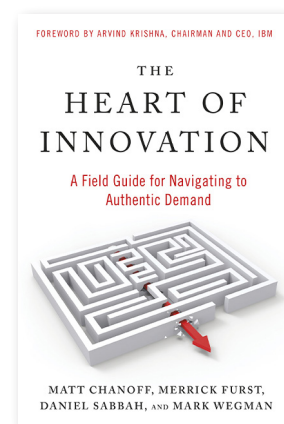


The Heart of Innovation

A Field Guide for Navigating to Authentic Demand

by **Matt Chanoff, Merrick Furst, Mark Wegman, and Daniel Sabbah**



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THE SUMMARY IN BRIEF

Blockbusters dominate our perception of innovation. The Xerox machine. The IBM PC. Apple's iPhone. The Boeing 737. The Volkswagen Golf. But the path to innovation is more often defined by failure than by success, with around two-thirds of all market launches collapsing within a year. This leads to huge financial losses and millions of lost hours of engineering, design, and marketing work. The constraints on economic growth and development are clear and significant.

In *The Heart of Innovation: A Field Guide for Navigating to Authentic Demand*, authors Matt Chanoff, Merrick Furst, Mark Wegman, and Daniel Sabbah tackle this urgent challenge with the novel approach of examining the demand side of innovation through the lens of a deeply layered understanding of human behavior. The result is a comprehensive guide to assessing "authentic demand" and a powerful new tool for innovators. In the same way that the emerging study of human behavior fundamentally altered economic theory, we now have insights into how blind spots, biases, and false assumptions can impact innovation. This book introduces valuable concepts anyone can use to avoid some of the thinking errors that commonly thwart the creation of new products.

IN THIS SUMMARY, YOU WILL LEARN:

- How to get unstuck with authentic demand.
- The three types of innovation.
- Four issues that get in the way of innovation.
- Why unconditional positive regard is a key to innovation.

PART ONE: ACCIDENTAL INNOVATION

Authentic demand is the motivating force behind success in innovation. In many cases, finding authentic demand is an accident. Good accidents can happen, but all too often they don't. But you can learn a deliberate methodology for uncovering it.

Getting Unstuck with Authentic Demand

An innovator's goal is a complete innovation. A complete innovation depends on other people adopting it and bringing it into their lives in some way. Innovations stand or fall not on one key question: Are the people they're intended for indifferent to them, or do those people in some way bring the innovation into their lives?

The core of sustained innovation is reciprocity. The innovator does something that leads other people to do something that enables the innovator to keep doing whatever they were doing. *Together, the two sets of behaviors support each other in a repeating cycle, and that's the mechanism of a complete innovation.*

Being stuck, as an innovator, means being unable to get the reciprocal dynamic going. There are four broad categories of sticking points:

- **Technology.** Innovators can't actually make and produce the product they have in mind.
- **Marketing and sales.** They don't know how to proceed with getting their product in front of their would-be customers and convincing them to buy.
- **Finance.** They can't raise money or produce goods and sell them profitably.
- **Leadership.** They can't put together the right team and create the right culture and work environment to make it all happen.

The premise of this book is that there's a fifth category, a kind of elephant in the room that is usually ignored or waved away or danced around. But getting unstuck in this category is the most important job of all, and doing it sheds important light on all the others.

The hidden category is usually called demand, but to distinguish it from random purchasing activity we'll call it authentic demand. The opposite of authentic demand is indifference. *Authentic demand* arises when would-be customers experience *not* buying as a problem, as something they can't be indifferent to, almost as a violation of something important.

Finding Authentic Demand

Many innovations come to be accidentally but we can work toward breakthroughs purposefully and methodically. Applying the principle of *not nots* can help.

The world is full of situations that can be better understood by seeing the not nots. People will not not pinch their fingers in closing doors. Certainly fingers end up getting pinched, but you can rely on people to move their hands to avoid it happening. People will not not go to bed without having eaten. They will not not greet a friend they pass on the street. Parents will not not see that their children get home after school.

Not nots are not musts. Sometimes they fail; sometimes people forget or circumstances intervene or more compelling not nots take precedence. But in any case, they matter.

However, not nots are often hard to notice, because people typically just take care of them in the normal course of their days. Sometimes, though, they're noticeable in the adaptations people make to new circumstances. The world is always throwing us into new situations, and we generally cope, adapting to the situation so as to keep fulfilling our not nots.

Except when we can't. Sometimes situations change in such a way that people can't find an adaptation that works. Sometimes the ways we cope with one situation come into conflict with how we cope with another. In these circumstances, a product that offers people a new adaptation, so that they can keep fulfilling their not nots, will fly off the shelves.

