Designing in HOSTILE Territory

Even in seemingly 'hostile' territory, it is possible for design thinking to prosper – if managers embrace the challenge by employing techniques from the design toolbox.

by Roger Martin

Broadly speaking, value creation in the 20th century was about taking a fundamental understanding of a mystery – a *heuristic* – and reducing it to a formula – an *algorithm* – so that it could be driven to huge scale and scope. As a result, many 20th century organizations succeeded by instituting fairly linear improvements, such as reengineering, supply chain management, and cost controls. The success of **McDonald's**, **Dell** and **Wal-Mart** depended not so much on superior products, but on a superior process.

As evidenced by the success of **Apple**, **Google**, **Research in Motion** and others, competition is no longer in global scale-intensive industries; rather, it's in non-traditional, imagination-intensive industries. The 21st century will be characterized by the production of elegant, refined products and services that delight users with the grace of their utility and output. And as a result, businesspeople must think and become more like designers – more 'masters of heuristics' than 'managers of algorithms'.

Before organizations can even think about generating meaningful benefits from design, they must first address a hidden trade-off that is being made within their walls on a regular basis: the one between 'reliability' and 'validity'. The paradigmatic shift taking place in economic value creation requires individuals and organizations to move away from an obsession with *reliability* and towards a more welcoming environment for *validity*.

A reliable process is one that produces a consistent and predictable result, over and over. To enhance the reliability of any process, one has to reduce the number of variables considered and use quantitative, bias-free measurement. On the other hand, to increase the validity of any process, one must consider a wide array of relevant variables. Of course,

we would like a process that has both high validity *and* reliability – and up to a point, it's possible to get more of both, simply by being more thoughtful and less sloppy. But ultimately, reliability and validity anchor down opposite ends of a spectrum: more reliability requires fewer variables and therefore less validity, and vice versa.

Design's Bias Toward Validity

How does this trade-off relate to design, and why should it matter to today's business leaders? Because design possesses an inherent bias toward validity. Great designers seek deep understanding of the user and the context, which entails the consideration of many variables. They don't limit their considerations to aspects that can be thoroughly quantified; they worry less about whether they can replicate a particular process, and more about producing a valid solution to the problem before them.

Entrepreneurs – who are essentially designers of business models – have a similar approach. They start out with new-to-the-world ideas that they believe in, but typically can't prove. They value judgment, experience and gut instinct – and in this way, they are highly validity-oriented. But as a successful entrepreneurial venture grows, it acquires outside investors and a board of directors, and it begins leaning more towards reliability. With ever-bigger dollar amounts at stake and more scrutiny of investment decisions, the growing organization increasingly values processes that are quantitative, analytical, and bias-free. Variables that are difficult to measure quantitatively – such as feelings and relationships – get dropped.

It's not that organizations don't like or want great design; it's just that when a validity-oriented design comes to an important corporate decision gate, the reliability-oriented question inevitably gets asked: "Can we prove that this will work? How can we be sure?"

Typically, the answer is no, it can't be proven, and we can't be sure. Nobody could prove before **Herman Miller** launched its Aeron chair that it would succeed at all, let alone become the most successful office chair of all time. And so design often gets undermined, subdued, or

killed without explicit intent – a victim of the corporate bias toward reliability.

If an organization wants to enjoy the benefits of design in its products, services, processes and business models, it must go considerably beyond simply hiring designers or declaring itself to be design-oriented. Its leaders must take responsibility for safeguarding validity. If they don't, the organization's natural inclination toward reliability will win out. The questions they

ask, the proof they demand, the way leaders treat failure – each sends a signal as to whether design thinking is 'safe' or not. If their questions are all about the most readily-quantifiable numbers, if the standard of proof is high and numerically-driven, and if failure is treated as indicative of incompetence, employees will understand that their organization values reliability over validity.

If, however, a leader's questions probe the trickier qualitative aspects of a decision along with the hard numbers; if she utilizes a balanced standard of proof that takes into account the complexity of the issue at hand; and if she treats failure as an unfortunate consequence of living in a risk-filled world, then she will signal that she balances the need for reliability with the desire for validity. And she will foster design thinking.

The Validity vs. Reliability Struggle

A friend who works for a large wireless provider complained to me recently about the impossibility of taking a design approach in his 'design-unfriendly' organization. He recently put forward a new approach to customer service designed to dramatically enhance retention, and it was shot down in flames by, of all things, the 'Corporate Customer Innovation Committee.' "Roger," he bemoaned, "You write all this stuff about business design, innovation

and creativity, but unless managers have a CEO who aggressively promotes design, they will be squelched."

