Leading with Vision: The Design of New Ventures

by Andrew Hargadon

Design is now readily acknowledged as essential to the enterprise. Andrew Hargadon argues, however, that designers must go beyond the making of individual products and brands to cut across the traditional boundaries within firms to create innovative business ventures. Advocating a new profile of design leadership, Hargadon explains how design principles and practices are uniquely suited to this exciting, multidimensional task.

It would be a cliché to say that the design profession stands at a crossroads. Instead, let's say that it stands at the sliding doors of Walmart, not sure whether to go in or walk on by. Today, it seems that few businesses can afford to avoid Walmart and fewer can afford not to—you're damned if you do and damned if you don't.

What this demonstrates is that 25 years worth of business revolutions—in manufacturing, globalization, distribution, outsourcing, electronic commerce, and retail—are finally catching up to the design profession. For a while, these revolutions created opportunities. The ability to make, ship, and sell better products faster *and* cheaper not only meant more design work, it also made design a central weapon in the corporate arsenal for fending off the same flood of cheaper goods.

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As design becomes de rigueur, however, it creates a choice for individual designers: enjoy their long-overdue role as "valued contributors" or assume a larger responsibility for leading firms. The choice offers two (only slightly exaggerated) scenarios for the future of the profession:

The Design Elite. Because anyone can now develop, manufacture, distribute, and sell new products within months, design has become the last differentiating advantage available to firms, and designers have become the newest members of the corporate inner circle.

Sitting at the right hand of the CEO, they participate in discussions of corporate strategy, and the business of design demands priority over the concerns of engineering, manufacturing, accounting, or finance.

The Design Leaders. Because anyone can quickly bring new products to market, the traditional value of design in corporate strategy has eroded. Cheaper, private-label products now easily replicate the designs of established brands, and smaller, more agile companies target the higher end of larger markets. In response, designers have moved into leadership roles in organizations, their skills increasingly relevant to creating ventures that combine product, content, and distribution in ways that provide sustainable advantages.

No amount of design can save a bad business model—not even if it's for a better mousetrap.

While some version of both scenarios will no doubt take place, this article argues that the second one is better for the profession. Rather than bask in belated glory, designers need to take on greater responsibilities for leading their organizations in a rapidly changing marketplace. This article describes how the fundamental principles and practices of design provide the skills for navigating this change. Leading, however, means letting go of long-held perspectives on the role of designers and the boundaries of design.[1]

It's not about the box

Build a better mousetrap and the world will beat a path to your door.

Ralph Waldo Emerson's famous advice has guided more than a few new ventures to their doom. Take the Segway Human Transporter. Introduced in 2001, it was to be to the car what the car was to the horse and buggy. The $100 million spent on design and development won the gold medal for the transportation category in *BusinessWeek's* 2002 Annual Design Awards and produced such technical achievements as a gearbox tuned to hum—in harmony—at the frequencies of musical octaves. And yet while they expected to sell roughly 600,000 units in the first year, based on recently released numbers, the result was closer to 6,000.

Emerson's advice is wrong, because no amount of design can save a bad business model—not even if it's for a better mousetrap. Since the US patent office opened in 1838, 4,400 patents have been issued for mousetraps and roughly 40 new patents are issued each year. Yet only two dozen have made any money, and only two dominant designs exist: the spring trap and the sticky pot. The spring trap, still the most dominant, was developed in the 1890s; the sticky pot, in the 1970s. What does this mean? It means, as Michael Eckersley notes, there is a difference between designing the thing right and designing the right thing.[2]

The iPod has generated rave reviews—and to many, confirms the belief that good design creates good business. But is it the box? The iPod is elegant, but the design of the entire venture is what truly differentiates it in an already crowded market. Behind its clean form and ease-of-use lies a network that connects hardware (Mac or PC), software (iTunes), record labels, and even artists in ways that no other competitor has matched.

The iPod's inspiration lay first in seeing the value of this new network, and then in designing a venture that would bring it all together. While each piece of the overall network adds value, together they create an offering that defies replication, let alone commoditization. Companies will keep knocking off bits of the system—online music stores, digital players, jukebox software—but few will be able to recreate it entirely. Sony, with its Walkman division, PC group, record labels, and vast distribution had the best chance but, to date, has failed. In fact, based on its inability to piece together its own network in

1. Already an alternative is brewing—business managers are increasingly recognizing the limitations of corporate strategy and learning, in essence, how to design. See, for example, Jeanne Liedtka's "In Defense of Strategy as Design," *California Management Review*, Spring 2000, and Roger Martin's "The Design of Business," *Rotman Magazine*, Winter 2004.

