Beyond design thinking
Business ecosystems come of age
Overview

NOW that many business schools and large corporations have grown enamored of “design thinking” perhaps it’s an important moment to examine this trend critically. In this brief trend report the goal is to describe why design is in ascendance, with an emphasis on how to make it as powerful, effective, and transformational as it deserves to be.

In popular constructs, design thinking approaches a problem to be solved from the opposite direction typically taken by analysts. It begins by imagining a solution that does not yet exist, and outlines a pathway to realize it—instead of beginning with an assessment of today’s problems and seeking corrections to them. At its heart, design thinking seems self-evidently useful. Generate ideas. Build prototypes. Try many things. Build narratives about them. Test everything. Do more of what works. Show a bias for action. Shoot for the moon. Or maybe even Mars. At that level, who could possibly disagree?

But often proponents of design thinking take it further. They make it a panacea. They think it “fixes” the dry, overly rational planning approaches that firms use to optimize their offerings around predetermined and deeply analyzed market segments. In this assertion, the fans of design thinking are half right: Conventional approaches to planning are overdue for reinvention. It’s the other half where their enthusiasm can be overdone. In the way “design thinking” is popularly described and delivered, it is too superficial to truly deliver on such grandiose expectations.

What’s behind this trend

Last year the Design Management Institute rigorously selected 15 design-centric publicly traded companies. Those that made the cut include Apple Inc., Coca-Cola, Ford, IBM, Intuit, Procter & Gamble, Starbucks, Nike, and others. These companies, which use design strategically and integrate it through their business processes, tend to grow faster and have higher margins than their competitors—the identified companies’ returns were 2.28 times larger than the S&P’s returns over the previous decade.

Beyond design thinking

By Larry Keeley
THE TREND IN A NUTSHELL

“Design thinking” has been increasingly embraced by the world of business and business education over the last decade. During a time of intense change, this is a positive development. It helps firms develop the courage and use tradecraft that moves beyond analysis to embrace synthesis as well. This is part of what it takes to help firms commit to building something bold and newsworthy, instead of only seeking the tactics needed to better sell what is already known.

What many people are missing

Too often advocates of “design” overreach, regarding it as an elixir that can somehow transform conservative companies into creative ones. In the most egregious cases, advocates suggest design thinking can somehow replace nearly all other forms of analysis, planning, and strategy.

What great leaders should know and do now

The power of design is real and increasingly important. It can help firms build breakthroughs and change industries, but it has to be balanced and integrated with other skills and capabilities. This is especially true now because there is a parallel revolution in how to get new insights from analytic techniques—and no one should ever jump right into innovating without first producing some set of profound insights first that can be the basis for an innovation team to do the hard work of building a breakthrough.

Put simply, analysis without synthesis is predictable and commonplace. Design thinking without deep analysis is reckless. The savvy leader now seeks to do both, recursively, in integrated, even dazzling new ways.

Of course, any good academic would note that these companies are likely to be good at many things besides design, so this correlation is not causation. A deeper piece of research was led by my colleague Brian Quinn as a part of our work to author Ten Types of Innovation, where he was able to definitively establish that among 138 publicly traded companies generally agreed by analysts to get a stock premium for innovation, there is a very strong correlation between the number of types of innovation they use in their most valuable platforms and their stock performance above the S&P. We conclude that more sophisticated design goals, when executed effectively, yield bigger payoffs.

Used effectively, design and designers truly do have the power to transform nearly everything: concepts, brands, categories, markets, technologies, materials, logistics systems, experiences, industries, even governments. There are structural reasons why design is now enjoying a new and deserved renaissance. Stripped to the bedrock, here are the specific skills shared by great designers and good design teams.

Designers:

- Conceive and make stuff
- Make things, places, and messages distinctive
- Empathize with people in situations
- Stand in the future and prototype a better world
- Imagine ideal usage experiences
- Sense and value what is new
- Grapple with ambiguity more comfortably than most
- Systematically test and iterate concepts until they get them right
- Simplify and clarify information
- Dramatically affect preference and value

Scan this list carefully. You may discover that each of these qualities is rare, valuable, and particularly relevant when change is in the works or in the wind. Next, add the possibility that we humans now live in the greatest time of change in the history of our species and you immediately can sense why the value of design and designers is ascendant.
Notice that none of the rationale so far resorts to market arguments. The argument is not that you simply must design your smartphone, insurance plan, office chair, coffee machine, or hotel well for it to have a chance to be appealing to customers who have many choices in modern, heavily contested markets. That should be obvious. The point here is actually more important and subtler: In the world right now we are changing the rate of change. So it’s incredibly valuable to have the skill to imagine a better world, make it tangible, build narratives about it, and then work through the dozens of obstacles that anything new faces throughout its development. And all the more so in a world where connectivity, collaboration, interdependence, and user engagement all converge to build modern integrated ecosystems where we formerly thought of industries.