Three Types of Innovation: Informative, Transformative, and Formative

An *innovation* always involves a change in behavior. It's a sustainable, repeatable change that results in a new equilibrium, a change in the form of culture itself. This can happen in three different ways. We call them *informative*, *transformative*, and *formative*.

Informative. These innovations improve something for customers or companies without changing the situation they're in. Informative innovation leads to incremental improvements in products and gradual improvements in customers' lives, along recognized, established lines. An example of informative innovation is a railroad company that considers improving service by buying newer diesel engines or refrigerator cars.

Transformative. These innovations change the assumptions at the root of how customers or companies behave in

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a situation. It is called transformative because it changes the form of the situation. Transformative innovation can lead to a quantum leap in opportunities.

One example might be a railroad company that reimagines itself as a transportation company, leveraging its in-house expertise in logistics and customer relationships to address opportunities in shipping or air freight.

Formative. Formative innovations are the ones that led to forming the situation in the first place. Virtually every successful company starts by forming something new, something that isn't incremental and isn't a transformation of something else.

One example is the formation, in the 1890s, of Herman Hollerith's Computing-Tabulating-Recording Company (CTR). CTR innovated a new form: management of large-scale data. The company's name was later changed to IBM.

Understanding the differences between the three types of innovation helps with expanding opportunities and guarding against challenges.

Each type of innovation has its own problems and its own most effective tools. Often a leader who's good at one type of innovation is less effective at another. Innovators in large companies regularly fail to meet challenges because they limit themselves to informative mindsets and tools, or because they underestimate the challenges of transformative innovation, or because they underestimate the worth of formative innovation, which starts small.

Paying attention to one type of innovation and not noticing the others is a type of blind spot. To see more clearly, innovators can ask themselves, "What type of innovation might make sense here?" or remind themselves, "When I'm stuck, it might be because I'm thinking about the wrong kind of innovation."

Deliberate Innovation involves considering and choosing a type of innovation to focus on, understanding the challenges that come with the territory, and using the right tools for the job.

PART TWO: DELIBERATE INNOVATION

Two of the most striking aspects of many innovations are that (1) the not notes are hidden, and (2) figuring them out ends up being more or less an accident. If something is (1) necessary and (2) invisible and also (3) requires a series of accidents to happen, then it won't happen very often. That itself plays a major role in innovation's enormous failure rate.

You can change that equation and make innovation more deliberate, as will be illustrated with the following real case example.

Beginning to Innovate Deliberately: The Mystery of Damballa

When Matt and Merrick started their first business together, an internet security company called Damballa, they ran into a road-block they didn't expect. Learning to understand what happened set them on the path toward Deliberate Innovation.

Merrick was excited to tell Howard about a new technology some colleagues were working on at Georgia Tech to counter what they saw as the most significant looming threat to anyone doing business on the internet.

Bots were taking control of vast numbers of computers without their owners' knowledge. And the malware that these bots were running was becoming increasingly capable of causing their host machines to do more and more problematic things.

Howard, of course, understood the threat early. There was a particular way that he thought the solutions that Merrick's technical partners were working on could be applied in service of the commercial interests of eBay, and he asked Merrick out to San Jose to present.

The meeting seemed like a spectacular success. Howard and his team already knew that bots were busy ripping off eBay and its customers. The Georgia Tech team's technology appeared to be a revolutionary solution for a huge and promising market.

Howard jumped on it. His next question was “How soon can you deliver?” With eBay’s apparent interest in becoming the first big customer, and other potential customers signing contracts and otherwise signaling interest, it never occurred to us (Merrick and Matt) that we were stuck.

Six months later, Damballa was ready with a product for eBay. But very strangely, there did not seem to be a lot of interest in actually having anything happen. There were polite conversations that never led anywhere. Damballa survived, but never sold a trust fraud or click fraud solution to eBay, or to anyone else, for that matter.

Everyone at Damballa believed that all the elements that made up demand were in place. We didn’t feel stuck.

What was missing?

As management and the board worked to get the company on track, they addressed all the conventional issues. Some people thought that money was the issue. Others thought our customers would be afraid that their customers would be scared away or displaced by bots. Still others thought risk was the issue: customers would buy because they were otherwise vulnerable to fraud allegations.

With hindsight we can see that these just aren’t effective ways to understand customer demand. The right question ought to have been, “What ever gave us the impression that eBay would be a customer?” On what basis did we believe that our preferred value proposition would actually drive sales?