2. Michael Eckersley, "Integrated Design Strategy: Management Challenges and Opportunities," *Design Management Journal*, Winter 2003.

a new way, Sony has just created a new division called Connect Co., which is dedicated solely to bridging its product and media businesses.

New products and services will, like the iPod, increasingly draw their value—and sustainable competitive advantage—from the networks they bring together. As a result, the design process will have to include not only the box, but the entire venture: what it looks like, what value it brings to each network partner, and how it will evolve. Designers will have to become proficient at aligning the needs and capabilities of markets, technologies, *and* businesses—at designing ventures that are as appealing to potential partners as they are to the end user (see figure 1). As Tim Brown, CEO of IDEO, recently said, "If designers can get comfortable with the idea that they are 'designing business' on different levels, then they will do a better job of bringing value to businesses."[3]

Designing New Ventures

While the needs of the end user are still important, building an entire network requires designing for more than just traditional users. Success depends as much, if not more, on how design addresses the needs of multiple users: investors, suppliers, content-providers, distributors, and others. And the more these new ventures cut across traditional boundaries in organizations, the more important it will be to design ventures that reward, rather than demand, collaboration.

While the role of design can be seen in modern attempts to introduce networked ventures, its role is perhaps clearest in one of our most iconic innovations: Thomas Edison's system of electric lighting. Despite the fact that others had already developed (and patented) versions of the incandescent bulb, and despite the presence of arc-lighting and other systems of electric lighting, we credit Edison with introducing the modern electric age. Why? Because Edison succeeded in turning an emerging technology into a widely adopted system that displaced the existing gas lighting industry. Yet he did so in surprising ways.

Figure 1. In the new networked venture, designers will need to align the needs and resources of multiple technologies, markets, and businesses.

Edison the visionary saw a world powered by electricity:

> *The same wire that brings you light will also bring power and heat—with the power you can run an elevator, a sewing machine, or any other mechanical contrivance, and by means of heat you may cook your food.*[4]

But rather than devote his energies to building a better mousetrap, Edison went to great lengths to embed his innovation within—and thus exploit—the existing commercial, social, and political networks: "To effect exact imitation of all done by gas so as to replace lighting by gas with lighting by electricity...not to make a large light or a blinding light but a small light having the mildness of gas." Edison the pragmatist designed, literally and figuratively, a networked venture that aligned the existing technical, market, and business realities facing the emerging technology.

To do so, Edison went to great lengths to fit the new technology as cleanly as possible into the existing consumer behaviors and market structures surrounding the old technology. He introduced a 13-watt bulb, despite having a 40-watt bulb burning in his lab, because gas lamps burned at that brightness. Although the business he initially developed to sell isolated electric systems (and DC electricity) was at least initially profitable, he sidestepped that in favor of the type of central generating plant that would be familiar to clients of the gas industry. He buried his mains underground, despite lacking adequate insulation; he charged by meters despite lacking a meter for the first six months (almost

3. Karen Christensen, "IDEO's design mindset," *Rotman Management*, Winter 2004, p. 22.

4. Michael Eckersley, "Integrated Design Strategy: Management Challenges and Opportunities," *Design Management Journal*, Winter 2003.

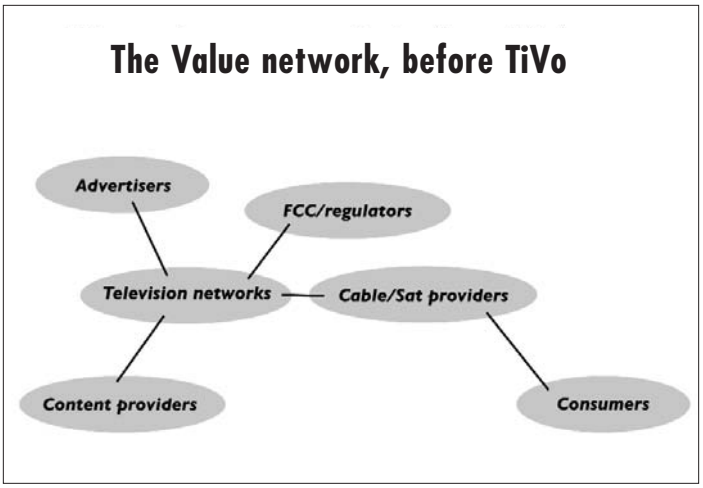
going broke in the process) and, for 10 years, used a meter that froze often in winter—all in an effort to exploit the existing understanding of the market (interestingly, when gas companies first displaced candle and oil lamps, they billed customers by the lamp—not by the gas used—to replicate the incumbent technology).