So with all the change in the wind it would be great to simply pile on the popular trend and say that all companies would be better off if they used more design thinking. Sadly though, in the simple ways these ideas are now routinely described and taught, design thinking tends to both over-promise and under-deliver.

Great designers have the skill to build gossamer cathedrals: beautiful visions made of nothing but art techniques, but with the power to help those of us with little or no imagination to vividly experience a world that doesn’t exist yet. When this is done to reimagine something valuable, often a single simple story and a prototype can take the place of hundreds of PowerPoint charts and slides, filled with complex arguments. Like a great poker hand, this can be a lay down: Share it with a senior executive team and it immediately gets people to respond to a concrete idea. They may love it, hate it, or want more information, but since it is clear and tangible, they do not have to waste any time trying to imagine it.

But is this “design thinking”? Well let’s take it apart:

• First, this specific part, the prototype development where much of the magic lies, is less about thinking than great tradecraft and hand-skills. Well-trained designers and innovators may now have to master as many as 60 such methods.

• Second, it should be done inside a team that integrates many forms of thought and action—explicitly using advanced forms of both analysis and synthesis.

• Third, it may take weeks of climbing a confusion curve before the team has even a small chance of coming down the other side to craft something simple and compelling.

• Fourth, the individuals on a team with the power to do this kind of work are almost never all designers, but instead have many diverse backgrounds and specialized skills.

So it’s painful when this incredibly valuable skill is represented as if designers do all this stuff routinely and reliably. That’s unfair to both designers and to the other professionals who have learned to love and leverage the unique skills of design and designers. The real story is far more important than this superficial label.

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The trend

Standing in the future: Seeing the world that is coming

To get a glimpse of at least one way this future world will play out, let’s leave the abstract and go to the specific. Late in 2014 a firm located in Los Angeles made waves by declaring that they have built an entirely new way to improve how fans watch, or how professionals coach and play sports. Second Spectrum has only been around for a little over a year at this writing, but their young team of 30 people collectively has decades of experience in sports, sports analytics, big data, design, computer science, and management. They also really get the world of data visualization. Their leaders have won multiple awards at the MIT Sloan Sports Analytics Conference and they have conceived of some of the newest advances in “sabermetrics,” the abstruse world first popularized in Michael Lewis’s book *Moneyball*, later made into a popular movie.

To understand how they do this, look at this photo of one of their products, taken from the Second Spectrum website:

![Figure 1. A Second Spectrum game](Source: Second Spectrum. Reprinted with permission.)

What you are seeing here is their realtime ability to illustrate how a coach might improve the playing skills of Chris Paul, the player shown with the ball, highlighted by their software in bright red. The software shows that Chris could shoot the ball from his current position, and using big data, they calculate that his odds of getting the resulting two points are about 45 percent. Alternatively, he could pass the ball across the court (and over *three* defenders!) to his colleague Matt Barnes for a three-point shot, but this would have a lower chance of success, only 35 percent. Or, he could pass it to Blake Griffin on his left, with the worst odds of successfully making the bucket. Highlighted in green is his best option: tossing the ball to the right, where J. J. Redick has a 43 percent chance of making a three-point shot, which is equivalent in terms of point value to a 65 percent chance two-pointer. Notice that the software immediately highlights that best option in green, the other three are yellow. In subsequent frames, the software also shows how these options, and their corresponding expected values, change as the play progresses.

In general, the Second Spectrum capability distills six distinct capabilities, including an amazing ability to dynamically model “large-scale spatiotemporal data” into software tools that transform how we can better understand a complex, fast-moving game. As represented by the icons in figure 2, what they have learned to integrate is:

- **Massive data sets**, so that they can find patterns from past actions
- **Analytic models**, so they know what to pay attention to and what to track
- **Real-time visualization**, so that they are able to pick the moments that matter
- **Close examination of details**, so stuff that matters is in color and stuff that doesn’t is grey
- **Graphics overlays** that highlight in color and layer data that is critical in the moment
- **Storytelling** methods that help coaches coach, players play, and fans be smarter viewers

The team at Second Spectrum developed these capabilities in large part because they loved the ideas and saw them as intellectually compelling. Their plan was to develop them fully over the next five to ten years. Of course...
they could not have anticipated the fascinating series of events that transpired when Steve Ballmer bought the LA Clippers for a reported $2 billion in cash—nearly four times the prior highest price paid to buy an NBA team. Then Ballmer dropped by to visit their L.A. lab. The Second Spectrum team showed their wares and described their five-year plan. Steve, seeing the value in the capabilities, immediately urged them to apply all their capabilities to the Clippers and accelerated their developmental timetable.