I can feel his pain, and I empathize with him; but do I sympathize? Not really, because he is thinking about the question from a design-free perspective and expecting a design-friendly outcome that is just not going to happen, much as I might wish it for him. The bottom line is, you don't need anyone's permission to think like a

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designer. But there are five things you need to do if you want to be effective in a design-unfriendly organization.

1. Take 'Design Unfriendliness' on as a Design Challenge

This is the essential starting point. A key tenet of designers is that constraints make the challenge more exciting and rewarding, and hence the absence of a design-appreciative CEO is not a constraint about which to complain. To be sure, it is a constraint. But to a designer, a constraint is an important signal – a signal of the presence and centrality of a design challenge. And that challenge was not, in my friend's case, the design of a customer-retention enhancement. The real and highest-order challenge was the design of a way for the Customer Innovation Committee to get itself comfortable enough with a proposed new initiative to take action on it.

The non-designer's approach is to imagine the task as creating a nifty approach to enhancing customer retention, while averting his eyes from the constraint of creating an idea that is compelling to the Customer Innovation Committee. This is what I call 'narrow perfectionism': if you ignore the trickiest constraints and define victory narrowly, you can always achieve

victory and blame someone else – i.e. the Innovation Committee – for the failure to produce beneficial action.

In contrast, the design thinking manager would hone in on the most difficult constraint – 'design unfriendliness' – and integrate that constraint into her design approach. This of course makes the challenge bigger and more complicated, increasing the possibility of failure – all of which does nothing to deter a true design thinker; in fact, it attracts them even further to the challenge.

2. Empathize with the 'Design-Unfriendly' Elements
The only way to design a compelling solution for a user is to understand that user in a positive way. If the Customer Innovation Committee can only be understood by my friend as a bunch of ultra-conservative, gutless Luddites, then the key insights to designing a compelling solution for them will be hidden. It is almost impossible to design something compelling for a person whom you don't respect or attempt to understand. The architect's filing cabinet full of never-built plans for houses designed for clients he viewed as 'philistines' are testament to the limitation of disrespecting your user. The architect consoles himself with the brilliance of his design, without having any better explanation of its still-born fate other than, "the client had no appreciation of architecture." The same holds for credenzas full of unused strategic plans from strategy consultants and book shelves full of unpublished manuscripts for the 'next great novel'.

In contrast, the design-thinking manager attempts to achieve a deep understanding of her user in order to uncover the greatest range of options for creating a compelling solution. What are the user's greatest hopes? What keeps the user up at night? What are the minimum acceptable conditions for the user to embrace a design solution? How much risk is the user willing to absorb?

Crucially, each of us has a choice of answering these questions either with empathy or disdain for the user. The non-designer sees what keeps the user up at night as the desire to 'keep his posterior covered'; while the design-thinking manager sees what keeps the user up at night as the desire to protect his employees from the consequences of a reckless decision. The latter form of understanding enables the designer to probe what constitutes a reckless decision versus a 'sensibly-aggressive decision', and

Design Thinking *Interview by David Dunne*

David Dunne: How did you become interested in the topic of design in relation to management?
Roger Martin: It all started with my encounters with **Hambly and Woolley**, a small design firm here in Toronto. Just by osmosis, I became interested in the way they would think about problems. For example, one assignment they had was for a hunting lodge, where the owner was bankrupt and was selling off all of his property. The designer had to create a sales brochure for this extremely fancy lodge, but there was no budget for it. I was so fascinated by what the designer did: he created a very rough photo album with shots of the lodge mounted with those little black corners. I was amazed at how he took this on with such joy – this notion of, how on earth could he possibly, with very little money, create something that looks great and sells. The kernel was: there is this problem, all these constraints and something has got to look great. It occurred to me that this is what great business leaders do. They enter some kind of constrained environment where they want to do something that is near impossible. They have to figure it out by thinking differently from anybody else.

What I see in the best business people is the same as what I see in designers at their best.

DD: What is so special about the way designers think?
RM: The designers who can solve the most wicked problems do it through collaborative Integrative Thinking™, using *abductive* logic, which means the logic of 'what might be'. Conversely, *deductive* and *inductive* logic are the logic of 'what should be' or 'what is'. In traditional organizations, do you get rewarded for thinking about what might be? Encouraged? No. Most firms can only do what they know how to do, and constraints are the enemy – as opposed to design firms, where constraints bring challenge and excitement.

This relates directly to Integrative Thinking; the non-integrative thinker readily accepts unpleasant trade-offs, while the integrative thinker instead seeks the creative resolution of tensions.

DD: So under the traditional model, we are selecting among predetermined alternatives; but with a design model, we would think outside of the existing alternatives and create new alternatives.