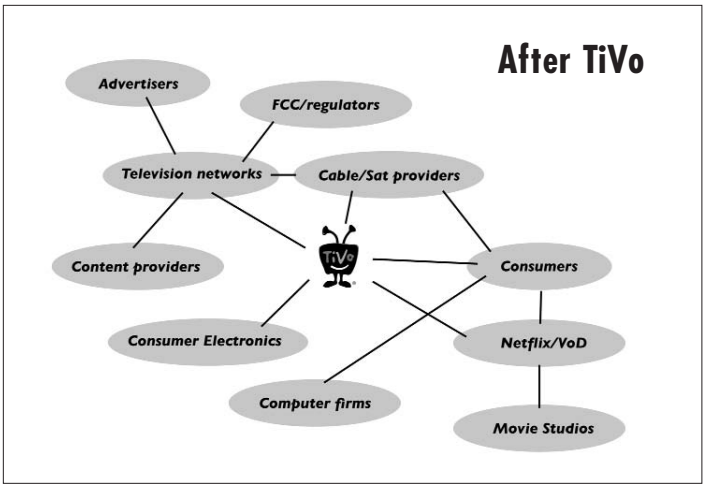
But Edison's design choices addressed more than just the users. To satisfy municipal regulators, he incorporated under gas statutes, which allowed him to dig in the city streets. To weaken the powerful resistance of the established gas monopolies, he courted gas company investors like J.P. Morgan. And to rapidly grow his electric utility model beyond New York City, he chose to sell franchises for his system. This reduced the need to centrally finance growth at a time when competitors were rapidly entering the market. It also ensured local ownership (at least 50 percent of each franchise had to be locally owned) and hence the local political and commercial connections that would make (or break) each local venture.

The question of whether the displacement of gas lighting by electric lighting was inevitable can be debated on technical or economic merits, but the fact is, there were electric lights burning 40 years before Edison began work on his particular system. And in 1882, when the famous Pearl Street Station first opened, the streets of New York (and soon after, the Brooklyn Bridge) were already lit by arc lights. The revolution may have been inevitable, but it was also awaiting the combination of existing elements—and the design—that would enable the public, regulators, investors, franchisees, and others to easily embrace the new technology.

Consider the design of another revolutionary venture, one that is unfolding right now: TiVo. In 1999, TiVo introduced the digital video recorder. This technology marries components and concepts from the personal computer and the videocassette recorder (VCR) and enables users to easily program, record, pause, and replay television programs in digital format. TiVo also offers a subscriber service to download local television schedules that users can peruse online, selecting particular shows to record once or each time they appear. This service links each TiVo box to a central database that is already evolving to provide "showcases" of particular networks or movie previews. Further, TiVo has formed alliances with Netflix and others to offer downloadable movies and other content in ways that more resemble the Internet than the television. Finally, TiVo boxes track customers' viewing patterns, data that will allow TiVo to offer advertisements and other content customized to particular viewers' interests—again more like the activities one might see at Amazon.com.

So what is TiVo? To many, TiVo is the box. But as a box, it faces a potentially fatal onslaught of competition from the cable companies, which have easily replicated the technology in their own digital set-top boxes. Instead, TiVo's future hinges on its ability to shift the design of its venture far beyond the box—in ways that cannot be easily replicated by existing firms. In short, TiVo must create value through the design of the network it brings together—as Jim Barton, one of





Figures 2 and 3. Designing networked ventures will mean visualizing the opportunities in combining previously disconnected partners, and accounting for the needs and resources of each.

the co-founders of TiVo, saw early on: "We'll know we've succeeded when the TiVo box vanishes."[5]

The *value network* that surrounds TiVo offers a good chance to see how design can play a more strategic role in crafting such new ventures. Figure 2 shows a rough map of the value network before TiVo; figure 3 shows how TiVo can redraw this map—creating a new network that the existing players cannot easily replicate. Envisioning these changes requires a deep understanding of the technical, market, and business context of each player in the potential network, and the ability to synthesize and deliver a solution that best aligns their diverse needs and resources.

For example, because these new digital recorders require the cooperation of the television networks, TiVo chose to downplay some possible features. For instance, it chose not to include the ability to automatically skip commercials in digitally recorded shows. TiVo's Ramsay explained, "Advertising the ability to skip commercials is on the other side of the line. We designed the technology so that it doesn't infuriate the networks."[6] At the same time and at the risk of offending users, TiVo designed in the capability to track what people watched, or skipped—a strong incentive for advertisers to support the new venture.

As of this writing, the cable companies and their lower-cost/lower-quality digital video recorders appear to be stalling TiVo's growth. Unless TiVo can design and build a network that brings together features these competitors cannot easily replicate, it may find itself limited to competing as just another box.