This is what happens when you get innovation right: It transforms entire fields, often much faster than anyone anticipated. Think of the speed with which smartphones changed telephony, Uber changed the urban taxi market, Airbnb changed the hospitality market, and Twitter changed the ability of repressive regimes to control how their populations communicated with one another.

To fully appreciate what Second Spectrum has shown us we have to imagine it as the lead edge of a large plow. Imagine a world where we don’t just use such elegant computational firepower for sports. After all, none of us should be surprised when some of the most advanced process innovations are first applied by billionaires, spending their own money, on their hobbies—typically they can do so very easily and with no approval committee!

But the rest of us should imagine something similar will be used to help medical teams treat complex patient conditions with integrated care strategies. Or imagine seeing your personal or family finances this way—including simplified visual suggestions for the simplest changes that would make the biggest impact in helping achieve family goals. Or perhaps we use a similar capability to fully understand changing climate conditions with less ambiguity, more clarity, and absolutely no political spin. Capabilities like this should, by all rights, transform nearly every field, from agriculture to education, transportation and logistics, investments and financial operations, weather prediction, travel and hospitality, political campaigns, or even warfare, whether real or cyber—even those “wars” declared against poverty, drugs, extremism, or terror.

Implications

Integrated analysis and synthesis: The new frontier

So is this design thinking? Not really, though you sure couldn’t have 10 percent of this impact without effectively using design, especially data visualization methods. An effective way to understand what Second Spectrum has pulled off is that they are harnessing many specialized skills, all with elegant integration, so that their genius ideas fall into the background and they help us regular folks make it easy to do hard things. At a larger level, this illustrates a critical principle of 21st century innovation: Effective innovations today are far more about elegant integration of the known than about the primary invention of the new.

Take a look around and you’ll see evidence of this new integration everywhere. Consider the game phenomenon from King called Candy Crush. Perhaps some of you

Figure 2. Second Spectrum’s six distinct capabilities

Source: Second Spectrum.
have invested more hours in this particular game than you care to admit. Have you ever asked why?

It’s because the design team has used the behavioral finance discoveries typical of the best Vegas casinos, plus beguiling design qualities, clever animations, and great ways to tease and engage players and get them to obsess about rising through ever more demanding skill levels—all delivered in the smartphones we now have in our pockets. All that seems innocent enough: just another time wasting game, no?

Sorry, you may be missing the point. This is the first game to be rated No. 1 globally and simultaneously on Android, Facebook, and iOS platforms. It was played over 151 billion times in the first year since it was launched on smartphones! There are well over 97 million daily users, fully 30 percent of whom say they are “addicted.” The game makes money through in-game sales: You’re stuck on a level, you’re about to die, at which point the game will prevent you from playing for a couple hours… or, for about 80 cents, you can get five more moves, crush those candies and advance to the next level.

A shockingly large number of people go ahead and spend the 80 cents. So Candy Crush takes in $1,005,806 per day according to analysts, while another popular smartphone game, Angry Birds, the most downloaded game of all time, takes in only an estimated $10,661 daily. Gee, no wonder those birds are mad . . .

And don’t assume that this integrated approach to industry transformation is only occurring in the United States. Chinese retail firm Alibaba—best imagined as a mashup of eBay, Amazon, United Parcel Service, and Facebook—aims to cater to the evolving needs of China’s massive and growing middle class. In 2009 they created a holiday, Single’s Day, kind of a Valentine’s Day culturally adapted for China on November 11 (11-11 = lots of “singles,” get it?). On that day people who were single gave each other gifts through Alibaba, which used advanced technology to help people give their nice gift to their single friend at either 11:11 a.m. or 11:11 p.m. on the dot. In 2013, Alibaba became the first firm in history to sell and deliver $6 billion in goods and services on a single day. This included over 70,000 room vacuum cleaners, though why that is somehow a romantic gift remains a mystery. Less mysterious, though, is that Alibaba is taking many well-known global advances in e-commerce ecosystems, and using both analysis and synthesis to cater explicitly for life in modern China.

All of these examples share one property: They fuse together insights that come from sophisticated analytics, with experiences that are brilliantly designed to be easy, smart, convenient, and entirely understandable.

What’s next

The road ahead: What’s next for firms that want to lead their fields

So what do today’s leaders need to take away from the steady, welcome, and important ascendance of the design field? Remember that the dumbest way to simplify anything is to throw out all the hard parts. Three explicit principles are news you can use and ideas you can adapt:

1. **A key today is to use information deftly to manage complexity**, and you inherently do that with many specialized skills working effectively together.