We assumed that saving money is a reliable authentic demand. If our confidence in that axiom ever wavered, we could confirm it by reminding ourselves of things corporations do to save money, without recognizing that we were simply confirming a bias.

The same holds for almost all the ways people usually think of what are typically called value propositions. It was starting to dawn on Merrick that some other view of what makes a customer a customer was necessary.

In hindsight, it’s arguable that Damballa did uncover an authentic demand, but because we never figured out its precise nature, we never understood the situations where it occurred. That led to financing the company unsustainably.

Damballa was a milestone for us. As we tried to make sense of the experience, the question of demand—how we should think about it, how we could go about discovering it—started to come into view.

Four Issues that Get in the Way of Innovation

Seeing through the limitations of our assumptions and biases is an important move toward more accurately perceiving real not nots and the authentic demands they entail. You can’t notice what you don’t notice, but if you know something about how people generally distort things, you can take steps to watch out for the blind spots.

There are four big issues that get in the way for innovators:

1. The Curse of Knowledge

Our waking moments are full to the brim with opinions and orientations and views based on inadequate information that somehow felt perfectly adequate. This is called the *curse of knowledge*.

The curse of knowledge messes with our attempting to uncover not nots mostly through our overconfidence. Innovators form opinions before they know it, and never think to question them. When they talk to customers, they’re wildly overconfident that they’re asking the right questions, that they’re communicating to the potential customer accurately, and that they’re understanding the customer’s answers correctly.

Formative innovations are based on new discoveries of not nots and non indifferences, but how can you discover something new when you’ve already explained things to yourself, without even noticing?

2. The Lure of Feathers

In the marketing world, there are ongoing discussions of features versus benefits. Features are functionalities or attributes of a product or service. It has a handle or doesn’t. Benefits are the value that the customer gets from the product or service, at least in the eyes of the marketing department.

In the innovation world, what benefits a customer is a big question, but it leads to a bigger one: Is thinking in terms of benefits the best way to predict how customers will respond? (Spoiler alert: probably not.)

What is clear, though, is that there’s a psychological tendency to think in terms of features and benefits, which gets in the way of identifying authentic demand. A handle may in fact make the product easier to hold, but there may be no unmet authentic demand for “easier to hold.”

3. Fundamental Attribution Bias

Fundamental attribution bias is one of the better-studied cogni-

For innovators, being able to examine can change viewpoints is paramount.

tive biases. It is in play when you see someone's behavior and mistakenly attribute it to their personality. Someone cuts you off on the road and you think, "What a jerk." But if you cut someone off on the road, you might think, "Sorry, but I'm in such a hurry." We naturally blame another person's personality for their behavior, but blame situations for ours.

Inferring personality from a given behavior and predicting behavior based on personality are both substantially less accurate than focusing on the situations people are in. For innovators, this indicates that it's problematic to rely on customer types.

If you imagine that your customer is, for example, a doctor, be aware that the type you're thinking of is probably less predictive of how they'll behave than the situation they find themselves in. Rather than thinking about a doctor, work out the details of a specific doctoring situation.

4. Confirmation Bias

Confirmation bias is the best known and best studied of any of the biases. The phrase covers lots of ways people hold on to their viewpoints and fail to examine them in a new light.

For innovators, being able to examine and change viewpoints is paramount. Without that ability, your innovations will almost certainly rest on unexamined assumptions that are likely to be mistaken.

Here are some of the biggest ways confirmation bias operates:

- Restricting attention to a favorite idea or view, not even noticing that there's a different way to see things
- Only looking for or noticing evidence that supports your view
- When you do see evidence that contradicts your belief, dismissing it or underweighting it compared to supportive evidence
- If you can't ignore contradictory evidence, adjusting your theory as little as possible to keep believing in the main parts of it

The curse of knowledge figures largely in all this. Knowing

something, and being overconfident about what you think you know, feeds into confirmation bias. And it's nearly impossible to find innovators who haven't misled themselves down some confirmation bias pathway.

Diagramming Situations to Uncover Authentic Demand

Sometime around 1534, Andreas Vesalius took a hanged man down from a gibbet in Paris and examined the body carefully. That was a seminal moment in his investigations into how the human body is put together, and it helped launch Vesalius as the father of modern anatomy.

A few centuries later in Lausanne, Alexander Osterwalder wrote a seminal PhD thesis called "The Business Model Ontology," in which he set out to do something similar: pin down the anatomy not of a person but of a business. That thesis was the beginning of a journey that led Merrick to create situation diagrams, a key tool for innovators.

