes (Chapter 7).
- If you are working with new technology or on an unfamiliar platform, leave extra time for development and prototyping (Chapter 8).

The project plan should be created (possibly in a program like Excel or Microsoft Project) and posted somewhere where the team can see it (either physically or online). Key dates and associated deliverables should be made known and agreed to by the team and any essential stakeholders. A project plan could also call out things like cost, duration of each phase, dependencies, and feasibility of success.

It's important to note that the project plan will definitely change as the project goes on and more information about the product, its users, and the constraints are uncovered. The project plan should be considered a living document, although in many cases there is definitely a hard, fixed end date that cannot be changed.

Product Roadmap

Products have a lifecycle, and it is good to plot that out, as it might be unlikely to get every feature into an initial product release. Your product strategy is your opportunity to plan for the future, to create a **product roadmap**. A **product roadmap** is a document that outlines the evolution of a product over time. It details the set of features/technology/platforms/hardware upgrades that will be created or added over time.

For example, a digital camera might launch with a small set of features and no accessories. A second project creates accessories. A third project adds features. A fourth project designs the second generation of the camera with some accessories built in and better hardware. And so on.

Creating a product roadmap allows for organizations to smartly allocate resources to projects and to establish a long-term vision for a product. It can also help organizations to not try to do too much in a single product launch, which can cause the project never to launch.⁵ They are also a good place to link back to the overall business strategy, to attach metrics and revenue targets to specific releases.

Summary

As Buckminster Fuller noted, “**You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete.**” This is what the best strategies do: they create new demand and open up new spaces for products to live.

We now turn our attention to understanding the people who will use the products interaction designers create, and the contexts they will use them in.

For Further Reading

Blue Ocean Strategy: How to Create Uncontested Market Space and Make the Competition Irrelevant, W. Chan Kim and Renée Mauborgne

Subject To Change: Creating Great Products & Services for an Uncertain World, Peter Merholz, Todd Wilkens, Brandon Schauer, and David Verba

Building Design Strategy: Using Design to Achieve Key Business Objectives, Thomas Lockwood and Thomas Walton (eds.)

Creating Breakthrough Products: Innovation from Product Planning to Program Approval, Jonathan Cagan and Craig M. Vogel

Seeing Differently: Insights on Innovation, John Seely Brown (ed.)

Competitive Strategy: Techniques for Analyzing Industries and Competitors, Michael E. Porter

Managing the Design Factory, Donald G. Reinertsen

The Reflective Practitioner: How Professionals Think in Action, Donald A. Schön

Zag: The Number One Strategy of High-Performance Brands, Marty Neumeier

⁵ See, for instance, the infamous Chandler product, detailed in the book *Dreaming in Code* by Scott Rosenberg