RM: Exactly. A traditional manager would take the options that have been presented and analyze them based on deductive reasoning. You typically get those options on the basis of what you have seen before, using inductive logic, and then you select the one that has the highest net present value. Whereas a designer uses abductive reasoning to ask, "what is something completely new that would be absolutely lovely, but doesn't yet exist?"

DD: What does all this mean for business education?
RM: Business education has to become more like design education. That means, first, getting MBA's to think in terms of projects where you solve wicked problems using abductive reasoning, in addition to teaching deductive and inductive skills. Secondly, MBAs have to learn collaborative skills. They have to learn to listen to others and understand their reasoning process, rather than spend their time saying, "her reasoning process is different than mine; therefore it is wrong." Thirdly, a great business design school would have the student go much deeper on understanding the user and the user experience than we currently do in business schools. I would like to have students start with a project where they have to go out and understand everything they can about users – whether it be beer

hone in on a sensibly-aggressive decision – from the user's standpoint. Because the non-designer has no idea where the user draws the line between 'sensibly' and 'recklessly' aggressive, she will create a solution that inadvertently lies in the reckless zone, and will be rejected out of hand.

3. Speak the Language of Reliability

In order to empathize, one needs to communicate. The problem is that 'design-unfriendly' and design-oriented people speak different languages. The former speak the language of reliability, putting a high priority on the production of consistent, predictable outcomes. They frequently use words such as 'proof', 'regression analysis', 'certainty', 'best practices', and 'deployment'. Design-oriented

people speak the language of validity, putting a high priority on producing outcomes that delight users, whether they are consistent and predictable or not. They frequently use words such as 'visualization', 'prototyping', 'beta-testing' and 'novelty'.

The latter words quite simply terrify the members of a design-unfriendly organization; they don't really understand what they mean to the designers, and the way in which they do understand them runs in direct opposition to the things they hold near and dear to their hearts. These design-oriented words connote danger, uncertainty and guess-work; things that encourage, if not compel them to say no.

If a design-oriented person is indeed embedded in a design-unfriendly organization, she is going to have to wait a very long

time for the organization to learn the subtleties of her language. It is incumbent upon her to learn the language of the majority – the language of reliability. This will enable her to describe her ideas in reliability-oriented language. It simply won't cut it to say, "I know that no one has ever tried this before, but I think it is going to knock the socks off our customers!"

I should know: I vividly remember working as a relatively young consultant for a gigantic bank on a private banking strategy for its high net-worth customers. My team came up with a breakthrough idea based on insights about the customers that the bank had never considered. In due course, we were given an audience to present our proposed strategy to the bank's CEO and his six direct reports. They listened attentively. At the end,

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drinkers or car drivers. The skills you need for this are skills of observation and inquiry, and we don't teach that in MBA programs.

DD: Aren't projects and team collaboration an important part of most MBA programs?
RM: Most teach a very narrow form of collaboration, which is to find somebody who thinks like you and then work together with them. I don't think we teach students to really dig deep and to understand somebody else; we don't teach them about visualizing and imagining something that does not yet exist that would take care of users' needs. We don't teach them about prototyping, giving the product to the consumer and then improving it, and improving it some more.

DD: Would we be seeking different types of students for this type of program?
RM: I think we would. Many people just won't like the idea of this type of MBA; they will still think an MBA should be all analytical, quantitative, number crunching, etc. People who don't like other people, who prefer to think hard and long at their desks about an idea, then try to convince everybody that it's the best idea in the world, and then execute on it – these people would either not be interested or would get weeded out in the application process.

DD: One criticism of business education is around teaching people the wrong skills — an emphasis on analysis rather than synthesis. How does design help here?
RM: What the critics are doing is to critique in a business-school way, using business-school logic. They are making everything 'either/or' – but it's not either/or: you have to do analysis *and* synthesis. But they are right that business schools tend to view the world as either/or. I get that from some faculty: "But you are saying we don't have to teach them the models and they don't have to know double entry accounting by the time they get out of here". But it is not either/or: even as students become designers, they will still need to learn all the existing models.

DD: What types of tools might be useful additions to the MBA toolkit?
RM: Harvard's **Chris Argyris** discusses fundamental insights about how people learn through the skill of inquiry. One version of this is *appreciative inquiry*, where the emphasis is on better understanding what the other person is thinking. How often do you get a blinding insight out of your *own* head? You usually get to blinding insights when you listen to somebody and take that little snippet of logic or data, merge it with something that is in your head, and *whammo*, out comes an interesting new idea. You systematically prevent yourself

from getting there by being dismissive of users, clients, and colleagues who don't agree with you.