Osterwalder's artifact helps a firm to formally describe its value proposition, its customers, the relationship with them, the necessary intra- and inter-firm infrastructure, and its profit model. The visualization of Osterwalder's results is called the business model canvas (BMC).

Just as in anatomy, where the details of how animals are put together vary enormously but all animals share essential systems, so similar elements can be identified in businesses. According to the model, every business from a corner store to ExxonMobil will include these "organs":

- A value proposition
- A way of creating that value, including activities, partners, and resources
- A way of harvesting that value, including customers, channels to them, and relationships with them
- A financial model—for a business to be sustainable, the cost of creating the value must be lower, in the long run, than the value harvested from it

The BMC is now a template for startups. The idea is that if you iterate on and ultimately validate the parts that fit into

each area, you will end up with a template for a business that, once it's executed correctly, will be viable.

In diagramming for innovation, Merrick narrowed the model down to just four areas: actions, relationships, equipment, and channels.

The four parts of a situation that an innovator can see and test are:

1. Actions: people doing things
2. Equipment/Resources: products and services used in the performance of actions
3. Relationships: activities by people other than the person whose actions we're looking at, serving as a resource for those actions
4. Channels: pathways by which equipment or other people's actions reach and impact the situation

Diagramming situations clarifies how authentic demand arises from within them and how the components of those situations stick together. People in situations cope with them so that the situation remains in place; when gaps open, they act to fill them.

So, for example, when a person is a student, they may maintain their grip on being a student by engaging in activities such as attending classes, and they may have a piece of equipment such as a schedule that lets them know the time and place of each class.

To maintain a grip on the situation, the student will be non-indifferent to that schedule. If it's on a piece of paper and they lose it, a gap will have opened up. The authentic demand is for the gap to be closed and the situation maintained, but it's expressed by the customer as demand for the object.

For an innovator, an object like a paper schedule, or any other equipment, product, or service is not what's in demand. The demand is for the gap closing that's accomplished through that object in a particular situation. It's convenient but misleading to think of the demand as demand for the object. Thinking of the demand as being for the object itself obscures both the size of the market and the risk that the gap may be closed in some other way that wouldn't be noticed as competitive until it's too late.

The World's Deep Hunger: Unconditional Positive Regard

As a main thesis of this book, we've made an argument that

innovators get stuck, and innovation fails more often than it should, because innovators pay too much attention to their deep gladness and not enough to the world's deep hunger.

In our experience, uncovering these hidden "hungers," or authentic demands, can lead to innovation success. If you've got some invention in mind and you get it out in front of people, one of two things will be the case: they'll be either indifferent to it or not. If they're really indifferent to it, then you're sunk.

But if they're non-indifferent, if there's an authentic demand, then you can be sure that on some level they're already coping with the problem you're attempting to solve. That's where unconditional positive regard comes in.

Part of treating potential customers and clients with unconditional positive regard is accepting that they are already experts in their own lives, skillfully coping with their situations. If their coping is inadequate in some way, that's almost certainly because the job of coping with something else is restraining them.

Strikingly, as we've interviewed people who have been involved with Deliberate Innovation, we've heard more about how it has affected their personal lives than about its impact on their work as innovators.

When you notice others succumbing to biases out of common mistakes like fundamental attribution or confirmation bias, you can start seeing these same universal human failings in yourself, leading to more tolerance and more common ground.

And when you start seeing how people's behavior is tied to their situations, opportunities to change things for the better start appearing.

We called this book *The Heart of Innovation* not only because the four of us have spent a lot of our careers trying to get to the heart of innovation but also because of our belief that innovation has a heart.

When innovators identify the gaps between who people feel they are and what they're committed to, on the one hand, and the options that are available to them, on the other, then they enable people to be more whole. Making that happen, through treating colleagues and stakeholders and customers with unconditional positive regard, is a worthwhile goal.

Deliberate Innovation doesn't promise successful innovation every time, any more than coaching promises that every

race will be won. But a world where innovators and their colleagues have a compass to use, where they have techniques to practice and get better at, where there are actually competent innovators, and where competence can be distinguished from luck, would be a world with a lot less waste and a lot more successful innovation, to the benefit of us all.



Matt Chanoff is a San Francisco-based angel investor and co-founder with Merrick of the startup studio Flashpoint. Dr. Merrick Furst is a Distinguished Professor and the Director of the Center for Deliberate Innovation at Georgia Tech. Dr. Mark Wegman is an IBM fellow, IBM's highest technical honor with more than 100 publications and over 16,000 citations. Dr. Daniel Sabbah was the CTO and General Manager, Next Generation Platform, at IBM Corp. He was responsible for creating IBM's Cloud platform.

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