2. **Great design is a critical catalyst and accelerant to the overall advance you seek**, and this stems largely from designers doing a good job of integrating complexity into an elegant and even delightful experience.

3. **But you should avoid labeling this design thinking**, because such a label will obscure the deeper truth: What works today is deep, informed analysis seamlessly synthesized into coherent, beautiful solutions.
You will likely get to breakthroughs sooner if you do not assume that “design thinking” is, somehow, the one mystery ingredient you are missing. We make progress when we break things down into amazing insights and then build them up in unanticipated and insightful ways. This means that if your teams are too driven by analysis, you almost certainly need to get past that set of tools alone so that you also cherish and leverage synthesis. Still, in all probability your issue is not only that you need more and better synthesis, you almost certainly need more and better analysis too!

One surprising fact may help snap this into focus. Take all the data that exists in the world right now, and arbitrarily label that 100 percent. Shockingly, 90 percent of that vast data archive did not exist only two years ago.18 This helps explain why nearly all the innovations we love, from Google, to Wikipedia, to GPS systems, smartphones, Amazon, or Uber are derived, in part, from or are utterly dependent on new forms of analytic tools. Add liberal amounts of design on top of these skills and you will get your products to be platforms, your offerings to become deep solutions, and your industry to evolve into an ecosystem. That’s when you’ve done enough innovation to change the world.

When you get all the parts right, it will be the hardest work you ever loved.
**My take**

_By Nicholas LaRusso_

Nicholas LaRusso, MD, physician scientist and practicing liver specialist, is the founding medical director of the Mayo Clinic Center for Innovation—the first academic medical center to hire designers as full-time integrated members of the practice.

When I became chair of the Department of Medicine at the Mayo Clinic in 1999, innovation was a board-level buzzword, and not much more. In the 16 years since, we have elevated innovation to become a central tenet of Mayo’s broader vision, right alongside excellence, respect, and teamwork.

The drive to innovate is nothing new for Mayo. In the late 1800s, the Mayo brothers were the first to see the value of coordinating teams of specialists to deliver integrated patient care. Inspired by this vision of synergy, I assembled a similarly diverse set of doctors, designers, and project managers to drive our innovation efforts in the Department of Medicine. We called it SPARC (see-plan-act-refine-communicate), and adopted the goal of _transforming the experience and delivery of health care_ by combining the insights of this interdisciplinary group. This was our first true “lab” where we could test hypotheses, observe interactions of patients and providers, and develop insights to find new ways to provide care.

Why designers? Because they saw old problems in new ways, often forcing us to place the immediate needs of our patients—the humans whose lives we were attempting to improve—at the heart of the innovation challenge. This human-centered perspective on organizational transformation remains crucial to our day-to-day operations.

Importantly, however, our model never relied on designers as a cure-all: We prioritized _co-creation and integration_ across the many areas, and many experts, of Mayo. Two particular steps proved especially central to establishing the Center for Innovation (CFI) at Mayo as the hub of our ongoing innovation efforts.

First, we designed a state-of-the-art, downright cool home base at the heart of Mayo’s outpatient facility to serve as a _physical magnet for innovative energy_. We have always kept our doors wide open, proving to the rest of Mayo that we were the Center _for_ Innovation, not the Center _of_ Innovation. Innovation was happening everywhere; it was our job to help provide structure and direct energy.

We also launched the Connect-Design-Enable (CoDE) program, an internal grant competition open to all employees with ideas for improving Mayo. The _program provides grant winners with both dollars and CFI personnel to implement ideas using human-centered design._ This program has integrated the CFI with the rest of the practice, while driving advances in patient experience, situational awareness, and even medical technology.

Innovation at Mayo takes people who aren’t comfortable with the status quo, who can live with ambiguity, and who enjoy defining problems and coming up with solutions. We integrate them with other internal and external partners and give them the tools required to co-create the future. We know that these people can be designers, doctors, or even experts outside of the clinic’s walls. With the right mindset and support, these diverse and carefully curated groups of innovators are transforming all aspects of the design and delivery of health care, right down to its human core.
Larry Keeley is a director with Deloitte Consulting LLP and co-founder of Doblin, the innovation practice of the US Strategy service line Monitor Deloitte.

Those looking for a general introduction to the topic may refer to Tim Brown’s book *Change by Design* or the more recent and deeply researched work by Jeanne Lietka, Andrew King, and Kevin Bennett, *Solving Problems with Design Thinking*.


It should be noted that the author teaches at a similar program at Northwestern University that combines Kellogg Graduate School of Management, McCormick School of Engineering, and the Segal Design Institute. Students have to be separately admitted to the business and engineering schools and get both degrees. Keeley’s course on Innovation Frontiers is a required course in this program.

2. Rae, “Design can drive exceptional returns for shareholders.”


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