Leading by Design

When it comes to leading the new networked ventures, design has a great deal to offer. Design—*as outcome*—still plays a critical role in the success of new ventures. Design *as process,* however, now must play a more central role, because it brings an alternative perspective to traditional strategy-making.

Traditional strategy is driven from the top down, by the organization's "mission," rather than from the bottom up, through the identification of opportunities, and runs sequentially, from an overarching mission to defining objectives to analysis to formulation to implementation (see figure 4). Such a process makes it difficult to see, let alone seize, the kinds of opportunities that present themselves in new and networked ventures. On the other hand, the principles and practices embedded in most, if not all, the design professions offer a valuable alternative.

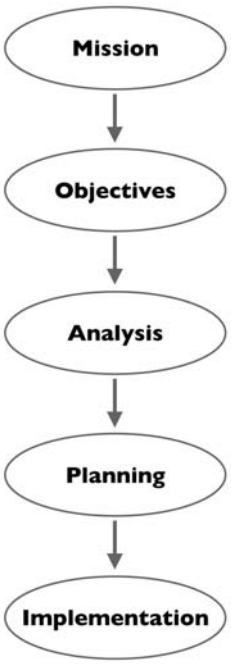


Figure 4. Traditional "top-down" strategic planning is unsuited for identifying emerging opportunities in new and rapidly changing markets.

Design Principles

A single underlying approach to the creative process is common to many of the design professions; yet in other domains of business, it remains quite foreign. Among the many ways to describe this approach is that of Peter Coughlan and Ilya Prokopoff, who see three underlying principles as fundamental: a grounding in contextual observation, an objective of human-centered frameworks, and a bias toward rapid prototyping.[7]

Contextual Observation. Problems, as opportunities, are embedded in particular contexts. As a result, new ways of framing problems and new solutions can best emerge from the observation and understanding of those contexts. In networked ventures, these opportunities now span contexts far beyond the end user and the organization. These new ventures will require the active collaboration of new suppliers, partners, customers, and others—and the challenge will be to develop a deep understanding of the needs and resources of each participant. For the iPod, for example, that meant understanding what combination of business model and digital rights management would bring in the record labels.

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5. Michael Lewis, Next: *The Future Just Happened* (New York: W.W. Norton, 2001), p. 168.

6. Op. cit., p. 172.

7. Peter Coughlan and Ilya Prokopoff, "Managing Change, by Design," in Richard Boland and Fred Collopy (eds.), *Managing as Designing* (Palo Alto: Stanford Business Books, 2004), p. 188.

Human-Centered Frameworks. This principle reflects the belief that human needs and resources should always anchor any conceptualization and discussion of potential solutions. Ultimately, designs should be driven by the values of those who would adopt and use them. Networked ventures require the same framing—but again, must account for as many frameworks as there are different participants (and perspectives) in the network. Some will be driven by profits, others by the desire for growth, impact, or the public good. Understanding and framing these different needs will be critical to designing viable networks (for example, consider the values driving each of the actors in TiVo's value network).

Prototyping. Experience is often more important than planning. This represents a bias toward action over analysis, but also an emphasis—even a priority—on experimentation. The design of new ventures requires alternative methods for prototyping. But the complexity of these networks makes planning difficult and will require new methods for prototyping the many different relationships—from profit/loss spreadsheets to inter-firm communication and billing protocols. And because, when successful, these ventures evolve rapidly, the prototyping process continues long past any single launch date. Witness the current changes in both the iPod and TiVo. Even Edison's venture shifted dramatically with the advent, four years later, of alternating current.

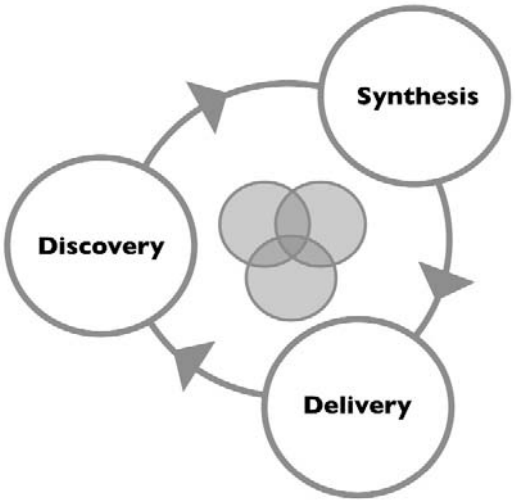

Figure 5. Successful networked ventures will depend on design principles and practices to lead the discovery, synthesis, and delivery of strategic alternatives.