DD: How receptive do you think the business world will be to MBAs as designers?
RM: Totally. Some will say they don't want designers, but they do. The people at the helm of the most innovative companies are designers more often than not. They see the whole picture of who they are, what their company is, what they are trying to accomplish, and they listen carefully to others. For our part, we have to teach students Integrative Thinking – the broader notion of what is salient, what the important relationships are, and to look at things as a whole, not as piece parts that you put together.

DD: So Integrative Thinking is a methodology then, and the goal is design. Is that a way of putting it?
RM: Yes. The goal is to produce designers, and the method of thinking in the head of designers is Integrative Thinking.

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the COO asked one question: "Have any of our competitors ever done anything like this?" Revelling in the unique brilliance of our solution, I enthusiastically responded: "No, not even close!" I was too young, foolish and design-insensitive to realize that my answer put the final nail in the coffin of our idea. That was 1988; it is small consolation that I have recently observed several banks utilizing the approach we laid out almost two decades ago.

4. Use Analogies and Stories
What tools can help bridge the 'language gap'? It is difficult to provide 'proof' or 'certainty', even if a design-thinking manager appreciates that those words loom large in the reliability lexicon. The best tool available is analogy: crafting a story that takes an existing idea in operation elsewhere and shows how it is similar to the novel idea being proposed – not exactly the same, but similar enough to provide the proverbial 'trail of bread crumbs' from the analogy to the new idea.

So rather than either exalting the complete novelty of the design idea or throwing-in the towel because it simply can't be proven with certainty, admit that while it has elements of newness, it also looks a lot like x combined with a little of y, both of which have been working for some time. Had I had more empathy with my banker clients and understood the language of reliability, I might have responded to their query, "None of our domestic competitors have done this; but a variant of this approach has been used by some of the best-performing European private banks for some time now. It isn't exactly the same, but it bears important similarities. And recall, our bank has succeeded in the past when it has taken an idea from outside our home market and introduced it here."

This approach doesn't eliminate the risky appearance of the idea, but it helps

the receivers formulate a reliability-oriented argument to themselves. And in the end, in order to take action, they will need to convince themselves that the idea falls into an acceptable range of reliability.

5. Bite Off as Little a Piece as Possible to Generate Proof
Even with careful use of language and employment of analogies, 'proof' remains the biggest problem for design thinkers. They simply don't traffic in it — at least not 'before-the-fact' proof of the sort reliability-oriented folks crave. Designers simply can't prove in advance that their ideas will work in the way that a reliability-oriented executive can prove that he sold $800 million of product in the latest fiscal year. As a consequence, a big part of the design task facing the design-thinking manager in a design-unfriendly environment is to generate bits of 'proof' on the way to the full deployment of the design idea.

Design-oriented managers don't like this notion. Typically, they want approval of their whole idea, because it feels to them that any parsing or phasing of the solution will destroy its integrity. That may have appeal to the designer, but that approach once again averts eyes to the real design challenge – how to bring the idea to life in a somewhat hostile environment.

It may not be entirely comfortable, but a whole industry – venture capital – has figured out this approach. The entrepreneurs that venture capitalists finance are validity-oriented designers: they attempt to come up with new-to-the-world products or services, which they believe will be smash hits, but they can't prove this in advance. Each one would love the venture capitalists to see exactly what they see and generously fund the entire project from start to finish. But since the halcyon days of 1998-2000, that rarely happens. The venture capitalists,

who feel the need to be more reliability-oriented on behalf of their investors, dole out the venture financing in little dollops, with each round contingent on increasing levels of 'proof' that full deployment of the idea in question will be a big success.

Like venture-capital-backed entrepreneurs, design-thinking managers living in 'design-unfriendly' environments need to develop the capacity to create roll-out plans for their ideas that help their organization ratchet up its confidence, one step at a time.

Parting Thoughts
Certain corporate departments – including powerful ones like finance – are more insulated from direct market pressures and can more easily slide into deep reliability. Strict numerical proof is required before anything can happen; finance provides the templates for analysis, sets the burden of proof, and anything that can't be strictly quantified is unnecessarily risky.

Every organization needs a strong finance function – and human resources, product development, legal, etc. – but its leaders need to understand that they can't let finance or any other division run roughshod over validity, or they will unknowingly drive design thinking out of their organization. That's why an additional task for today's CEO is to act as the 'CVO' – chief validity officer – in order to protect and nurture a design culture.

While my aforementioned friend would love to be given the latitude to think design thoughts and experience no friction in bringing them to life in his organization, it is rarely going to be so idyllic. However, neither he nor others in his situation need to assume that it is impossible for design thinking to survive in seemingly hostile territory. Design thinking can prosper if managers in my friend's position embrace the challenge by empathizing, learning a foreign language, story-telling and biting off one bite at a time. ▣

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