Design Practices

These principles (see figure 5) drive a set of core practices—discovery, synthesis, and delivery—that enable the design process to structure new ways of crafting strategy in organizations.[8]

Discovery. This covers practices that generate a rich understanding of the needs and resources of the technical, business, and market fields being tapped. The focus is on developing a broader and deeper understanding of the problem space, which helps with improving existing solutions but also—and more importantly—with generating new ways to frame the problem. Networked ventures open new territory for discovery practices—consider the value network surrounding TiVo—but will also require designers to attend to the needs of groups that live in worlds and speak languages that are quite foreign to them now. When was the last time someone from design studied the needs and potential resources of the accountants? Of suppliers? Of competitors?

Synthesis. Bringing together the lessons of the discovery process, synthesis moves between improving solutions to known problems and identifying new ways of framing problems—in the process, generating multiple unique alternatives to evaluate. Designers, already comfortable with these practices, will need to bring in others from across and outside the organization whose previous training discouraged such broad and integrative thinking but whose knowledge is critical to the success of the project. That's because networked ventures require a greater

8. These three practices are adapted from the model Laura Weiss described in "Developing Tangible Strategies," *Design Management Journal*, Winter 2002 issue. Weiss's original conception included *discovery*, *decision*, and *delivery*. The model offered above replaces *decision* with *synthesis* in order to emphasize the distinction between *synthesis* as the generation, and *decision* as the reduction, of alternatives. Of course, in reality, any activity includes aspects of the others. For example, in the initial "discovery" phases of a new project, the synthesis (sense-making) and delivery of findings play critical roles. Finally, decisions do fall out of this process, but not as an orderly conclusion of any one cycle so much as an inability to continue the cycle.

range of content to be synthesized—from users' needs and technical capabilities to business models and profit streams. The more varied this content, the more alternatives the process will be able to generate—TiVo's options as a business model, for example, include hardware and software sales, subscriptions, advertising revenue, and transaction fees, to name a few.

Delivery. These practices communicate the alternatives created by the synthesis process. At times, this means building prototypes to evaluate potential solutions; at other times, it means creating presentations to communicate the solutions to clients and potential users. As with discovery and synthesis, the real value of this activity is to link the processes of the other two: prototypes enable the discovery of new insights by making real the possibilities imagined through the synthesis of past understandings. But as networked ventures grow, both the number of audiences and the need to communicate the value of participating grows, as well. How to best deliver alternative visions depends on the audience, and will have to range from traditional models and storyboards to P&L projections, value networks, strategic growth scenarios, even new organization charts.

It quickly becomes clear that, in designing networked ventures, the same traditional design principles and practices apply, yet new tools will have to be learned to envision the opportunities and address the needs of a much broader range of users. And these practices will have to be applied at strategic levels in organizations. Raymond Turner, the group design director of BAA, described how BAA's development of the Heathrow Express required designers to integrate traditional design with the needs and resources of traditionally distant groups in the organization.9 The high-speed rail service linking Heathrow Airport with Paddington Station in downtown London would work only if the premium service was consistent across the train, stations, marketing materials, and especially the staff who would run the day-to-day operation. As a result, Turner's group collaborated in a "highly intensive recruitment process" to ensure the employees were as well-designed as the seats. This kind of design work doesn't require an MBA, but it does require the ability to understand the needs of these many groups who would participate in this venture—from the train staff to the human resource managers to finance (who would have to justify the higher labor costs)—and how to design for them. In the end, as Turner describes, they managed to develop a "small army of champions" that was spread across the entire organization.

(Design) Leadership

While design has much to offer, assuming greater leadership roles in organizations will require individual designers to learn a critical lesson. Leadership is about more than having others follow. It's about changing the way people see the world—so that everyone's attention, decisions, and actions move them in the same direction.

In this way, leadership reflects the highest of three forms of power in organizations. The first is having a seat at the table when strategic decisions are made. The second is having a voice—being able to change the outcome of strategic decisions by arguing for the merits of design over other disciplines and departments. The third and highest form of power, however, lies in creating the actual conversation—defining the problems of the organization, how they are to be discussed, and who's involved in the discussion. At this level, leadership is at its most powerful because it's also at its most subtle.

The power to shape conversations, to frame problems, and to drive participation rests on understanding the needs and resources of all the differing functions. As firms look to create networks as sources of competitive advantage, the need to design these new ventures for the varied needs and resources of diverse actors will only increase. The principles and practices of the design profession make it well prepared to assume leadership roles in this process—but only where designers abandon elitist positioning and pursue leadership roles in organizations. We'll see true design leadership not when design dominates strategic decisions but when the principles and practices of design are what frame the strategic conversation. ■

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